

Rathfarnham Castle Metal



GIACOMETTI

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REPORT AUTHOR

Antoine Giacometti BSc MA MIAI

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RATHFARNHAM CASTLE 2014 EXCAVATIONS REPORT SERIES

- I Rathfarnham Castle Excavations 2014: **Preliminary Stratigraphic Report**. Giacometti, A. 2014. Archaeology Plan.
- II Rathfarnham Castle Excavations 2014: **Glass**. Giacometti, A. 2016. Archaeology Plan.
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Contents

1	Introduction Antoine Giacometti	1
2	Coins and tokens Michael Kenny and Alva Mac Gowan	4
3	Pencil Antoine Giacometti	9
4	Gold Antoine Giacometti and Alva Mac Gowan	11
5	Silver Antoine Giacometti and Alva Mac Gowan	13
6	Copper alloy Alva Mac Gowan and Antoine Giacometti	15
7	Lead Steve McGlade	37
8	Pewter Antoine Giacometti and Alva Mac Gowan	57
9	Tin Antoine Giacometti and Steve McGlade	59
10	Iron Antoine Giacometti	61
11	X-rays Susannah Kelly	75
12	Military artefacts Damian Shiels	84

Introduction

Antoine Giacometti

Metal artefacts made up approximately two thirds of the artefacts from the Rathfarnham Castle 2014 excavations.

Metal artefacts by material

Copper alloy	9411
Iron	1697
lead	372
gold	15
Tin	12
Silver	6
Steel	5
Pewter	3

Total metal objects 11431

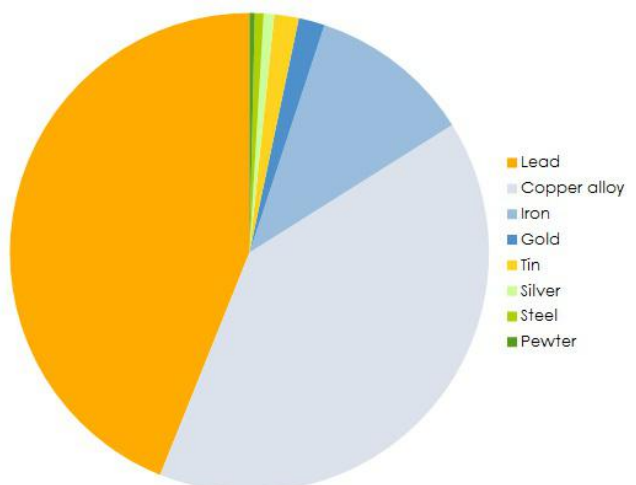
The coins and trade tokens were identified by Michael Kenny, with assistance from Alva Mac Gowan. The earliest item is a late 16th century Nuremberg jeton, and the coins and Irish trade tokens date from 1602 to 1692. The most valuable and exotic coin is a Potosi silver 8 reales, issued from a Spanish South America mint in 1655. Of particular interest is an emergency coinage 'gunmoney' James II half-penny that was minted in Limerick during the siege in 1691. It is at this siege that Adam Loftus lost his life in the same year, and the presence of this coin in the assemblage might not be a coincidence.

I identified the pencil by accident - we had initially thought it was a small fitting from a clock, but when I examined it closely I noticed a small stub of wood with a graphite rod inside. It has been worn down to a stub, but still writes perfectly. As far as I know, it the only pencil excavated in Ireland or England, and the only example of its type in the world. Pencils were first mass-produced for export in Nuremberg in the 1680s. I spoke with John Zeitler, State Archaeologist in Nuremberg and the archival specialists at Staedtler and Faber-Castell, two noted pencil manufacturers from the city, and

they confirmed that no late 17th century pencils from Nuremberg have been identified to date.

Alva Mac Gowan has catalogued the costume-related gold, silver and copper alloy artefacts, and put them in historical context in terms of development in costume and fashion in c. 1700. Most of the metal artefacts are related to costume or dress, and we may be looking at the contents of a dressing-chest containing various pieces for fixing costumes. This is supported by the absence of textiles from the assemblage, despite its potential for survival. Alva's discussion of the costume-related metal artefacts should be read with her discussion on the wood costume-related artefacts and John Nichols catalogue of the leather shoes. In the same way as the metal costume fittings, the shoes were cut to remove their textile uppers. Threads of gold may be evidence of 'parfilage', whereby silver and gold thread were removed from clothing for re-use.

Chart of metal artefacts by material from Rathfarnham Castle 2014 excavations, excluding 9072 brass pins and 1514 iron nails



One of the most beautiful objects, described, illustrated and photographed by Alva, is pair of silver sleeve buttons connected with a fine chain, engraved with shell designs on the back and decorated with tiny flowers of gold leaf set behind glass. These fine buttons may have belonged to Adam Loftus himself! We also identified a fine decorated silver cutthroat razor with ivory inlay and an iron or steel blade.

John Nichols catalogues the lace tags (made of both brass and gold) and the buckles. Some of the buckles may be from shoes, but most were for knee garters or belts. The lace tags are also more likely to come from costume rather than shoes. Metal attachments from the shoes must have been removed before the shoes were discarded.

Ann Keller and Linda Smith from the Guild of Irish Lacemakers very kindly offered their expertise to assist us in describing the lacemaking artefacts. These are represented in both metal and wood, with brass pins, lace bobbins, divider pins, thread lifters, gold thread, needles and needle-case, and a thimble. The assemblage may represent the earliest archaeological evidence found to date of lacemaking in Ireland.

Steven McGlade has catalogued the lead fittings. He identifies four types of lead window came from mullioned and casement windows, and his report should be read in conjunction with his report on the flat glass window panes. Steve carefully cleaned the inside of each of the lead comes and discovered a dated inscription in two of them reading *EW*1692*. Similar marking have been identified in Britain and are likely to indicate manufacture by the London firm of glaziers Edward White. Steve also identifies numerous fragments of lead wire and reused window comes in twists or loops, indicating re-use from windows to repair objects or melt down into other objects (most likely military projectiles, as has been documented extensively in Britain in the late 17th century). It is interesting also to note that the earliest crystal wineglass from the assemblage, described in the glass report, was repaired by a lead cage, which may also have been repurposed from a window came.

A pewter spoon and fragments from pewter plates were identified. A tin dredging box (a sort of perforated lid used to sprinkle crumbs and seasoning onto roasting meats) was also identified by the author. This is one of the few vessels from the assemblage that would have been used in the kitchens, and it is interesting that we have no iron, brass or copper vessels in the assemblage, although these would have been common kitchen utensils in the period.

The military assemblage is described by Damian Shiels of Rubicon Heritage. He describes the harquebusier armour breastplate, pistol and slug shot, a dagger chape and a scabbard hanger. It was probably either discarded during the Confederate Wars when the castle was garrisoned variously by Royalist and Parliamentary troops, or else it formed part of the Loftus family armoury in the later 17th century. We found evidence that lead bullets and gunspalls (gunflint) were manufactured on site, which is not surprising, possibly using fragments of recycled window lead. The entire military assemblage is associated with cavalry, which would be consistent with Loftus' personal armory.

Function

The metal artefacts can be categorised by function.

Metal artefacts by function

Costume	9257	81%
Fitting	1936	17%
Military/hunt/horse	110	1%
Coin/weight/ingot	58	0.5%
Vessel (non-table)	12	0.1%
Tableware	9	0.1%
Key	8	0.1%
Toiletry (razor)	2	-
Pencil and plumb bob	2	-
Unidentified	35	0.3%
Total	11431	100%

The costume category dominates the metal artefacts, due to 9,078 small brass pins, used for lacemaking, needlework and sewing clothing. The pins alone represent 79% of the metal

artefacts, so with these excluded costume-related metal artefacts number almost 8% of the assemblage, which is still the second largest category by function.

The remaining costume artefacts are sewing tools (needles, bodkins, divider pins and a thimble), metal clothing attachments (buckles, buttons, dress-fasteners, lace tags, wire and a belt mount), jewellery, a dress or hat pin, and a spring-catch purse. The non-pin costume artefacts are primarily (88%) of copper alloy (probably copper or brass), frequently gilded, but include smaller amounts of gold (8%) used for jewellery and lace tags, iron buckles (2%), steel needles (1%) and composite items such as the gold, silver, glass-crystal and copper alloy sleeve buttons.

The next most significant category is fittings and furnishing. This is dominated (78%) by 1,514 iron nails, then by lead window comes (6%) and other fragments of lead from roofing, re-used and recycled comes and roofing lead (6%), 109 brass tacks (6%) and 22 probably brass curtain rings (1%). The remaining fittings are parts of handles, hinges, locks, wire, hooks, mounts and staples.

Military-related objects are described in more detail in the military report by Damien Shiels. This category includes an iron armour breast-plate of late 17th century date, a gilded copper alloy sheath chape, a silver strap adjuster from a sword scabbard or harness, 99 lead projectiles (slugs, musketballs and shot), iron horseshoes, spurs and stirrups, and a copper alloy hunting snare.

The next category is represented by 16 silver and copper alloy coins, 20 lead weights, and 22 lead ingots and offcuts that may have been used as weights. These lead objects may have had a military use.

Non-table vessels are represented by fragments of a tin dredging box (a kitchen item – one of the few kitchen items in the assemblage), an iron bucket handle and iron barrel hoops.

Tableware is represented by fragments from a pewter plate, pewter and silver spoons and iron

knife handles. Bone and ivory cutlery handles are discussed in the bone objects report.

Eight keys or key fragments were recovered. Two fragments of a decorated silver, iron and copper alloy cut-throat folding razor. A copper alloy, wood and graphite pencil (probably the second oldest pencil found in the world, and the only example of an early mass-produced late-17th Nuremberg pencil) and a lead plumb bob are the last metal artefacts.

Metal by predominant function (in order of quantity)

Copper alloy	Costume, fittings, coins
Iron	Fittings, military/horse, keys
Lead	Fittings, military shot, weights
Gold	Costume
Tin	Vessels (kitchenware)
Silver	Toiletry (razor), coins, military
Steel	Cutlery (late), costume (needles)
Pewter	Tableware (cutlery and serving vessels)

The charts above and below show the relationship between artefact function and metal type. This is relatively predictable, except for the absence of silver used for general costume, and its use instead for toiletry, coinage and military outfit. It could be argued that in the Rathfarnham Castle assemblage silver is used for stereotypically male objects only. The other interesting distinction is with the tin-alloys, where (in the Rathfarnham Castle assemblage) tin was used in the kitchen, and pewter (an alloy of tin and silver) was used at the table.

Function by predominant metal

Costume	Copper alloy, gold
Fitting	Iron, lead, copper alloy
Military/hunt/horse	Lead, iron, military
Coin/weight/ingot	Copper alloy, lead, silver
Vessel (non-table)	Tin, iron
Tableware	Pewter
Key	Iron
Toiletry (razor)	Silver
Pencil and plumb bob	Copper alloy, lead
Unidentified	Iron

Coins and tokens

Michael Kenny and Alva Mac Gowan

Of the identifiable coins, the earliest is an Irish copper penny of Elizabeth I from 1602 (Michael Kenny pers. comm. 2015 & rest of this section). The issue of copper pennies and half-pennies in 1601-02 coincides with the issue of a base silver coinage of shillings, sixpences and threepences issued by Elizabeth I to help finance the war and pay the troops involved in the campaign against the Ulster chieftains, Hugh O'Neill and Hugh O'Donnell.

There are four farthing tokens, one of James I and three of Charles I. As these were issued under royal license they are usually named from the licensees and are therefore known as Harrington or Lennox farthings (reign of James I) and Richmond or Maltravers farthings (reign of Charles I). The first license was issued to Lord Harrington in 1613 and this was taken over later by another royal favourite the Duke of Lennox. In the reign of Charles they were issued by the Duchess of Richmond and later by Lord Maltravers. There are numerous dies, mintmarks and design variations and since the tokens here are in fairly poor condition I have not attempted to subdivide them beyond that of reign.

The other identifiable copper coins include two regular halfpennies of Charles II and William and Mary, a Dublin trade token issued by Mic(hael) Wilson in 1672, and an interesting emergency issue Hibernia halfpenny issued by the Jacobites at Limerick in 1691. The Limerick halfpenny holds particular interest as Rathfarnham Castle's resident at the time, Adam Loftus, the Baron of Rathfarnham and Viscount of Lisburne, lost his head there to a cannonball. It is possible that he managed to pocket a few of these Jacobean coins before dying. The Hibernia halfpenny is in fact an emergency coin produced by over striking an earlier emergency coin. The entire 'gunmoney' issue of James II was an emergency coinage, struck to help finance his war against William



9:179 Elizabeth I 1602 Irish halfpenny



Elizabeth I 1602 Irish halfpenny
9:179



James I (1613 onwards)
9:266



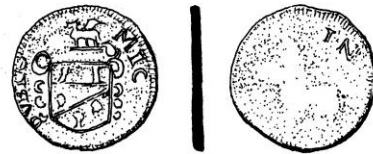
Charles I (1625 onwards)
9:268



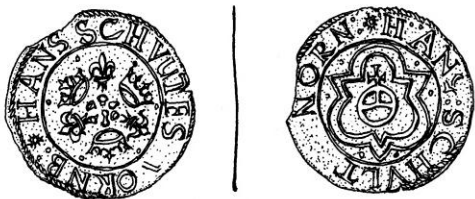
Charles II halfpenny
6:4479



Halfpenny token Mic(hael) Wilson
Dublin 1672
6:4483



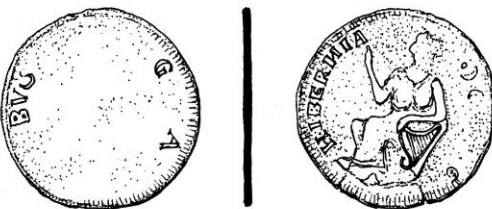
Late 1600s Hans Schultes
Nuremberg Jeton
6:4484



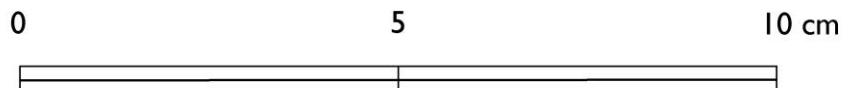
Philip IV (of Spain) 8 Reale
Pirate Cob
9:270



James II copper halfpenny
6:4484



William & Mary 1693(?) copper halfpenny
6:4478





6:4479 Charles II halfpenny



9:266 James I (1613) Farthing token



III. Struck in brass, lead, pewter and whatever base metals could be found, the denominations bore no relationship to the actual intrinsic metal worth of the coins. Among the issues struck were brass shillings and it was these coins that were over struck during the Siege of Limerick, to circulate at the more realistic value of a half-penny as Jacobite finances collapsed. Some elements of the original design are still faintly visible on the Hibernia piece. After the war, the entire emergency coinage of James was reduced to its actual metal value (which was very little) and soon afterwards demonetised completely, which was presumably disastrous for the unfortunate traders, merchants and soldiers who had been forced to accept it as payment or wages.

The trade tokens of the period c.1650 to 1675 are little historical documents in their own right. Not only do they provide the name of the issuer but also the name of the city or town where they were produced and sometimes the date. In some cases, especially in the larger centres such as Dublin, they also carry a street name. More importantly they often denote the trade of the issuer, either directly by name or in heraldic form by carrying the arms of the trade guild to which he belonged. The Wilson token bears the arms of the Guild of Butchers, indicating that this was his trade.

The Potosi silver 8 reales is the most 'exotic' of the coins but is not particularly rare. Spanish silver, especially issues from the mints and mines of South America, circulated widely in Ireland in the 17th century. The authorities issued ordinances at different times, regulating foreign coins by weight and value and had official sets of coin weights made to facilitate their use by merchants and traders. The South American coins are often of poor quality in terms of style and design but mostly of good silver. They are usually very hard to read, with a baffling array of designs, mintmarks and assay masters' initials. Difficulties of identification are made harder by the fact that there were three kings of Spain in succession with the same name, Philip II, III and IV. Luckily the date, 1655, is fairly clear on the Rathfarnham coin, which places it in the reign of Philip IV (1621-65). The number 8, representing the denomination, 8 reales, is also visible, as is the mint initial P for Potosi



9:270 Phillip IV 8 Reale Pirate Cob



and the initial E for Antonio Ergueta who was the principal assayer at the mint for nearly three decades, from c.1650 until his death or retirement in 1678. Potosi was hit by a major scandal in the late 1640s, involving corruption, absenteeism, sub-letting of jobs and poor quality silver. A big clear out followed and some officials were executed (by beheading), others jailed and several banished. Ergueta came in as part of the new team and was especially associated with the Pillars of Hercules design type of which the Rathfarnham coin is an example.

The final piece worth noting is neither a coin or a token but a jeton or counter, struck at Nuremberg at the end of the 16th century. Jetons were widely used for counting and accounting in the medieval period. For that reason they are usually found in urban centres where there were banking houses, large trading enterprises, taxation points and markets, places where substantial sums of money were counted and financial transactions carried out. Nuremberg was one of the great European centres for their production in the 16th and 17th centuries and the business was controlled by a small number of families such as those of Krauwinkel, Schultes, Koch and Lauffer, who sometimes intermarried. The Rathfarnham piece was made by Hans Schultes. There were three jeton masters of that name, father, son and grandson. The jeton here was probably struck by Hans II, master from 1586 to 1603. The master's mark, clearly visible, is a rosette. The mark of Hans I was a wedge. To add to the difficulties of identification, the jetons of Hans III also carried a rosette but were stylistically slightly different.

The Rathfarnham coins probably represent accidental and casual loss over time. The time span is too great for a hoard and the small coppers or the jeton are unlikely to have ever been hoarded anyway. The only coin whose loss might have been felt by the owner is the Potosi 8 reales piece ('piece of eight'). Accidental loss of small and insignificant material may provide a better idea of what was actually in people's pockets than the big hoards of the 17th century.

E4468:9:179 Penny, Irish, Elizabeth I, 1602. Copper

O. Royal arms in shield.

Around (O), ELIZABETH.D:G:AN:FR:ET:HIBER:RE:

R. Crowned harp and date 1602.

Around (R), POSVI.DEV.ADIVTOREM.MEV. Mintmark: martlet.

E4468:9:266 Farthing token, James I, undated (from 1613 onwards) Copper

O. Cross and sceptres. Around, IACO:D:G:MAG:BRI:

R. Crowned harp. Around, FRA:ET:HIB:REX. Mintmark: cross

E4468:9:267 Farthing token, Charles I, undated (from 1625 onwards) Copper

O. Cross and sceptres. Around, CARO:D:G:--(worn)

R. Crowned harp. Around, FRA:ET:HIB:REX. Mintmark worn, probably a rose or cinquefoil

E4468:9:268 As 267. Mintmark: cross

E4468:9:269 As 267 and 268. Extremely worn.

E4468:9.270 8 Reales, Spanish, Philip IV, 1655. Silver (Menzel Type VIII)

O. Shield with arms of Spain (the lion and castle represents Leon and Castile). P for Potosi to left of shield, E for (Antonio) Ergueta to right. Around, PHILIPPVS legend, worn
R. Pillars of Hercules with waves. Motto, PLVS VLTRA and date (16)55. Number 8 (for 8 reales) top center. Date, 1655, also below waves. P for Potosi to right of Pillars, E for Ergueta to left. Legend worn.

E4468:6.4483 Halfpenny token, Mic(hael) Wilson, Dublin, 1672

O. Shield with arms of Butchers Guild. Around, MIC.WILSON OF DUBLIN
R. St. George on horseback, slaying dragon. Around, HIS HALFPENY 1672

E4468:6.4479 Halfpenny, Irish, Charles II, 1680. Copper

O. Bust to right. Around, CAROLVS.II.DEI.GRATIA
R. Crowned harp with date to left and right, 16-80.
Around, MAG.GR.FRA.ET.HIB.REX

E4468:6.4480 Limerick halfpenny, emergency coinage, James II, 1691. Brass

O. Bust to left. Around, IACOBUS.II.DEI.GRATIA.
R. Seated figure of Hibernia, facing left, holding cross. Around, HIBERNIA and date, 1691. The letter N in HIBERNIA is reversed, which is usual for those coins.

E4468:6.4478 Halfpenny, Irish, William and Mary, 169(3?). Copper

O. Conjoined busts, facing right. Around, GVLIELMVS.ET.MARIA.DEI.GRATIA
R. Crowned harp with date to left and right of crown, 16-9(3?). Around, MAG.BR.FR.ET.HIB.REX.ET.REGINA

E4468:6.4484 Nuremberg Jeton

Hans Schultes II, 1586-1603. Brass. (Mitchener number 1388)
O. Alternating lys/crown design around central rose. Around, HANS SCHVLTES NORNB. Mintmark: rosette
R. Cross and orb. Around, HANS SCHVLTES NORN. Mintmark: rosette

Uncertain

E4468:7.515 Halfpenny size, prob. Seventeenth century. Possible outline of bust to right.

E4468:6.4482 Farthing size, copper or base silver

E4468:6.4485 Possibly button, base metal

E4468:2.185 Prob. Seventeenth century copper. Extremely worn.

E4468:6.4481 Uncertain

Weight or token

This copper alloy (or possibly lead alloy) impressed disc, not examined by Michael Kenny, is likely to be a weight or token.

E4468:9:274 Brass or lead alloy, coin/weight/token

Circular cast disc impressed with "C C", Charles II? Front has raised ridge along its edge. Back is flat. D 30mm, T 4mm, Wt 14g



9:274 Lead/brass weight or token

References

The farthings, halfpennies and tokens are fairly common issues and are listed in the general textbooks on Irish coins and tokens. The Wilson token features in G.C. Williamson, *Trade Tokens Issued in the Seventeenth Century in England, Wales and Ireland Vol II*, (London, 1891). The Potosi 8 reales is discussed at length and illustrated in Sewall Menzel, *Cobs, Pieces of Eight and Treasure Coins: The Early Spanish-American Mints and their Coinages* (New York, 2004). The author devotes an extensive section of his work (pp235-367) to the Potosi mint. The coin above appears to correspond to his Type 8 (p.312) The jetons of Hans Schultes and his contemporaries are listed in great detail in Michael Mitchener, *Jetons, Medalets and Tokens: The Medieval Period and Nuremberg, Vol.I* (London, 1988). The example which closest resembles the Rathfarnham piece is Mitchener's number 1388, illustrated on p.406

Pencil

Antoine Giacometti

The stub of a pencil (E4468:3:173) found at in a c. 1700 context at Rathfarnham Castle is the earliest (and perhaps only) pencil found from an excavation in Ireland, and is one of the earliest pencils found in Europe.

The earliest reference to graphite writing tools date from the mid-16th century in England, following the discovery of graphite deposits in the Cumbrian hills. The graphite was sawed into thin rods and sandwiched between pieces of wood to make the first pencils. It was originally believed that the graphite was form of lead (plumbago) and it was not until the late 18th century century that the chemist Karl Wilhelm Scheele showed it was a new material (which he named graphite) derived from carbon. The earliest depiction of a pencil dates from 1565 and was published in Swiss naturalist Conrad Gessner's book of fossils (*De Rerum Fossilium Lapidum et Gemmarum Maxime, Figuris et Similitudinibus Liber 1565*). It has a copper finial, as does the pencil stub from Rathfarnham Castle.

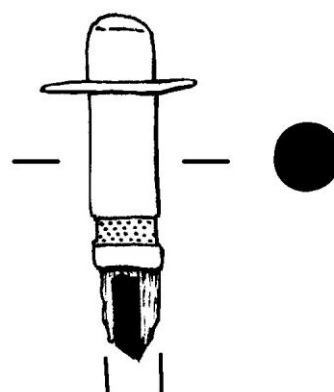
The first German reference to a pencil is in 1644, and the first reference to a pencil-maker as a trade dates from 1659, referencing Hanns Baumann of Nuremberg. Other Nuremberg-based pencil makers such as Jäger, Jänicke, and Staedler are also recorded in the 1660s in Nuremberg, which had become a centre for the manufacture of pencils by the late 17th century (Faber Castle undated).

The earliest surviving pencil in the Faber-Castell pencil collection is a Carpenter's pencil made of lime wood, which was found in the roof beams of a house erected in Swabia at the beginning of the 17th century (pers. comm. E. Luther 2016). This pencil does not resemble the Rathfarnham Castle pencil.

Unfortunately no surviving Nuremberg late



3:173



17th pencils survive (pers. com. Faber-Castell and Staedler archives). From excavations in Nuremberg no pencils or brass finials similar to the Rathfarnham Castle example have been discovered (pers. comm. John Zeitler, State Archaeologist Nürnberg 2015).

The Rathfarnham Castle pencil was heavily used right down to a stub, and then discarded with an assemblage of late 17th century artefacts (c. 1670-1720) that was sealed during the 1720s. It is therefore one of the oldest surviving pencils in the world. It could have been manufactured in England or continental Europe, however the most likely origin for the pencil is Nuremberg (despite the absence of comparable material) as that was a centre of pencil manufacturing during this time.

Ellen O'Carroll identified the wood type of the pencil as Yew (refer Wood Identification Report).

Copper alloy pencil finial, wood and graphite E4468:3:173

Copper alloy finial with delicate decoration, fitted onto a fragment of wood with an internal square shaft of graphite 1.4mm across. Wood pencil tip is broken (rather than sharpened) leaving only a stub. Bears some resemblance to finial at end of illustrated pencil in 1565 ("De Rerum Fossilium Lapidum et Gemmarum Maxime, Figuris et Similitudinibus Liber" by Swiss naturalist Conrad Gessner).
L 17mm D 5mm

Gold

Antoine Giacometti, with assistance from John Nicholl

Gold lace tags (John Nicholl)

Most of the lace tags identified in the Rathfarnham Castle assemblage were made from gilded copper alloy, however ten (22% of the total) were made from gold foil.

The lace tags are most likely to be from the ends of laces and drawstrings on clothing. Lace tags were also used on shoe laces until the mid-17th century, at which point buckles became increasingly popular.

The tags in the assemblage were all made in the same manner although there was some variety in the finished article. They can be divided into 4 types. The basic method of manufacture for all 4 types involved cutting a small rectangle of thin foil or metal, placing the lace on top, folding the foil sides to crimp the lace before rolling it into a tight tube, sometimes with a slight taper towards the point. These tubes are consistently 2mm in diameter with some tapering to 1mm at the tip. Three larger but similarly made lace tags were recovered from the Courthouse Lane excavations in Galway (Scully, 2004) and from 17th century deposits in the St. Peter's Church excavations in Waterford (Scully, 1992).

The lace tags made of gold, notably E4468:6:4630, E4468:9:296, 306, 312 and 314, are very thin and with the exception of E4468:9:312 have been flattened in such a way as to suggest this may have been deliberate before deposition. E4468:6:4630 and E4468:9:312 seem to have been decorated with a closely-spaced, overall pattern of small diamond impressions. This could equally have been the result of a tool used to crimp them shut as opposed to deliberate decoration. This particular group show no signs of surface tarnish.

The golden lace tags are all classified as either Type 1 (291, 296, 300, 303, 309 & 311), ie from

20mm-34mm in length and 2mm in diameter, tapering to a 1mm point, or Type 4 (4630, 312), ie measure 18mm in length, tapering to 1mm at the tip and are decorated with a pattern of small diamond shapes. No type 2 or 3 are represented in gold.

Lace Tag E4468:6:4630

of thin, possibly gold foil, stamped with a pattern of tiny diamonds, folded along both edges and rolled into a tapering tube L: 19mm x 4mm – 1mm.

Lace Tag E4468:9:291

flattened tapering tube of gold foil, folded at edges and rolled.
L: 32mm W: 4mm

Lace Tag E4468:9:296

tapering tube of gold foil flattened at wider end. L: 26mm
W: 4mm – 1mm.

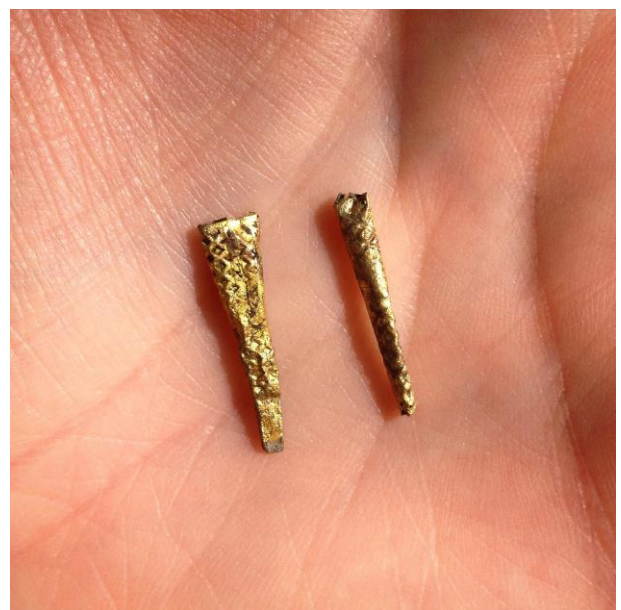
Lace Tag E4468:9:300

tapering tube of thin, gold sheet, folded at edges and rolled.
L: 31mm W: 2mm- 1mm

Lace Tag E4468:9:303

incomplete gold foil lace tag, edges folded and rolled L:
19mm W: 1mm

Gold lace chapes



Lace Tag E4468:9:306

flattened lace tag fragment of gold foil. L: 10mm W: 2mm

Lace Tag E4468:9:309

flattened tube of thin gold foil, edges folded L: 22mm W: 2mm

Lace Tag E4468:9:311

broken and with slight taper, gold foil. L: 17mm W: 2mm

Lace Tag E4468:9:312

incomplete and with slight taper, gold foil impressed with diamond shaped motifs L: 17mm W: 2mm – 1mm

Lace Tag E4468:9:318

incomplete, of gold foil, flattened, edges folded and rolled into a tapering tube. L: 12mm W: 2mm



6:5561 gold leaf fragments

Gold leaf

Two fragments of gold leaf were identified. One of these was impressed with a floral and ribbed design. Gold leaf was also present on the yew knife handle (7:612) which is described in the wood artefacts report).

Gold leaf fragment E4468:9:412

Flat sheet with two creases running down the centre indicating that it was originally folded over three times to form a strip.

L 23mm, W 13mm

Gold leaf fragments E4468:6:5561

Two pieces of impressed gold leaf, though they are in poor condition, a faint impressed floral design is visible. The edges are trimmed with a ribbed design. Possible traced or red paint.

Longer piece: L 46mm, W 12.2mm; shorter piece: L 24.7mm, W 11.3mm

Gold thread

Two short lengths of gold thread were identified, though these could be fragments of very thin wire. If thread, they should have a linen or flax thread core. These may be from buttons or other dress, or from jewellery. Gold thread is much more likely to have been used in lacemaking than in sewing/needlework as gold is not pliable enough to sew with (Anne Keller pers. com 2015).

Gold thread E4468:7:589

Fragment of gilded wire/thread.

L 69mm, T 0.02mm

Gold thread E4468:7:590

Fragment of twisted fine gold thread, with a knot at one end.
L 56mm

Gilded objects

39 gold-gilded copper alloy objects (mostly lace tags, dress fasteners and pieces of jewellery) are described in the copper alloy specialist report.

7:590 gold wire



Silver

Alva Mac Gowan and Antoine Giacometti

Sleeve buttons

Sleeve buttons, also referred to as 'sleeve-links' or 'pair-buttons' were most commonly made of metals like copper alloy, pewter and gold. Unlike today, sleeve buttons were not actually sewed onto the garment. They were produced in pairs and were attached with a metal link or chain. For much of the 17th century sleeve cuffs were made from finely woven lace, initially ribbons were used to tie them until sleeve buttons were invented towards the end of century, they became highly fashionable among the upper classes in Britain and Europe. Difficult to date, sleeve buttons continued in use right into the early 19th century when they were finally replaced by 'cuff links' as the fashion for heavily starched cuffs meant that buttons could no longer fit through the stiff cuff hole (White, 2005).

Two sets of sleeve buttons were found at Rathfarnham. One set is plain, but the other set (E4468:2:189) is stunning. Cast in two parts connected with a fine chain of pewter or silver, the backs are engraved with a minute symmetrical design of four shells pointed inwards towards the central shank and are intertwined with beading. The faces are set with a clear glass paste, behind which are tiny flowers backed with gold leaf.

Sleeve buttons E4468:2:189

Cast in two parts from pewter or silver; back is engraved with a minute symmetrical design of four shells pointed inwards towards the central shank and are intertwined with beading. The link is U-shaped link. The face is set with a clear glass paste, behind which are tiny flowers backed with gold leaf. Suggested date: late seventeenth-early eighteenth century. Individual button measurements: button D 12.5mm, T 5mm; shank 3m; link L 12mm

2:189 silver sleeve buttons



Silver-inlaid foldable razor

Razor handle E4468:6:5559

Composite handle item of at least three materials. Internal part made of iron and possibly wood, with gap to hold foldable blade, which may or may not be present. Exterior inlay of silver? Screwed onto body with 2-3 tiny copper alloy screws that showed up in the X-ray. One side of razor appears to be made of copper alloy according to X-ray. Same artefact as E4468:9:3530
L 85mm W 18mm T 11mm
X-ray 2828 & see closeup page 34.

Razor handle inlay fragment E4468:9:3530

Small fragment of silver? Razor handle inlay fragment, same object as 6:5559 and possible refit.
L 23mm W 11mm T 1mm

Silver strap adjuster

This silver strap adjuster is probably from a

leather sword harness, and may be associated with a leather scabbard hanger and perhaps even with a metal chape for a dagger or bayonet sheath.

Silver Strap Adjuster E4468:7:564-565

Undecorated rectangular strap adjuster broken in two parts at centre. There are two projecting lobes on opposite corners of one half. Each lobe has been centrally pierced to take a rivet with a third rivet hole located in between. Three rectangular openings, L: 16mm x 4mm, allow the adjusting of a narrow strap. Possibly part of a sword scabbard harness or a narrow belt. Examined by John Nichols. L: 29mm W: 27mm

Silver coins

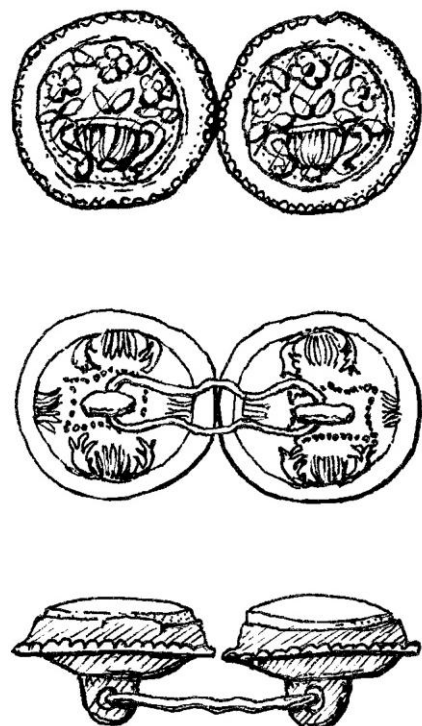
Two silver coins (6:4481 & 9:270) are described in the coin specialist report.

2:189 silver sleeve buttons



Illustration by Alva Mac Gowan

2:189



Copper Alloy

Alva Mac Gowan

This copper alloy artefacts report is by Alva MacGowan, with assistance from Antoine Giacometti, Anne Keller from the Guild of Irish Lacemakers, and John Nicholls on shoe-related artefacts. Illustrations are by Alva Mac Gowan.

The following abbreviations are used: L = length, W = width, T = thickness, B = breadth, H = height, BL = blade length, D = diameter, Wt = Weight.

Jewellery and fancy dress items

Numerous copper alloy jewellery and fancy dress items were identified. These included four gilded golden flowers made of gilded copper alloy wire (E4468:3:180, 6:8192, 7:605, 9:411), possibly from brooches or earrings; gilded thread and loops; finger rings; and a tiny gilded cherub.

One of the most interesting items was a gilded copper alloy chape (E4468:6:4696) for a dagger or bayonet sheath and is typical of those worn in the 17th century (Roberts 2002).

Another interesting item was a metal spring-catch frame for a small purse (E4468:6:4665). It is U-shaped with what appears to be a hinge set into each terminal. Such frames are usually of copper-alloy or silver and are richly decorated. The body of the purse would have been of fabric or thin leather and secured with small rivets. Two rivet holes are visible on either arm. There is a small round fastener on the outside frame centre with which the purse would have hung on a decorative chain. Spring-catch framed purses are usually dated to the 15th and 16th centuries. The U-shaped frame represents the final development and is probably late 16th to early 17th century in date (Goubitz, 2007).



3:180 gilded flower ornament with quartz



7:605 gilded flower ornament



7:531 sleeve buttons (front and back)



7:599 winged cherub figure



Gilded flower E4468:9:411

Gilt copper alloy or brass flower. Circular in form, composed of 16 petals each 9mm long, radiating from a central hole. Each petal is 9mm long and 3mm wide. Most likely cast from a mould each petal is not exactly even. Could have been used to embellish a piece of jewellery, costume or a decorative fitting. D 30mm, T 6mm.

Gilded flower E4468:7:605

Cu alloy wire, delicate flower shape composed of four complete and one incomplete petal shapes; made from intertwined and twisted flat strips of gilded copper alloy and finer gilded copper alloy wires. Possibly from a piece of jewellery, e.g. brooch or costume embellishment. Suggested date: sixteenth to seventeenth century. W 32mm, T 1.5mm

Gilded flower E4468:3:180

Cu alloy wire. Similar to E4468:3:179, with four petals-each one is curled in towards the centre. This artefact was found with a small fragment of quartz in the centre, which may have been part of the jewellery. May be related to E4468:3:179. W 16mm, T 5mm

Gilded flower E4468:6:8192

Intertwined and twisted flat strips of gilded copper alloy and finer gilded copper alloy wires. Same form as E4468:3:179 & 3:180; most likely related, however this piece has unravelled. L 22mm

Earing loop E4468:3:179

Cu alloy wire. Piece of wire that has been manipulated to form a loop. Possibly from a piece of jewellery e.g. earring.

Gold thread E4468:7:589

Fragment of gilded wire/thread. L 69mm, T 0.02mm

Miniature gilded winged cherub figure E4468:7:599

Gilt copper alloy/brass? H 19mm, W 11mm

Finger ring E4468:6:4647

Copper alloy? Pewter? Circular in form; flat in section. Highly corroded, some detail possible under corrosion. Small finger ring? T 2mm, D 19mm

Finger ring E4468:7:608

Copper alloy circular loop. Not a finger ring. Perhaps jewellery related. D 7mm, H 1.3mm

Finger ring E4468:3:181

Small brass ring most likely associated with costume or jewellery. Made by manipulating a piece of wire into a circular shape, leaving a tiny gap for linking. Terminal is thickened. W 2mm, D 1mm-1.5mm

Sleeve buttons E4468:7:531

Brass plated copper alloy or pewter; plain flat disc shaped cast buttons with soldered shank with drilled eyelet. U-shaped link. Suggested date: late seventeenth-early eighteenth century. Individual button measurements: button D 11.5mm, T 3mm; shank 3m; link L 12mm



6:4647 finger ring



Unidentified copper alloy object E4468:6:4642
Highly corroded. Curving oval shape. Some possible engraved detail on the surface that should be evident after conservation. Jewellery related?
D 14mm

Sheath Chape E4468:6:4696

Gilded copper-alloy for a dagger or bayonet sheath typical of those worn in the 17th century (Roberts 2002).. Oval in profile and made from thin copper-alloy sheet folded and sealed along the overlap with a rounded metal button plug sealing the base. The gilded finish is tarnished in places. L: 54mm x 15mm tapering to 4mm

Spring-Catch Purse Frame E4468:6:4665

Broad, U-shaped, copper-alloy frame with deep recesses for securing the edges of a leather purse with small rivet holes visible at the frame edges. The remains of a spring mechanism are visible at each arm terminal. A corroded knob-shaped protrusion at the centre of the outside edge of the frame probably served to close the purse. Frame width: 65mm Frame depth: 40mm. Probably from the same object as iron artefact E4468:9:265.

Dress and Sewing Implements

Costumes worn by the higher-status occupants of Rathfarnham Castle during the period would have been made from fine textile. Whilst no cloth garments were recovered during the excavation, evidence for their presence survived in the form of buttons and dress fasteners. Some silk and linen textile fragments were recovered

during the excavation, however these are more likely to be associated with the footwear. They do, however, demonstrate that silk and linen textiles would have survived had they been deposited amongst the other artefacts. The absence of costume textiles demonstrates the great value placed on these, as they must have been re-used or mended, recycled in the manufacture of other garments and accessories, or handed down to others and servants. According to 16th century royal inventories, the ‘Royal Wardrobe’ of Elizabeth I was in fact a building used to house her extensive collection of over 1,326 dresses, which were managed by a specialised team. Not a single one of these dresses survive today as a result of them being handed on to maids and servants, passed on, or cut up and recycled.

The needles and divider pins area associated with lacemaking, as are the wooden bodkins, wooden divider pins and other items including perhaps the thimble and needlecase. Lacemaking in Rathfarnham Castle would have been either a servant or a lady of the house. Needlework was traditionally carried out by high status women, but the status of 17th century lacemaking is unknown. Later historical documentation from 19th century Ireland suggests lacemaking



Brass pins

was carried out by a village lady (Anne Keller pers. com). Fragments of gold thread (or very fine wire) would have been more suitable for use in lacemaking than sewing or needlework.

Pins

In 1775 Abigail Adams wrote a letter from colonial Massachusetts to her husband John Adams, who was to become the second president of the United States (1797-1801), in London requesting him to send her 'a bundle of pins and put in your trunk.'

'The cry for pins is so great that what we used to buy for 7.6 are now 20 shillings and not to be had for that. A bundle contains 6 thousand for which I used to give a dollar, but if you can procure them for 50 [shillings] or 3 pound, pray let me have them.'



3:169 thimble

Just over 9,450 straight wire-drawn brass pins were uncovered at Rathfarnham Castle. Although wire-drawn pins are a common find on excavations and were extensively used from the 13th century onwards (Biddle & Barclay 1990, 560), this is likely to be the largest assemblage recovered from a single excavation in Ireland. In contrast, 21 pins were excavated during excavations at a contemporary site in Smithfield in Dublin (Myles 2000) and 37 pins were recovered from Trim Castle (Hayden 2000, 329).

The brass pins recovered at Rathfarnham are drawn-wire pins, with wire-wrapped heads. During their manufacture the solder would add globular heads to pins as the wire was twisted around the unsharpened end. There is no consistency to head sizes, but the smaller pins generally have smaller heads. Each individual pin had to be sharpened by grinding. Mechanisation began in the Georgian period, by the end of which time pins were being mass-produced in enormous quantities. The varying size depended on the particular use of the pin: smaller ones were for sewing and mending while longer ones, which had larger heads, were dressing pins. Pins were carefully kept in pin cushions and would have been straightened and

sharpened periodically. They were never left in clothing, in order to prevent oxidation.

Dressing pins would have been used to hold skirt flounces, ruffs, cuffs, veils, and jewels, to fasten the front bodice of a lady's gown, to fix a gentleman's neck cloth and even to secure a baby's napkin. They were also essential for bobbin lace making, and hundreds would have been used for pinning and weaving lace patterns.

The pins can be roughly divided into five different sizes: extra small (XS), small (S), medium (M), large (L) and extra-large (XL).

Size	Dimensions
XS:	L 20.5mm, T 0.6mm (shaft), W 1.1mm (head)
S:	L 25mm, T 0.8mm (shaft), W 1.4mm (head)
M:	L 29.8mm, T 1mm (shaft), W 1.9mm (head)
L:	L 35.5mm, T 1.05mm (shaft), W 2mm (head)
XL:	L 38.8mm, T 1.1mm (shaft), W 2.9mm (head)

Straight pins E4468:2:218-637, E4468:3:333-1308, E4468:4:603-692, E4468:6:5578-8,037, E4468:7:729-3,053, E4468:8:39-53, E4468:9:724-3,512

Context No.	Find No.	Quantity of Pins*
2	218-633	416
3	333-1308	976
4	603-692	90
6	5,578-8,037	2,460
7	329-3,053	2,325
8	39-53	15
9	724-3,512	2,789
9	3519-3523	4**

* Calculated by weight

**The four pins (3519-3523) from context 9 are stuck in a mass of corrosion around nail 3524.

Thimble

Thimble E4468:3:169

Brass/ Cu alloy; pressed-metal domed thimble with slightly everted foot ring. The thin wall bears seventeen circumferential rows of small round machine stamped pits and a rectilinear grid of larger pits on its top. There are two patches of corrosion on the lower wall, above the foot ring, where the wall is missing. It is worn along the side and not on the top suggesting it has been side-used; this is a personal style and has no implications for the type of needlework/lacemaking it was used for (Anne Keller pers. com. 2015). The type was probably introduced to England by John Loffing, a Dutchman who manufactured thimbles there from the 1690s until at least the middle of the 18th century. Suggested date: seventeenth-eighteenth century.

H 19.4mm, D 12.1mm

Dress, hat or hair pin

Dress, hat or hair pin E4468:3:178

Brass dress pin topped with globular head made from twisted brass wire that has been soldered onto the blunt terminal. The shank has an old bend. Original L 36.3mm, T of shaft 1mm, W of head 21mm



3:178 hat pin

Divider pin

Divider pins are used in lacemaking to separate groups of bobbins, and up to five hundred of them can be used for the manufacture of a pillow case, for example. This divider pin was identified by Anne Keller from the Guild of Irish Lacemakers.

Divider pin E4468:7:3076

Brass, gold toned straight wire drawn divider pin with globular head. The head is shaped into rough sphere of copper alloy that has been wrapped around the blunt end of the shank. Gold toned with some pitted corrosion on the shank.

L 55.1mm, W of head 3.5mm, W of shank 1.1mm



7:592 netting needle

Netting needles

Fine-netting needles would have been used in the seventeenth century to produce netting for hairnets, which would have been worn at night over a lady's hair and during the day beneath a gentleman's periwig or the smaller and less cumbersome peruke. Netting lace was also used as an ornamental detail in costume.

Netting needle E4468:7:592

The needle is circular in section with a slightly curving shaft, it has been made from two lengths of copper alloy wire, each with a D-shaped cross-section that were soldered together to form the shaft leaving the two terminals forked. The end of the forks have been pinched together.

L 81.1mm, W of split end 2.1mm, D 1mm



7:593 netting needle

Netting needle E4468:7:593

Copper Alloy; the needle is circular in section with a slightly curving shaft, it has been made from two lengths of copper alloy wire, each with a D-shaped cross-section that were soldered together to form the shaft leaving the two terminals forked. The end of the forks have been pinched together.

L 84mm, W of split end 2.5mm, D 1mm

Netting needle E4468:7:594

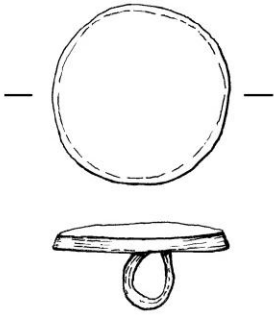
Cu alloy; the needle is circular in section with a slightly curving shaft, it has been made from two lengths of copper alloy wire, each with a D-shaped cross-section that were soldered together to form the shaft leaving the two terminals forked. The end of the forks have been pinched together. One terminal contains only one fork prong instead of two caused by an old break.

L 85mm, W of split end 3mm, D 1mm

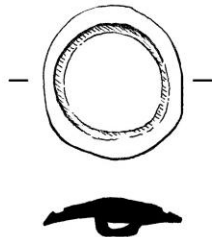


7:594 netting needle

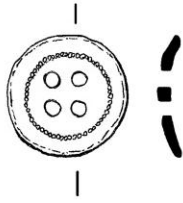
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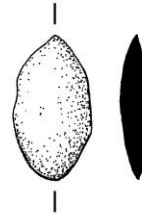
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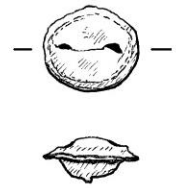
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4:176



6:8041



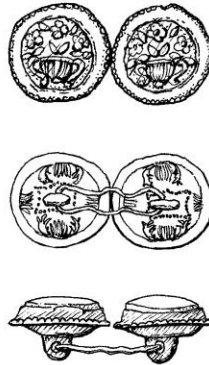
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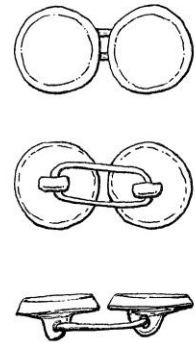
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2:189



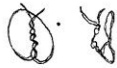
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3:165



3:166



3:167



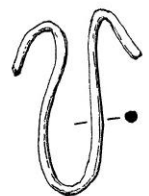
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9:403



3:174



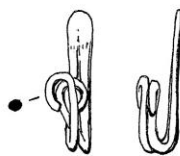
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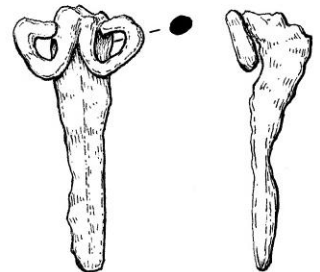
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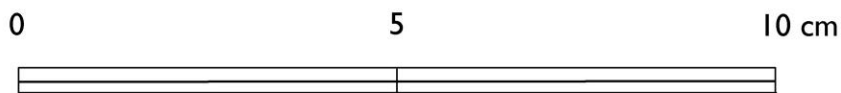
6:4699



9:407



E4468 Objects of copper alloy.





9@401 bodkin

The bodkin uncovered from Rathfarnham (E4468:9:401) was made from brass with a trefoil-shaped terminal. Bodkins were used for sewing, but often also used by women to fasten their hair, and even for protecting their virtue, as some were long and pointed and could be carried in an etui or hidden pocket.

Bodkin E4468:9:401

Gilt cu alloy; the shaft is flat with a rectangular profile tapering to a point; the tip of the bodkin is missing due to an old break. The eye is oval in shape. The terminal bears a trefoil shaped decoration that is slightly worn and incomplete. Suggested date: seventeenth to eighteenth century.

L 65.4mm, W 3.6 mm, T 1.1mm

Hooks and eyes

In the 17th and 18th century hooks and eyes were primarily used to fasten women's garments for edge-to-edge closure. Pins and clasps were also employed, whilst buttons were used to fasten men's attire. Many of these were recovered from Rathfarnham Castle.

E4468:3:174 Hook and eye dress fastener

Cu alloy wire; eye part only. Highly corroded.
L 24.5mm, W 17mm

E4468:3:175 Hook and eye dress fastener

Gilt cu alloy wire; hook part only with two loops for attaching to garment. Hook part is bent to one side. Some surface corrosion evident.
L 11.5mm, W 8mm

E4468:3:176 Hook and eye dress fastener

Gilt cu alloy wire; hook part only, with two loops for attaching to garment. Hook part is bent to one side, loops overlapping slightly. Some surface corrosion evident.
L 11.2mm, W 7.5mm

E4468:3:177 Hook and eye dress fastener

Gilt cu alloy wire; hook part only, with two loops for attaching to garment. Hook part is bent to one side, loops overlapping slightly. Some surface corrosion evident.
L 11.7mm, W 6.8mm

E4468:6:4698 Hook and eye dress fastener

Gilt cu alloy wire; hook part only, with two loops for attaching to garment. Complete but deformed, hooks overlapping.
L 20mm, W 6.1mm

E4468:7:597 Hook and eye dress fastener

Cu alloy wire; eye part only, with two loops for attaching. Broken into four fragments. Assembled size: L 11.7mm, W 11mm

E4468:7:595 Hook and eye dress fastener

Copper alloy or Iron? Hook part only with two loops for attaching. Shaft of hook twisted and highly corroded.
L 31.2mm, W 19.2mm



Hook and eye dress fastener

Bodkin

Today, a bodkin is used as a needlework tool for threading drawstrings. In the past they were often made of elaborate materials including gold, silver and bone. Some bodkins have inscriptions of virtue engraved onto their shafts.

E4468:7:596 Hook and eye dress fastener

Brass wire dress fastener. Shaped like a figure of eight, would have been used with some form of a hook to secure clothing.
L 11mm, D 5.8mm

E4468:9:402 Hook and eye dress fastener

Cu alloy gilded wire; hook part only. Two loops for attaching. Good condition.
L 11.5mm, W 10mm

E4468:9:403 Hook and eye dress fastener

Cu alloy wire; eye part only. Corrosion evident.
L 11.6mm, W 16.1mm

E4468:9:404 Hook and eye dress fastener

Cu alloy wire; hook part only. Originally had two loops for attaching: left one is missing from an old break. Shaft or hook is long, so possibly used for fastening a doublet? Suggested date: seventeenth century.
L 40mm, W 11.8mm

E4468:9:405 Hook and eye dress fastener

Cu Alloy wire? Hook part only; two loops for attaching. Shaft is truncated.
L 22m, W 18.2mm

E4468:9:406 Hook and eye dress fastener

Cu Alloy wire? Broken fragment of hook shaft only remaining.
L 36mm W 6mm

E4468:9:407 Hook and eye dress fastener

Cu alloy wire? Hook part only; two loops for attaching. Highly corroded.
L 36mm, W 18mm

E4468:9:3513 Hook and eye dress fastener

Cu alloy wire? Hook part only; two loops for attaching. Twisted from its original shape. L 34.5mm, W 16.2mm

E4468:7:3083 Hook and eye dress fastener

Thick cu alloy wire twisted into shape. One looped eye and part of hook. Ferrous adhesions. X-rayed (No. 2831).
L 15mm W 15mm

E4468:7:3084 Hook and eye dress fastener

Thick cu alloy wire twisted into shape. One looped eye and part of hook. Ferrous adhesions. X-rayed (No. 2831).
L 15mm W 15mm

Brass buttons

In the seventeenth and eighteenth centuries buttons were primarily worn by men (White, 2005). Buttons had the dual purpose of being both functional and decorative and were a popular form of embellishment on men's clothing. Women's clothes were fastened with lacing, hooks and eyes (for edge to edge closure) and, most commonly, pins.

In 1660 Charles II introduced a new set of basic garments for men, which continued in use

right into the late eighteenth century. This consisted of a long waistcoat, long skirted coat and narrow tight fitting breeches. The waistcoat was fastened with numerous buttons down the front, the coat, though rarely closed, was embellished from neck to hem by a row of buttons and buttonholes. Breeches were tight fitting and closed at the knee with buttons, a tie or a strap and buckle. They were fastened at the waist with a fall, a central flap or were buttoned or tightened at the back with a strap and buckle. Buttons were also worn on cloaks, sleeves and handkerchiefs.

Two types of metal buttons were found from the excavation: cast and composite. 17th century buttons were not pierced; instead they had an integral shank on the back (shaped like a loop) with a single attachment hole. Metal buttons were usually cast, or in the case of composite flat buttons (which date to the 17th century and onwards), punched from a sheet with a loop soldered on to the back. Copper alloy, brass, gilt and pewter buttons were common. Buttons made from more precious materials, like gold and silver or precious stones, were worn by the higher echelons of society.

Eight brass and copper alloy buttons were recovered at Rathfarnham, probably from a man's attire. The different styles included flat disc sew-through buttons, globular shaped hollow head buttons with integral shafts and bell buttons.

E4468:3:164 Button

Brass button, circular in form; flat-faced with plano-concave back. Manufactured from a punched sheet. Soldered loop (H 9mm); its shank is square in section. Suggested date: late seventeenth-early eighteenth century.
D 23.2mm, T 2.1mm

E4468:4:176 Oval button

Cu alloy; oval shaped, domed in section. Highly corroded, shaft missing.
L 19mm, W 10mm, T 1mm

E4468:6:8041 Bell button

Cu alloy or Brass? Gold toned, originally had a globular shaped hollow head with slit cut into front face. Cast in two halves; once had integral loop at back, which is now missing due to an old break. Could have been a small bell button, or miniature crochal bell or both? However, it is difficult to know if there is a pea inside as it is now flattened. Possibly once adorned the same garment as E4468:7:529? D 12mm.

E4468:7:529 Bell button

Cu alloy? Brass? Now blackened. Originally had a globular shaped hollow head with slit cut into front face. Cast in two halves with integral flattened loop (original H 4mm) at back. Could have been a small bell button, or miniature crotal bell. However, it is difficult to know if there is a pea inside as it is now flattened. Possibly once adorned the same garment as E4468:6:8041? Suggested date: seventeenth-eighteenth century. D 12.7mm.

E4468:6:4669 Ball button

Cu alloy? Brass? Globular shaped hollow head with integral loop (H 5mm) at back; cast in two halves. Corroded. May have been used to fasten a waistcoat. Suggested date: seventeenth century. D 11.5mm.

E4468:9:323 Ball button

Brass; globular shaped hollow head with integral loop (now bent, original H 5mm) at back; cast in three pieces. Line running across centre of back half indicates that the back was cast in two pieces before it was soldered to front. Two holes from mould on either side of loop at back. Suggested date: seventeenth century. D 19mm, T 15mm.

E4468:6:4633 Button

Cu alloy/brass? Cast sew through button. Front face concave in section; four central holes in square formation, encircled by a line of beading. D 16mm.

E4468:6:4634 Button

Cu alloy or pewter? Cast button; flat disc head, now distorted. Front face decorated with a circular line (W 1mm) running roughly 2mm inside edge of button. Loop appears to be integral. Line from mould runs vertically down the centre of the back, letter "H" engraved in centre left of loop; presumably there was originally another initial on the other side of loop which cannot be deciphered now due to corrosion. D 19mm

E4468:6:4635 Button

Cu alloy/ brass? Undecorated flat single-disc sheet head button. Loop was soldered on, now missing. Suggested date: late seventeenth- eighteenth century. D 16mm, T 1mm

Twisted loops

Fifty brass twisted wire loops were uncovered. These tiny and elusive artefacts have been discovered on a handful of post-medieval site in Britain. Twisted loops were

common in the 16th century and would appear to have more than one function.

Some from the 61-64 High Street excavations in Southampton (Watson cited in Egan 1998) were covered by stitching and sewn into the face of a piece of textile which is thought to be a purse, and may have been used as a type of re-enforcement against cut-purse thieves. 'Purse rings' are listed amongst London imports in 1567/8 (Dietz 1972) and 'Pouch rings' among imports in 1480-1 (Cobb 1990). A series of twisted loops were found along the arms of clothed burials in Norwich, where they have been interpreted as fasteners (Margeson 1993, 20). More loops found at the throat of a silk relic purse or bag that held a textile from the tomb of Saint Cuthbert in Durham Cathedral and is thought to date from when the body was reburied in 1542.

Twisted loops E4468:2:190-196, E4468:2:634, E4468:3:165-167, E4468:3:1310-1311 E4468:6:4643-4644, E4468:6:4780, E4468:7:532-557, E4468:9:329-330, E4468:9:3513-3514

Cu alloy. 50 twisted wire loops.
D 7-6mm

Twisted loops



Buckles & lace tags (John Nicholl)

Buckles began to replace laces for closing shoes in the 1660s and the changes in latchet design were in response to the increasing popularity of larger, wider and more ornate buckles as the century progressed (Swann 1982). This transition is evident in the assembly with both buckles and lace tags represented. Significantly, there are more lace tags, however as they were also used for the ends of laces and drawstrings on clothing the increased number should not be taken to represent a larger quantity of lace-tied shoes. Similarly, small buckles were also used for garters at the knee and some of the Rathfarnham finds might have had such a use (Thursfield 2001, Swann 1982, Goubitz 2001, Wilson 1972, Saguto 2009). Allied to these changes in the manufacturing process was a growing awareness of the use of footwear as items of fashion and a means of expressing identities and allegiances. Such fashion trends tended to be set by the reigning Monarch and the Court and Dublin took its lead from London and Paris.

The shoes recovered from Rathfarnham Castle span the reigns of five English monarchs, James I 1607-1625, Charles I 1625-1649, Charles II 1660-1685, James II 1685-1688 and William III 1689-1702 and one French monarch, Louis XIV 1643-1715. Some of these shoes are similar to footwear portrayed in Royal Portraits of the Monarchs painted during their lifetimes. They are all the same basic type with upper assemblies comprising vamp, quarters, welt and latchets secured with laces or buckles and lower assemblies of soles and leather or wooden heels. This type of shoe was classified as a Tie-Lace Fastening on Latchet Shoe Type 130 or Detachable Buckle on Latchet Shoe Type 135 by Goubitz (2001) and has parallels throughout Europe and beyond at this time. Following the introduction of heels it had become the standard design for making shoes by about 1630 and is described in detail in Saguto's (2009) translation of Garsault's text *L'Art du Cordonnier* published in 1769

by the *L'Academie Royale des Sciences* in Paris. This text was part of the Academie's project to document all of the 'ancient arts' of manufacture which had developed in the preceding century.

Lace Tags

There were a total of 49 complete or partial lace tags recovered from Rathfarnham Castle. At this period, shoe laces were just that, lengths of narrow lace fabric with each end enclosed in a metal or wire restraint to allow the lace be inserted through holes in the latchets (Swann 1982, Wilson 1974). The tags in the assemblage were all made in the same manner although there was some variety in the finished article. They can be divided into 4 types. The basic method of manufacture for all 4 types involved cutting a small rectangle of thin foil or metal, placing the lace on top, folding the foil sides to crimp the lace before rolling it into a tight tube, sometimes with a slight taper towards the point. These tubes are consistently 2mm in diameter with some tapering to 1mm at the tip. Three larger but similarly made lace tags were recovered from the Courthouse Lane excavations in Galway (Scully, 2004) and from 17th century deposits in the St. Peter's Church excavations in Waterford (Scully, 1992).

Lace tags





Lace tags on clothing from contemporary portrait

Lace tag E4468:6:4631, which is not tapered, still retains a stub of fabric at one end while the rest of the examples are empty tubes. 78% of the lace tags were either made from a thin metal core which was then gilded for effect or else were formed from a copper alloy. The remaining 22% (ten) tags were made from gold foil, and these are described in detail in the gold specialist report and in the shoe specialist report.

Lace Tag Type 1, of which there are 19 examples, range from 20mm-34mm in length and 2mm in diameter, tapering to a 1mm point. E4468:3:163, E4468:6:4628, 4631, E4468:9:287, 288, 291, 293, 294, 296, 298, 299, 300, 301, 303, 304, 309, 311, 316, 320.

Lace Tag Type 2, of which there are 10 examples, range 20mm-35mm in length and 2mm in diameter without any tapering. E4468:4:177, E4468:6:4629, E4468:9:289, 290, 292, 295, 297, 302, 305, 308.

Lace Tag Type 3, of which there are 6 examples, range in length from 20mm-25mm in length and 2mm in diameter, tapering to 1mm at the tip which is closed. They have also been decorated with a pair of parallel hoops inscribed at either end and can be considered as coming from matching laces. E4468:6:4632, E4468:9:286, 307, 310, 316 and 321.

Lace Tag Type 4, of which there are 2 examples measure 18mm in length, tapering to 1mm at the tip and are decorated with a pattern of small diamond shapes. E4468:6:4630, E4468:9:312

There are 9 fragmentary examples which are too damaged to assign to any type. E4468:2:187,188, E4468:9:306, 313, 314, 315, 317, 318, 31. One possible lace tag (E4468:6:4700) was not examined by John Nicholl.

Lace Tag E4468:2:187

of thin copper-alloy sheet rolled into a tube. Surface tarnished.

L: 22mm x 2mm

Lace Tag E4468:2:188

in two parts, of thin copper-alloy sheet rolled into a tube and tapering slightly. Surface tarnished L: 22 x 2mm
Lace Tag E4468:4:177 of very tarnished, rolled and flattened, thin copper-alloy sheet.
L: 28mm x 3mm no tapering.

Lace Tag E4468:6:4628

of thin copper-alloy sheet folded along both edges and rolled into a tapering tube. Very tarnished. L37mm x 2mm – 1mm

Lace Tag E4468:6:4629

of very thin and tarnished copper-alloy sheet rolled into a tube with no tapering L: 30mm x 2mm.

Lace Tag E4468:6:4631

of thin, tarnished, copper-alloy sheet folded along both edges and rolled into a tapering tube with fragments of textile in-situ. L: 30mm x 2mm – 1mm.

Lace Tag E4468:6:4632

of thin copper-alloy sheet folded along both edges and rolled into a tapering tube decorated with two parallel incised bands at both ends. L: 25mm x 2mm – 1mm.

Lace Tag E4468:9:286

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Two incised parallel bands at either end L: 27mm W: 2mm – 1mm

Lace Tag E4468:9:287

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. L: 26mm W: 2mm – 1mm

Lace Tag E4468:9:288

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 33mm W: 2mm – 1mm

Lace Tag E4468:9:289

rolled tube of thin, gilded, copper-alloy sheet. Some tarnish L: 37mm W: 2mm

Lace Tag E4468:9:290

rolled tube of thin, gilded, copper-alloy sheet. Very tarnished L: 23mm W: 2mm

Lace Tag E4468:9:292

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 30mm W: 2mm – 1mm

Lace Tag E4468:9:293

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Very tarnished and bent slightly. L: 29mm W: 2mm – 1mm

Lace Tag E4468:9:294

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 28mm W: 2mm – 1mm

Lace Tag E4468:9:295

rolled tube of copper-alloy sheet. Very tarnished. L: 25mm W: 2mm

Lace Tag E4468:9:297

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish and point missing. L: 17mm W: 2mm

Lace Tag E4468:9:298

incomplete tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 21mm W: 2mm-1mm

Lace Tag E4468:9:299

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 23mm W: 2mm – 1mm

Lace Tag E4468:9:302

incomplete tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 21mm W: 2mm

Lace Tag E4468:9:304

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 23mm W: 2mm-1mm

Lace Tag E4468:9:305

of gilded copper-alloy foil, edges folded and rolled into a tube, very tarnished. L: 27mm W: 3mm

Lace Tag E4468:9:307

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Two incised parallel bands at either end L: 27mm W: 2mm

Lace Tag E4468:9:308

flattened tube of thin copper-alloy sheet. L: 27mm W: 2mm

Lace Tag E4468:9:310

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 20mm W: 2mm-1mm

Lace Tag E4468:9:313

incomplete and in poor condition, gilded copper-alloy. L: 17mm W: 2mm

Lace Tag E4468:9:314

flattened tube of gilded copper-alloy foil L: 20mm W: 4mm

Lace Tag E4468:9:315

incomplete tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Some tarnish L: 20mm W: 2 - 1mm

Lace Tag E4468:9:316

of gilded copper-alloy foil, edges folded and rolled into a tube. No tapering L: 23mm W 2mm

Lace Tag E4468:9:317

of gilded copper-alloy foil, edges folded and rolled into a tube. No tapering L: 16mm W: 2mm

Lace Tag E4468:9:319

very fragile, copper-alloy tube, edges folded and rolled, tarnished. L: 25mm W: 3mm

Lace Tag E4468:9:320

of gilded copper-alloy foil, edges folded and rolled into a tube tapers to 1mm L: 25mm W: 3mm – 1mm

Lace Tag E4468:9:321

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Two incised parallel bands at either end L: 27mm W: 2mm

Lace Tag E4468:9:3516

tapering tube of thin, gilded, copper-alloy metal sheet, folded at edges and rolled. Two incised parallel bands at either end L: 27mm W: 2mm

Possible Lace Tag E4468:6:4700

Hollow tube which tapers to one end. Covered in small fragments of reflective material. Unknown material. L 18mm Diam. 2–3mm.

Lace Tag E4468:7:3111

Copper-alloy hollow tube, edges folded and rolled, flattened, tarnished. L: 25mm W: 3.3mm

Lace Tag E4468:6:8794

Copper-alloy hollow tube, edges folded and rolled, flattened, tarnished. Tapers. Silvery colour. L: 27.79mm W: 3mm

Lace Tag E4468: 6:8795

Copper-alloy hollow tube, edges folded and rolled, circular in section, tarnished. L: 35.4mm W: 2.23mm

Lace Tag E4468: 6:8796

Copper-alloy hollow tube, edges folded and rolled, circular in section, tarnished with iron corrosion adhesions. L: 26.38mm W: 2.68mm

Buckles

One complete and six incomplete buckles were adjuster recovered. All are typical of 17th and early 18th century Buckle design (Goubitz 2001). During this period, buckles were made from a variety of metals including silver and gold, but the majority, such as the Rathfarnham examples, were of copper-alloy (Whitehead, 2003, Ribeiro, 1984). From about 1660 buckles began to replace laces for closing shoes and were often accompanied by smaller, matching buckles which were used for securing garters at

the knee and are portrayed in paintings of the period (Swann, 1982).

E4468:7:598 and E4468:2:197 are similar in size and design and were probably used for attaching knee garters. E4468:7:598 is the more complete of the two with its anchor chape and spindle in-situ but missing its pin. E4468:6:4663 is larger and heavily encrusted with soil. The pin is in-situ with no evidence of an anchor chape which suggests it was used as a belt buckle. E4468:7:565 is the side-arm of a copper-alloy buckle and is highly decorated with a shell and foliage pattern, typical of late 17th century buckle ornamentation (Whitehead, 2003).

Buckle E4468:2:197

cast copper-alloy buckle with concave sides drilled for a separate spindle with a moulded ribbon-bow over each spindle hole. Pin-rest recessed on each loop with decorative lines engraved on both sides of rests. Chape, spindle and pin are missing. L: 25 x 14mm. Early 17th century.

Buckle E4468:2:198

a flat, A-shaped buckle or strap mount of thin copper alloy metal. Opposing arms pierced with rivet/nail holes and top surface decorated with a raised twisted cord motif.

L: 45mm W: 40mm TK: 1mm

Buckle E4468:6:4663

cast copper-alloy double-loop buckle with slightly concave sides. Pin and spindle in-situ but chape missing. Any detail is obscured by encrustation. L: 45mm x 25mm.

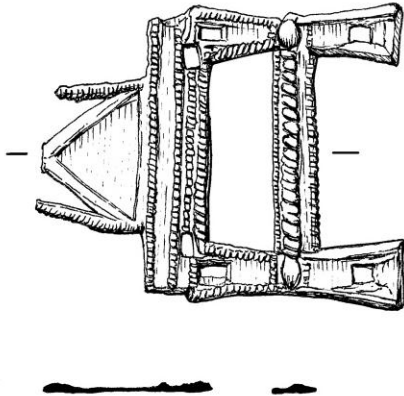
Buckle E4468:6:4416

broken cast buckle. Some decoration apparent on the frame, with a rounded shape near the hinge of the bar and incised lines on the frame plate. Based on the loca-

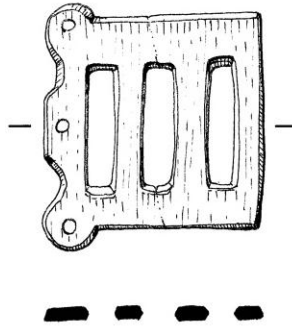
Buckles, from left 2:197, 2:198, 6:4416, 7:564-5, 7:566, 7:598



2:197



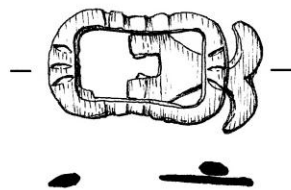
7:564-565



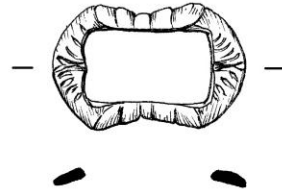
7:566



7:598



2:198



E4468 Objects of copper alloy.





Buckle 2:197

tion of the hole for the bar, the buckle would have been 48mm in length. A thin layer of corrosion is apparent on the object. L: 37mm, W: 24mm, TK 3-5mm, 5g weight.

Buckle E4468:7:566

arc-shaped fragment of copper-alloy shoe buckle decorated with raised floral motifs. L: 35mm W: 10mm

Buckle E4468:7:598

small sub-rectangular copper-alloy buckle. Slightly concave sides pierced centrally for a spindle. Anchor chape still in-situ but the pin is missing. Ribbon-bow motif moulded above each spindle hole and three engraved lines at pin rest. L: 25mm W: 14mm

Buckle E4468:9:346

section of annular buckle composed of a central metal core which has been gilded. Diameter: 17mm TK: 1mm

Fixtures and fittings

Metal ring fittings

Nineteen metal ring fittings were found at Rathfarnham, most of similar sizes; too large for a finger ring and generally of non-precious metals like Cu alloy and brass. These simple rings appear to be cast and could have performed a variety of functions from harness fittings

through to curtain rings. Similar bronze rings found in Guildford in a late 17th century context were interpreted as curtain rings (Fryer & Shelly 1997, 197). The curtain rings would not only have been used for window curtains but also to hang wall hangings and drapery from a four-poster bed, which would have made them very useful in a post-medieval household.

E4468:4:175 Ring

Copper alloy; oval in section.
T 4mm, D32mm

E4468:6:4645 Ring

Cu alloy or brass(?); ring; sub-circular in form, hexagonal in section, worn on one side of the exterior.
T 4mm, D 31.5mm

E4468:6:4646 Ring

Cu alloy or brass(?); circular in form; roughly circular in section. Broken with 9mm gap. Highly corroded.
T 4mm, D32mm

E4468:6:4649 Ring

Copper alloy ring, no measurement recorded.

E4468:6:4650 Ring

Copper alloy ring, no measurement recorded.

E4468:6:4651 Ring

Cu alloy; D-shaped in section, worn on one side.
T 1.9mm, D 24.7mm

E4468:6:4652 Ring

Cu alloy; round in section, highly corroded.
T 5mm, D 31mm

E4468:7:558 Ring

Copper alloy ring, no measurement recorded.

E4468:7:568-570 Ring

Cu alloy; circular in form and section. Highly corroded.
Broken into three parts. T 3mm, D 31.1mm

E4468:7:3077 Ring

Cu-alloy; circular exterior form, oval shaped within its circumference due to wear. Oval in section.
D 27mm, T1.7mm.

E4468:7:3078 Ring

Cu alloy; sub-circular in form; irregularly hexagonal in section. Flattened on one side with old break due to wear. Loop is flattened.
T 4.5mm, D 31.2mm.

E4468:7:3079 Ring

Cu alloy; circular in form and section. Highly corroded.
T 2mm, D 26.2mm.

E4468:7:3087

Portion of brass (?) ring, almost half complete. Metal is dark grey with a very slight greenish tinge in colour. Sub-oval in profile with a groove running along the external edge of one side. Possible curtain ring. 23mm Dia., W: 3.25mm, TK: 2.6mm; 3g weight.

E4468:9:331 Ring

Gilt copper alloy/ brass? Gold toned, sub-circular in form; D-shaped in section. Some wear and corrosion evident. Probably too light for a curtain ring.
W 2mm, T1.2mm, D 26mm.

E4468:9.332 Ring

Gilt copper alloy/ brass? Gold toned ring, circular in form; roughly D-shaped in section; in profile the loop is fairly flat.
W 3mm, T 1.8mm, D 25mm

E4468:9.333 Ring

Gilt copper alloy/ brass? Gold-toned ring; circular in form; bi-trapezoidal in section. The loop in profile is fairly flat. Excellent condition.
W 2.5mm, T 1.7mm, D 24.3mm

E4468:9.334 Ring

Copper alloy? Circular in form; bi-trapezoidal in section. Highly corroded.
W 4.1mm, T 2.1mm, D 26.9mm

E4468:9.335 Ring

Section of copper alloy? Complete ring would have been circular in form, however now only 70% of the ring survives due to an old break. Roughly bi-trapezoidal in section.
T 3mm, D 26.1mm

E4468:9.336 Ring

Copper alloy. Only 30% of the original ring left due to old break; bi-trapezoidal in section.
T 3.7mm, L 24.2mm.

Furniture or fitting hardware

Wooden chests were one of the most common types of furniture used in the post-medieval period. They were filled with all kinds of household items and personal effects. Typically they were used to store and sometimes transport clothing, bedding and linen.

Artefacts E4468:6:4664, 6:4697, 7:600, 7:603 & 7:604 are all thin sheets of copper alloy decorated with delicate relief designs. These may be designed to decorate wooden artefacts. All of them have similar ribbing along the edges and all may be from similar artefacts. 7:603 is in the shape of a shield or blank coat of arms with floral or ribbon surrounds. 7:604 appears to be the floral or ribbon surrounds from a similar object, as may 6:4664, though the latter object has a square corner. Objects 6:4697 and 7:600 are rectangular or sub-rectangular decorated plates of slightly different sizes with floral or cross-hatching patterns.

Decorative mount E4468:6:4697

Copper alloy/ brass? Cast metal mount; the back is flat and plain; the front is decorated with classical foliate scroll design, edges framed with ribbed trim. Rectangular shape, however one side is cut at a right angle, there are two broken attachments on the lower edge and one corner which show that it was originally attached to a composite decorative piece. Could be a mount from a woman's girdle or man's leather belt. Suggested date: seventeenth century.
L 37mm, W 16mm, T 1.3mm

Decorative mount E4468:7:600

Copper alloy/ brass? Rectangular shaped, cast metal mount decorated with a cross hatched design; the back is flat and plain. The edges are framed with a ribbed trim. Slightly bent. Very similar to 6:4697 and most likely would have decorated the same object.
L 32.5mm, W 13mm, T 1.5mm

Decorative mount E4468:7:604

Cast metal. Copper alloy/brass? Broken fragment of symmetrical scrolled design; this piece would have decorated an object like a woman's girdle or man's leather belt. Very similar in style to the surrounds of 7:603, and it is likely it formed part of a similar object.
W 27mm, H 20mm

Decorative Mount E4468:7:603

In the shape of a coat of arms which is blank. Cast design, now distorted and folded in two, with floral or ribbon surrounds similar to 7:604. Brass?
Original H 38mm, W 21mm

Copper-Alloy Mount E4468:6:4664

Fragment of a cast copper-alloy mount. Delicate design with ribbing along edges like 6:4697 & 7:600 & 7:604. L: 15mm x 15mm



Decorative mounts, left to right mounts 6:4697,7:603,7:604,7:600,6:4664

Decorative mount or washer E4468:6:4666 & E4468:9:340

Two fragments fitting together forming a circular flat brass disc, most likely an escutcheon (surround) or washer. Slight bevelling in internal perforation of 12mm, while width of band around hole is 10mm. Inscription on underside difficult to read except for two letters: 'BS'. Three equally spaced screw- or nail-holes (2mm diameter).

Brass mount or plate fragment E4468:9:410

Intentionally cut fragment of rim section of a plate or mount.
W 30mm, L 33.5mm, T 4.5mm .

Brass hinge E4468:7:602

Ornate brass hinge with six small holes to attaching it to a small wooden box or tea chest. Suggested date: seventeenth-century.
L 39mm, H 18.5mm

Drawer handle back plate E4468:7:530

Gilt cast brass drawer handle back plate. Domed in shape, front face decorated with circumferential bevelling; central hole (D 3mm) for handle nut. Suggested date: late seventeenth to early eighteenth-century.
D 26mm, T 1.5mm

Copper alloy lock or catch E4468:2:199

Cast mount with opening at top, possibly for a key hole, and two small holes at the two corners of its rounded base. The small nails are still intact and at the back small pieces of leather are still attached to the back of these nails. Possible mount from a leather belt or girdle, or lock or catch surround from a leather box or chest?
H 37mm, W 21mm

Staples

A number of iron staples were also noted, and are described in the iron report.

Staple E4468:6:4667

Copper alloy or brass wire staple.
W 17mm, H 7.2mm

Staple E4468:6:4668

Copper alloy or brass wire staple.
W 17mm, H 7.2mm

Upholstery tacks and studs

Upholstery studs were commonly used in post-medieval households to attach soft furnishings like textiles and leather to furniture e.g. chair seats and backs, trunks, beds and benches.

109 upholstery tacks were uncovered at Rath-farnham and appear to be made from a range of metals including copper alloy, brass and possibly iron. The heads and shafts are integrally cast. The tacks are not uniform and many of them, through use and wear, have been beaten out of shape. Even still, most of them can be roughly divided into seven different sizes. The smallest size may have been used for fixing decorative braid or 'gimp' to upholstery. The rest of the sizes are mainly studs used to decorate leather or textile-covered furniture, though panelling studs could also be functional as well as decorative (P. Boyle 2015, pers. comm.). 6:4640, a stud, is gilded.

The dimensions are as follows:



Brass tacks, arranged by size



Gilded brass tack 6:4640

Size	Diam.(head)	Lngh(shaft)	Weight	No.
XXXL	D24mm	L24mm	5g	5
XXL	D19mm	N/a	1g	1
XL	D15mm	L20mm	3g	10
L	D13mm	L13mm	2g	10
M	D11.5mm	L15mm	1g	26
S	D10mm	L12mm	>1g	8
XS	D7.4mm	L14mm	>1g	43
Unid	N/a	N/a	N/a	6

Copper alloy wire

These short lengths of copper alloy wire could have had a wide range of functions, including as fragments or attachments for jewellery or dress.

E4468:6:4653 Copper wire

Short length of copper wire. Circular in section. L135mm, D 1mm

E4468:6:4654 Copper wire

Short length of copper wire. Circular in section. L 86mm, D 1mm

E4468:6:4655 Copper wire

Short length of copper wire. Circular in section. Highly corroded. L 43mm, D 1.2mm

E4468:6:4656 Copper wire

Short length of copper wire. Circular in section. Highly corroded. L 55mm, D 1.5mm

E4468:6:4657 Copper wire

Short length of copper wire. Circular in section. L 60mm, D 1mm

E4468:6:4658 Copper wire

Short length of copper wire. Circular in section. Highly corroded. L 96mm, D 0.4mm

E4468:6:4659 Copper wire

Length of fine brass or copper wire. Circular in section. Highly corroded. L 170mm, D 0.4mm

E4468:6:4660 Copper wire

Length of fine brass or copper wire. Circular in section. Highly corroded. L 280mm, D 0.5mm

E4468:6:4661 Copper or brass wire

Length of brass or copper wire. Circular in section. L 110mm, D 0.5mm

E4468:6:4662 Copper or brass wire

Length of brass or copper wire. Circular in section. L 57mm, D 0.8mm

E4468:7:560 Copper or brass wire

Length of copper or brass wire. Circular in section. Twisted to form a closed circle (W 40mm), possibly used to fasten a bottle or jar with the aid of a cork stopper or muslin cloth. Gold toned, good condition. (Unravalled) L 194mm, D 1mm

E4468:7:561 Copper wire

Short length of copper wire. Circular in section. L110mm, D 1mm

E4468:7:562 Brass wire

Short length of gold toned brass wire, round in section. Corroded at one end.

L 130mm, D1.5mm

E4468:7:563 Brass wire

Short length of gold toned brass wire, round in section.
L 130mm, D1.5mm

E4468:9:341 Copper wire

Short length of copper wire. Circular in section. Highly corroded.
L57mm, D 1.5mm

E4468:9:342 Copper wire

Short length of copper wire. Circular in section. Highly corroded.
L37mm, D 4mm

E4468:9:343 Copper wire

Short length of copper wire. Circular in section. Highly corroded.
L95mm, D 1.4mm

E4468:9:344 Copper wire

Short length of copper wire. Circular in section. Highly corroded.
L60mm, D 2mm

E4468:3:183 Copper wire

Short length of copper wire. Circular in section.

L 59mm

E4468:3:184 Copper wire

Short length of copper wire. Circular in section.
L 69mm

Miscellaneous and unidentified

Hinge E4468:9:408

Copper alloy and iron decorative hinge or bracket L 55mm. Two curved short arms L 10mm and L 5mm on one side only. Originally cast in a symmetrical design, however it is now missing some design details from one side, making it asymmetrical. Possibly a clock hand or decorative mount or fixture, hinge or bracket? Highly corroded.
L 69mm, W18mm, T 3.5mm
Examined by Patrick NMI 09/12/14.
X-Ray 2826

Unidentified objects E4468:9:337 & 9:338

Copper alloy/brass? Cut from a sheet into roughly square and rectangular shapes. A central hole has been drilled into both and they fit together. They appear to be part of a composite piece; a small screw would have held them

Hunting snare? 6:4639



together and attached them to something else.
E4468:9:337 W 7.3mm, L 6mm, T 1mm, (central hole) D 3mm
E4468:9:338 W10cm, L 9.4mm, T 1.5mm, (central hole) D 2.5mm

Copper alloy waste E4468:7:601

Waste from smelting? Or melted lump of copper alloy artefact.
W31mm, T 0.03mm

Ring (fitting) E4468:7:606

Gilded copper alloy or brass? Circular strip of gold toned metal. Not a finger ring. Possible chape? There is a V-shaped gap in the ring and three small screw holes spaced 16mm apart to attach it to something. The screw holes invert inwards indicating that an object was held inside the ring. The base turns slightly inwards.
D 17mm, H 6mm

Hunting Snare E4468:6:4639

Complete coil of copper alloy wire arranged in noose, with one curled terminal, possibly used as a hunting snare.
D 140mm, T 0.5mm

Brass screw? decorative piece E4468:9:409

Section of undulating brass or gilded copper alloy screw. Possibly from a fixture, piece of jewellery or costume accessory embellishment.
L 20.5mm, W 7mm

Copper alloy or brass wire object E4468:9:415

Gold tone wire curled into a small loop on one end. Sewing?
L 19mm, T 1mm

Copper alloy or brass wire object E4468:9:422

Short and straight length of wire, curled into a loop at one end. Sewing?
L 73mm, D1.2

Copper alloy or brass object E4468:9:413

Gold toned metal tube fragment bent into an L-shape.
L 46.2mm, T 3mm

Copper alloy or brass object E4468:9:414

Gold toned metal tube fragment bend into a curve.
L 22mm, T 1.1mm

Copper alloy or brass object E4468:9:416

Gold toned flat metal strip that has been bent into a squared U-shape. Staple?
L 18mm, W 7mm, T 1mm

Metal ring E4468:7:607

Copper alloy? Very delicate strip of metal curved into a ring shape with a gap on one side. Slightly flattened. Highly corroded.
D 11mm

Brass ink bottle seal E4468:9:180

Brand "Drapers Ink Dichroic HND". Sold in Dublin and Cork in the late nineteenth century.
D 16mm

Unidentified E4468:7:3112

Unidentified object, resembles a heavily corroded brass pin or similar object with rounded head and blunt (broken?) point. May not be copper alloy.
L 40mm, T 1-3mm



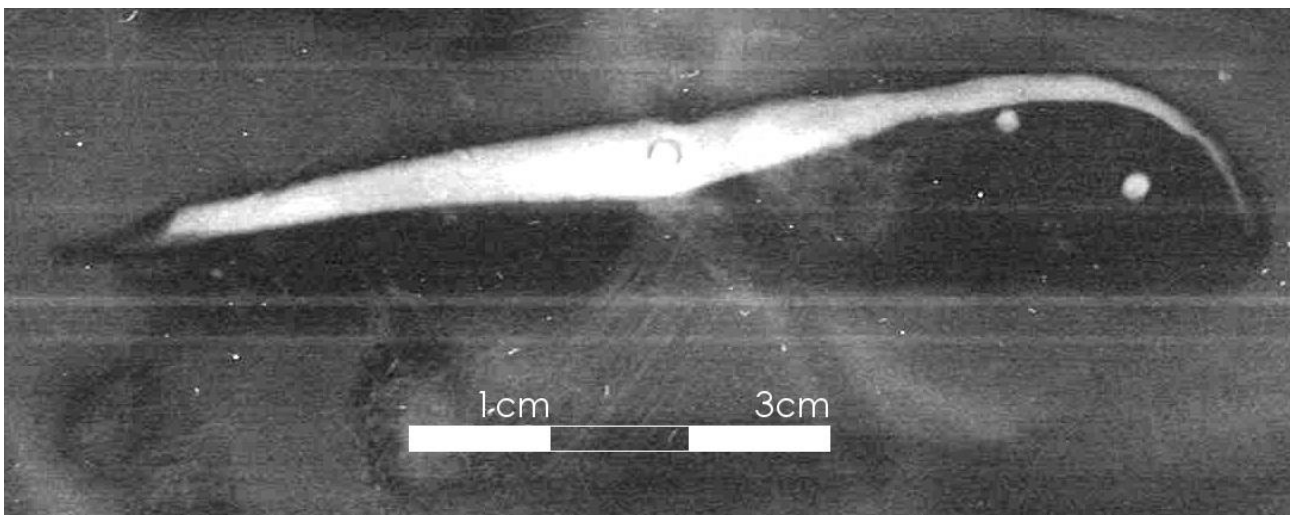
Ink bottle seal 9:180

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Gilded copper-alloy dagger chape 6:4696, photograph by Damian Shiels



CX Ray of cutthroat razorblade 6:5559

Lead

Steven McGlade, with assistance from Alva MacGowan and Damian Shiels

Introduction

Lead was used for a variety of functions in the past, including military, weights, and architectural.

Richard Neve records that, at the time of his recording in the early 18th century, lead was chiefly used for covering gutters, for pipes and for glass, and notes that covering with lead was 'the most magnificent', with it generally being most used for the covering of churches, princes palaces, castles, and great men's houses' (Neve 1726, 183). The malleability of lead made it a useful material for lining rooves and sealing around chimneys, and it was particularly important in creating windows prior to the introduction of sash windows at the start of the 18th century.

The lead assemblage from Rathfarnham includes weights, projectiles, lead window comes, lead wire, fragments of lead sheet, lead weights, lead rods, possible architectural or furniture fixings, ad-hoc objects and waste lead.

Thanks to Barry Knight for his correspondence on dated lead window comes. Thanks also to Nessa Roche for discussions on leaded windows and the casement window previously found at Rathfarnham.

The lead gunshot and weights are described in more detail in the Report on the Military Artefacts from Rathfarnham Castle, Co. Dublin (2015) by Damian Sheils of Rubicon Heritage.

Window lead

One hundred and sixty six pieces of lead window came were retrieved from the washpit in the southwest flanker at Rathfarnham Castle. The lead window comes were all turned lead, in that they were created by drawing a rod of lead

through a lead mill, which produced lengths of H-shaped window comes into which window glass could be inserted. The wheels of lead mills were cut with small grooves at regular intervals, which had the dual purpose of assisting in the lead being drawn through the mill, and adding some grip for the glass. These grooves left reeding or small ridges along the heart of the came where the lead was drawn through the mill by the wheels. Lead mills were invented sometime in the late 15th century, however the first depiction of one was in Joost Amman's 'Ständebuch' (The Book of Trades) of 1568 (Strobl 2002).

For the purposes of description and in an effort to subdivide the assemblage these were grouped into four types based on dimensions, reeding and form. While it is possible that four separate lead mills were used to create the window comes at Rathfarnham, it should be noted that it is possible that Type 2 and Type 4 are similar, with the differentiation being the spacing of the reeding. If the spacing of the grooves on the wheel of the lead mill were not regular this could explain the variation. There does appear to be distinct differences between the Type 2/4 and Type 3 however, and they possibly represent different phases of fenestration within the castle. The earliest would appear to be Type 1 as the majority of this type has been stripped off, possibly during a phase of window repair. These stripped off lengths of Type 1 window come appear then to have been reused in some cases, possibly as lead wire for fastening the glazed lights to the glazing bars. The other three types do not appear to have been reused in this way.

Type 1 lead came

Rounded or D-shaped leaves with 8 reeds per 10mm. No full came of this type was identified, however a number of strips of halved came were identified. In some cases these strips appear to have been reused for other purposes. Occasionally sections of these strips were found



Type 3 Lead came with window glass 6:4378

tied or twisted together. This could have occurred during the re-glazing process while the lead was being stripped away, with the loose end being tied together until the glass quarrels could be removed. The leaves of this type were 4.75mm in width and 1.6mm in thickness, with the central heart being 1mm in thickness and the channels being 1.87mm in depth. Forty five examples of Type 1 lead came were identified in the assemblage.

Type 2 lead came

Relatively straight-sided leaves with 4-5 reeds per 10mm. The leaves were 8mm in width and 0.5mm in thickness with a slight rib at the edge, and the central heart was 0.5mm in thickness. The channel was 2mm in width and 3.75mm in depth. Nineteen examples of Type 2 lead came were identified in the assemblage.

Type 3 lead came

Relatively straight-sided leaves with 6 low reeds per 10mm. The leaves were 6-7mm in width and

0.5mm in thickness with a slight rib at the edge, and the central heart was 1mm in thickness. The channel was 2mm in width and 2.5mm in depth. Fifteen examples of Type 3 lead came were identified in the assemblage.

Type 4 lead came

Relatively straight-sided leaves with 9-10 reeds per 10mm. The leaves were 7-8mm in width and 0.5mm in thickness with a slight rib and slight striations on the face of the leaves also. The central heart was 0.6mm in thickness. The channel was 2.2mm in width and 3.7mm in depth. Similar to Type 2 but substantially more reeds evident. Seventeen examples of Type 4 lead came were identified in the assemblage.

A large variety of window lead designs and arrangements were possible by cutting and soldering the lead comes, with a book by Walter Gidde in 1615 illustrating 103 separate window compositions (Hume 2005, 110). As a rule however, purely functional windows were lim-

ited to squares, rectangles, and most often diamond shapes (ibid.). Neve gives measurements for turned lead or lead comes in London in the early 18th century, with comes coming in three sizes: 7/16" (11.25mm) for large squares, 5/16" (8mm) for quarries, and 3/16" (5mm) for fret-work or crocket-work (Neve 1726, 189). He notes that it would take approximately 50lb (22.68kg) of turned lead for 100 foot of quarry glazing (ibid, 188).

The dimensions of the window lead from Rathfarnham is closely similar to those for quarries given by Neve, particularly Types 2 and 4. The weight of lead comes retrieved at Rathfarnham was 178g of Type 1, 114g of Type 2, 114g of Type 3, 103g of Type 4 and 271g of unidentified lead comes. This is vastly insufficient to have glazed the entire castle, even allowing for all the lead to have been in use at once, equating to approximately 3.4 square foot of glazing. This suggests that the assemblage does not represent the dumping of window lead for the entire castle during a phase of re-fenestration, as much more lead would be expected from this. It may represent the repair and replacement of a number of glazing panels over time prior to the insertion of the sash windows in the early 18th century. The lead may have been retained for later reuse in repair works, or to be melted down for shot.

The developments in lead came manufacture, which aimed at producing the required H-shaped form and reducing the amount of lead required suggest that Type 1 with its rounded D-shaped leaves is the earliest type in the assemblage. This is further suggested by the lack of complete sections of Type 1 came, presumably because Type 1 relates to the earliest windows in the castle, which were subsequently re-lead at a later date. Traditionally there was approximately one hundred years life expectancy for 19th century lead comes (Vogel & Achilles 2007, 8), possibly due to the reduction of lead content within the comes themselves leading to failure. At present in Ireland re-leading is seen as a last resort, with other conservation methods recommended first as the lead is seen as an integral component of the overall window (Lawrence 2004, 2). It can be assumed that a more pragmatic approach was taken in the past with new window lead being

used as and when required, either in the replacement of one glazed panel or window, or in a full phase of re-glazing.

The window lead from Rathfarnham, where two or more connected comes were identified, was predominantly from quarry glazing. Only one example (E4468:6:4435) is likely to come from a rectangular paned window, possibly similar to the late 17th century casement window in the northern wall of the tower. This mirrors the findings from the analysis of the flat glass, which is predominantly from quarry glazing. The fact that the dated lead comes from Rathfarnham were laid out in a diamond pattern suggests that the use of quarry glazing at Rathfarnham persisted until at least 1692, despite the insertion of some casement windows prior to this. It is likely that this remained the case until the insertion of sash windows in the early 18th century.

The dated window lead

A dated window lead from a trash pit excavated beside a 17th century house along the James River in Jamestown, Virginia produced a window lead which showed the initials EW and RA accompanied by the date 1693 (Deetz 1995, 108). A photo of this lead (available at www.historicjamestowne.org/selected-artifacts/window-lead/) shows that, as with the Rathfarnham lead, there are small flowers with five petals separating the initials and the date, suggesting that these lead comes may have had the same manufacturer. Dated lead comes are known from as early as 1625 (from Martin's Hundred, Virginia) while one of the latest known examples dates to 1733 (from the great Elizabethan mansion of Kirby Hall, Northamptonshire), and is evidence that some older houses were having new leaded windows installed instead of replacing them with sashes (Hume 2005, 110).

Another came marked 'E·W·1701·' is known from Scornton on the South River in Maryland, which was found along with eight other marked lead comes with a date range from 1676-1701 (Luckenback & Gibb 1994, 26).

While it has been noted that it is difficult to say with certainty that the marks on milled lead relate to the lead manufacturer, the mill itself or



Dated lead comes stamped '*EW*1692* 7:452

the glazier, the fact that the same initials or names are turning up in Britain, Ireland and the United States would suggest that, at least in some instances the names or initials relate to the lead manufacturer. In the case of EW, possibly Edward White of London, where examples are known from a number of closely following

years (E.W. 1689 T.T. from Audley End, Essex; *EW*1692* from Rathfarnham; and *EW*1693*RA* from Jamestown), it is likely that the wheel of the mill was checked and changed regularly. The marking 'EW 1712' is recorded from a lead came at Newstead, Kent, while a lead came vice from London, now in

Connecticut, had decorated panels, one of which is inscribed 'made in London by Edward White, July ye 26 17 E W 17' (Egan, Hanna & Knight 1986, 307). The use of the initials EW appears to span a period of at least 28 years and may relate to a single manufacturer, Edward White of London.

A large variety of window lead designs and arrangements were possible by cutting and soldering the lead comes, with book by Walter Gidde in 1615 illustrating 103 separate window compositions (Hume 2005, 110). As a rule however, purely functional windows were limited to squares, rectangles, and most often diamond shapes (*ibid.*).

The inclusion of initials and dates on lead comes is a somewhat unusual action, given that the initials and dates are located on the internal heart of the came and would have been hidden from view once the glass was in place. There is a suggestion that the purpose of the marks was as a form of quality control, possibly having something to do with problems of substandard comes and manufacturer liability (Deetz 1995, 108).

There is some suggestion that the lack of embossed names on window leads could indicate an origin outside of the jurisdictions of the English guilds (Luckenback & Gibb 1994, 24).

Other Irish examples

Window lead of medieval date has been retrieved from a number of excavations in Ireland, such as at Cathedral Hill, Downpatrick and the Dominican Priory, Mullingar. The excavations at Trim Castle uncovered a number of pieces dating from the late 13th century to the 17th century (Hayden 2010, 326). Post-medieval examples are also known from Parke's Castle, Co. Leitrim, Carrickfergus, Co. Antrim, Newtown Stewart Castle, Co. Tyrone, Tully Castle, Co. Fermanagh and Castledonovan, Co. Cork. Five lead window comes were retrieved during the excavations at Smithfield in 2000 (Scully 2006, 800). A number of lead window comes were retrieved from St. Canice's Cathedral in Kilkenny on two separate occasions, once in the 19th century (Graves 1850, 211) and again in 2013 (Ó Drisceoil & Cahill 2013, 46). The lead retrieved in the 19th century excavations was

believed to come from the 14th century windows erected by Richard Ledrede, which were destroyed by Cromwell's forces in 1650 (Flynn 2015), and were described by Graves as being more robust and of better quality than the lead comes in use in the 19th century (Graves 1850, 214). The more recent works at the cathedral recovered four strips of turned window lead (Kenny 2013, 198), possibly suggesting a phase of re-fenestration or re-leading after the late 15th century.

There are no other dated window lead comes from an archaeological context in Ireland, to my knowledge.

Lead window comes catalogue

E4468:3:148 Broken Type 1 lead came loop

33mm L., 22mm W., 10mm T.; 8g weight

Two strips of Type 1 lead came connecting in a loop and joined together with a secure twisted knot. The strips were looped around in a sub triangular loop with the two ends at the knot having been clipped and the two ends at the top of the loop having been broken. The space enclosed by the loop is 18mm x 17mm in maximum dimensions. Re-used came scrap, probable architectural fixing.

E4468:3:149 Strip of Type 1 lead came

40mm L., 4mm W., 2mm T.; >1g weight

Length of Type 1 lead came bent into a V-shape. Both ends are broken. Probable architectural fixing.

E4468:3:150 Strip of Type 1 lead came

43mm L., 9mm W., 1.5mm T.; > 1g weight

Strip of Type 1 lead came with one twist near one end. Corroded. Broken at both ends. Probable architectural fixing.

E4468:3:151 Two twisted pieces of Type 1 came

54mm L., 29mm W., 9mm T.; 8g weight

Two strips of Type 1 lead came roughly twisted together. The two ends at the twisted end are clipped, the other two ends are broken. Probable architectural fixing.

E4468:3:152 Strip of Type 3 lead came

59mm L., 6mm W., 3mm T.; 4g weight

Straight strip of Type 3 lead came. Quite compressed and flattened. Broken at both ends.

E4468:3:153 Strip of Type 2 lead came

56mm L., 8mm W., 4mm T.; 3g weight

Twisted strip of Type 2 lead came. Twisted and broken at both ends.

E4468:3:154 Two joined strips of Type 3 lead came

91mm L., 41mm W., 4mm T.; 9g weight

Side corner came for a diamond-shaped glass 'quarry' or 'quarrel' from a casement window. Two sections of Type 3 lead came joined at a 72-degree angle, forming the side of the diamond. All the ends are broken.

E4468:4:723 Strip of unidentified lead came

35mm L., 7mm W., 3mm D.; 3g Weight

Strip of unidentified lead came, broken at both ends and compressed along its length. Some mortar adhesion on one side.

E4468:6:4378 Section of Type 3 lead came

316mm L., 65mm W., 5mm T.; 38g weight
Section of Type 3 window lead forming one complete surround for an isosceles triangular 'quarry' or 'quarrel' from a casement window measuring 80mm in maximum length and 54mm in maximum width. Three comes form the piece and they are contorted, bent out of shape and corroded. The came forming one side of the triangular light curves and continues for a length of 219mm below the light, running in line with the came forming the base of the triangular light. It appears that one side of this came has been intentionally bent over and closed suggesting it was a border came, however this cannot be said with certainty due to the bent and damaged nature of the came strip. There are two small pieces of soldered lead along this, one 35mm below the light and the second a further 136mm beyond that. It is unclear whether this is where additional comes would have been connected for further quarrel panes or if they were to hold the border came to the window frame. It is possible that this is the remains of a curved window border. The connections between the three comes forming the sides of the triangular light are connected using a small piece of soldered lead which appear to be small pieces of came strip. There is a concretion attached in some places and some oxide staining, likely to be from the material the lead was lying in.

Two sherds of cylinder glass (E4468:6:8760) from the triangular quarry were found within triangular lead light. The pieces fit into the lead comes but are not connected to each other, and form the base corners of the triangle. The angles of the surviving corners of the quarry were 60- and 40-degrees. Score lines from where the glass was cut are visible in places. The light created by the lead comes measures 80mm in length and 50mm in height. Two or the soldered corners are somewhat uneven and would have required that the corners of the quarry be clipped and one corner of the surviving sherds was trimmed off to fit into the comes. Some patination. One corner was trimmed off to fit onto the lead came light as the join of the comes was slightly uneven.

E4468:6:4390 Scrap of Type 1 lead came

75mm L., 4.5mm W., 2mm T.; 3g weight
Waste scrap of Type 1 lead came. Clipped at both ends.

E4468:6:4391 Scrap of Type 1 lead came

58mm L., 4.5mm W., 2mm T.; 2g weight
Waste scrap of Type 1 lead came. Clipped at both ends.

E4468:6:4392 Scrap of Type 1 lead came

40mm L., 4.5mm W., 2mm T.; 1g weight
Waste scrap of Type 1 lead came. Clipped at one end and broken at the other, damaged along one side.

E4468:6:4393 Scrap of Type 1 lead came

67mm L., 4.5mm W., 2mm T.; 3g weight
Waste scrap of Type 1 lead came. Clipped at both ends. Bend and slightly twisted.

E4468:6:4394 Scrap of Type 1 lead came

24mm L., 4.5mm W., 2mm T.; >1g weight
Short twisted waste scrap of Type 1 lead came. Clipped at one end, twisted and broken at the other.

E4468:6:4395 Scrap of Type 1 lead came

45mm L., 4.5mm W., 2mm T.; 1g weight
Waste scrap of Type 1 lead came. Clipped at both ends. Slightly twisted.

E4468:6:4396 Two twisted scraps of Type 1 came

47mm L., 36mm W., 9mm D; 7g weight
Two strips of Type 1 lead came roughly twisted together. One strip is loosely looped around the other. The ends are all clipped. Possible informal architectural fixing or temporary tie of the old lead while re-leading the windows.

E4468:6:4397 Two twisted scraps of Type 1 came

50mm L., 45mm W., 9mm T.; 5g weight
Two strips of Type 1 lead came roughly twisted together. One strip is loosely looped around the other. The ends are all clipped. Possible informal architectural fixing or temporary tie of the old lead while re-leading the windows.

34468:6:4398 Two twisted scraps of Type 1 came

35mm L., 22mm W., 12mm T.; 6g weight
Two strips of Type 1 lead came twisted together. The strips are tied tightly with both comes twisted together. The ends are all clipped. Possible informal architectural fixing or temporary tie of the old lead while re-leading the windows.

E4468:6:4399 Two twisted scraps of Type 1 came

65mm L., 22mm W., 9mm T.; 4g weight
Two strips of Type 1 lead came twisted together. Both strips are tightly twisted together at one end. The ends are all clipped. Quite corroded. Possible informal architectural fixing or temporary tie of the old lead while re-leading the windows.

E4468:6:4400 Two twisted scraps of Type 1 came

44mm L., 25mm W., 10mm T.; 11g weight
Two strips of Type 1 lead came tightly twisted together. Both strips are twisted along their length and twisted together. The ends are all broken. Possible temporary tie of the old lead while re-leading the windows.

E4468:6:4401 Scrap of Type 1 lead came

33mm L., 6mm W., 4.5mm T.; 2g weight
Strip of Type 1 lead came bent into a tight U-shape. Clipped at both ends.

E4468:6:4402 Scrap of Type 1 lead came and lump

64mm L., 4.5mm W., 2mm T.; 5g weight
Strip of Type 1 lead came with a lump of lead attached to one end. This may be from the soldered connection of the window comes. Quite corroded. Some mortar attached to the surface. Lump of lead at the end of the strip measures 12mm x 11mm x 5mm.

E4468:6:4403 Scrap of Type 1 lead came and lump

58mm L., 4.5mm W., 2mm T.; 4g weight
Strip of Type 1 lead came with a lump of lead attached to one end. This may be from the soldered connection of the window comes. Quite corroded. Lump of lead at the end of the strip measures 14mm x 11mm x 3mm.

E4468:6:4404 Scrap of Type 1 lead came

68mm L., 4.5mm W., 2mm T.; 4g weight
Strip of Type 1 lead came. Twist at one end. Both ends are clipped. Quite corroded.

E4468:6:4405 Scrap of Type 1 lead came

29mm L., 4.5mm W., 2mm T.; 1g weight
Short strip of Type 1 lead came. Clipped at both end with the cut on one side suggesting it was cut by a knife. Quite corroded.

E4468:6:4406 Strip of Type 1 lead came
55mm L., 4.5mm W., 2mm T.; 8g weight
Strip of Type 1 lead came. Clipped at both ends and relatively straight. Reeds very clear along the cut central heart, the central heart was cut using a knife.

E4468:6:4407 Strip of intact Type 1 lead came
126mm L., 4.5mm W., 4mm T.; 10g weight
Twisted and compressed strip of intact Type 1 lead came. Only surviving section of Type 1 lead came where both leaves are present together. Clipped at one end and broken at the other. Quite corroded.

E4468:6:4417 Strip of Type 2 lead came
82mm L., 8mm W., 3.5mm T.; 5g weight
Strip of Type 2 lead came. Broken at both ends and buckled slightly in places. Dark grey in colour.

E4468:6:4418 Strip of Type 2 lead came
83mm L., 8mm W., 3.5mm T.; 5g weight
Strip of Type 2 lead came. Twisted and compressed. Broken at both ends. Dark grey in colour.

E4468:6:4419 Strip of Type 2 lead came
94mm L., 8mm W., 3.5mm T.; 6g weight
Strip of Type 2 lead came. Slightly twisted at one end. Broken at both ends. Dark grey in colour.

E4468:6:4420 Strip of Type 2 lead came
67mm L., 8mm W., 3.5mm T.; 4g weight
Strip of Type 2 lead came. Quite corroded. Broken at both ends. Light grey colour.

E4468:6:4421 Strip of Type 2 lead came
270mm L., 8mm W., 3.5mm T.; 13g weight
Strip of Type 2 lead came in two parts. Broken at both ends and once in the centre. Light grey in colour.

E4468:6:4422 Strip of Type 2 lead came
114mm L., 8mm W., 3.5mm T.; 8g weight
Strip of Type 2 lead came. Broken at both ends and slightly crumpled at one end. Light grey in colour.

E4468:6:4423 Strip of Type 2 lead came
63mm L., 8mm W., 3.5mm T.; 3g weight
Strip of Type 2 lead came. Broken at both ends and slightly crumpled along one of the leaves. Quite corroded. Light grey in colour.

E4468:6:4424 Strip of Type 2 lead came
125mm L., 8mm W., 3.5mm T.; 6g weight
Strip of Type 2 lead came. Broken at both ends and crumpled along one of the leaves. One small section of a second came of similar type is soldered to part of the came. Light grey in colour.

E4468:6:4425 Strip of Type 2 lead came
34mm L., 8mm W., 3.5mm T.; 2g weight
Short strip of Type 2 lead came. Broken at both ends. Mid-grey in colour.

E4468:6:4426 Strip of Type 2 lead came
51mm L., 8mm W., 3.5mm T.; 4g weight
Short strip of Type 2 lead came. Broken at both ends. Mid-grey in colour.

E4468:6:4427 Two connected Type 2 lead comes
115mm L., 91mm W., 3.5mm T.; 15g weight
Two sections of Type 2 lead came soldered together. Part of the surround of a window light of a casement window. Both are twisted and contorted, however the angle they

are connected at suggests that they would have formed part of a diamond pattern. All the ends are broken. Mid-grey in colour.

E4468:6:4428 Strip of Type 3 lead came
82mm L., 6mm W., 3.5mm T.; 5g weight
Strip of Type 3 lead came. Broken at both ends and some damage along the leaves. Light grey in colour.

E4468:6:4429 Strip of Type 3 lead came
51mm L., 6mm W., 3mm T.; 3g weight
Short strip of Type 3 lead came. Compressed and broken at both ends. Light grey in colour.

E4468:6:4430 Strip of Type 3 lead came
63mm L., 6mm W., 3.5mm T.; 4g weight
Strip of Type 3 lead came. Flattened along its length and broken at one end, clipped at the other. Mid-grey in colour.

E4468:6:4431 Strip of Type 3 lead came
44mm L., 6mm W., 3.5mm T.; 2g weight
Short strip of Type 3 lead came. Broken at both ends. Mid-grey in colour.

E4468:6:4432 Two attached Type 3 lead came strips
120mm L., 81mm W., 7mm T.; 16g weight
Two strips of Type 3 lead came soldered together at a 50-degree angle. Both are slightly bent and flattened. A strip of lead wire running in the opposite direction is also attached to the point they are soldered together. The lead strip is D-shaped in profile and measures 49mm in length, 3.5mm in width and 2mm in thickness. A small piece of stone and mortar is also attached to the point where the three pieces of lead are soldered together. This may be from where the window glass was set into the stone window frame of a mullion window. It is unclear what purpose the lead wire would serve, but was possibly used for support or fixing.

E4468:6:4433 Strip of Type 4 lead came
39mm L., 7mm W., 3.5mm T.; 2g weight
Short strip of Type 3 lead came. Compressed and slightly bent. Broken at both ends. Striations apparent along leaves. Dark grey in colour.

E4468:6:4434 Strip of Type 4 lead came
65mm L., 7mm W., 3.5mm T.; 5g weight
Strip of Type 4 lead came bent in a right-angle. Broken at both ends. Some corrosion apparent. Mottled light and dark grey in colour.

E4468:6:4435 Type 4 lead came, outline of 'quarrel'
122mm L., 93mm W., 5mm T.; 30g weight
Three sides of connected Type 4 lead came laid out in a square, rectangular or triangular design. The lead is flattened and slightly contorted. One additional short section of came is attached at one of the joints, suggesting the pattern may have been triangular rather than square, however this is unclear and may be a poor repair of the joint, with the excess lead not removed. The length of the quarrel that would have fitted in the light is 110mm. This size matches well with the rectangular pane E4468:2:670/ E4468:7:488. The joins of the lead comes are rough and poorly finished with a lot of additional lead, though this could be from repairs. One small piece of glass survives held by one of the comes. This piece, measuring 6mm x 5mm is the corner of what would have been an adjoining quarrel as it is on the opposite side of the lead came.

E4468:6:4436 Unidentified lead came
89mm L., 7mm W., 3mm T.; 5g weight
Strip of unidentified lead came. Flattened and corroded.
Broken at both ends. Mid-grey in colour.

E4468:6:4437 Unidentified lead came
54mm L., 8mm W., 3.5mm T.; 4g weight
Strip of unidentified lead came. Bend, twisted and broken
at both ends. Mid-grey in colour.

E4468:6:4438 Unidentified lead came
43mm L., 3-8mm W., 3mm T.; 3g weight
Strip of unidentified lead came. Compressed. Broken at
both ends. Mid-grey colour.

E4468:6:4439 Unidentified lead came
77mm L., 8mm W., 2-4mm T.; 4g weight
Strip of unidentified lead came. Compressed. Broken at
both ends. Mid-grey colour.

E4468:6:4440 Unidentified lead came
71mm L., 4-6mm W., 3.5mm T.; 5g weight
Strip of unidentified lead came. Slightly bent and broken
at both ends. Suggestion that one side was intentionally
closed over leaving a U-shaped profile suggesting this
could be border came. Mid-grey colour.

E4468:6:4441 Unidentified lead came
46mm L., 2.5-7mm W., 2-2.5mm T.; 2g weight
Strip of unidentified lead came. Flattened at one end
and compressed into a small hook at the other. Unclear
whether the hooked end is intentional. Mid-grey colour.

E4468:6:4442 Unidentified lead came
48mm L., 6mm W., 3mm T.; 2g weight
Strip of unidentified lead came. Flattened. Broken at both
ends. Mid-grey colour.

E4468:6:4443 Unidentified lead came
37mm L., 9mm W., 3mm T.; 2g weight
Strip of unidentified lead came. Flattened. Broken at both
ends. Mid-grey colour.

E4468:6:4444 Unidentified lead came
22mm L., 7mm W., 3mm T.; 1g weight
Strip of unidentified lead came. Flattened. Broken at both
ends. Mid-grey colour.

E4468:6:4445 Unidentified lead came
67m L., 4mm W., 4mm T.; 4g weight
Twisted strip of unidentified lead came. The leaves are fol-
ded inwards. Broken at both ends. Mid-grey colour.

E4468:6:4446 Unidentified lead came
53mm L., 6mm W., 3mm T.; 3g weight
Strip of unidentified lead came. The leaves are folded in-
wards. One end is bent into a hook. Broken at both ends.
Mid-grey colour.

E4468:6:4447 Unidentified lead came
67mm L., 6mm W., 3mm T.; 6g weight
Twisted strip of unidentified lead came. The leaves are fol-
ded inwards. Clipped at one end, broken at the other.
Curled into a G-shape. Mid-grey colour.

E4468:6:4448 Unidentified lead came
39mm L., 7mm W., 4mm T.; 3g weight
Twisted strip of unidentified lead came. Clipped at one
end, broken at the other. Mid-grey colour.

E4468:6:4449 Unidentified lead came

33mm L., 9mm W., 1mm T.; 2g weight
Short, flattened strip of lead came. Broken at both ends.
Mid-grey colour.

E4468:6:4450 Unidentified lead came
58mm L., 5mm W., 4mm T.; 4g weight
Strip of unidentified lead came. The leaves are folded in-
wards. Broken at both ends. Light grey colour.

E4468:6:4451 Unidentified lead came
48mm L., 5mm W., 3.5mm T.; 3g weight
Strip of unidentified lead came. The leaves are folded in-
wards. Broken at both ends. Light grey colour.

E4468:6:4452 Unidentified lead came
33mm L., 4mm W., 3.5mm T.; 1g weight
Strip of unidentified lead came. The leaves are folded in-
wards. Broken at both ends. Light grey colour.

E4468:6:4453 Unidentified lead came
66mm L., 2-6mm W., 4mm T.; 4g weight
Strip of unidentified lead came. Broken at one end. The
other end is compressed and appears to have been bit-
ted, possibly by rats or mice while stored in the cellar.
Light grey colour.

E4468:6:4454 Unidentified lead came
40mm L., 8mm W., 2mm T.; 2g weight
Flattened strip of unidentified lead came. Broken at both
ends. Light grey colour.

E4468:6:4455 Unidentified lead came
38mm L., 10mm W., 4mm T.; 3g weight
Strip of unidentified lead came. Corroded. Broken at both
ends. Light grey colour.

E4468:6:4456 Unidentified lead came
33mm L., 8mm W., 5mm T.; 1g weight
Short scrap of unidentified lead came. Corroded. Broken
at both end and along one leaf. Light grey colour.

E4468:6:4457 Unidentified lead came
30mm L., 7mm W., 3.5mm T.; 1g weight
Strip of curled unidentified lead came. The leaves are fol-
ded inwards. Broken at both ends. Light grey colour.

E4468:6:8814 Strip of Type 1 lead came
21mm L., 4.5mm W., 3mm D.; 1g weight
Strip of Type 1 lead came, clipped at both ends.

E4468:6:8815 Strip of Type 2 lead came
36mm L., 8mm W., 3.5mm D.; 1g weight
Strip of Type 2 lead came, broken at both ends. Damage
along both leaves and corroded.

E4468:6:8816 Strip of Type 4 lead came
39mm L., 8mm W., 3.5mm D.; 2g weight
Strip of Type 4 lead came, broken at both ends. Bent and
damaged along the length of the came.

E4468:6:8817 Strip of unidentified lead came
41mm L., 8mm W., 1.5mm D.; 3g weight
Strip of unidentified lead came, broken at both ends and
compressed along its length. Probably Type 2 or Type 4
given the width of the leaves, but cannot say with cer-
tainty.

E4468:7:440 Scrap of Type 1 lead came
80mm L., 4mm W., 2mm T.; 5g weight
Twisted scrap of Type 1 lead came. Clipped at one end
and tapers to a blunt point at the other. Twisted along its

length.

E4468:7:441 Scrap of Type 1 lead came

36mm L., 4mm W., 2mm T.; 2g weight
Scrap of Type 1 lead came. Clipped at one end and broken at the other. Striations visible along the surviving leaf.

E4468:7:442 Scrap of Type 1 lead came

54mm L., 4mm W., 2mm T.; 3g weight
Scrap of Type 1 lead came. Clipped at one end and tapered to a blunt point at the other.

E4468:7:443 Scrap of Type 1 lead came

60mm L., 4mm W., 2mm T.; 3g weight
Scrap of Type 1 lead came. Clipped at both ends.

E4468:7:444 Scrap of Type 1 lead came

40mm L., 4mm W., 2mm T.; 2g weight
Scrap of Type 1 lead came. Twisted off at one end and broken at the other.

E4468:7:445 Scrap of Type 1 lead came

40mm L., 4mm W., 2mm T.; 2g weight
Scrap of Type 1 lead came. Clipped at both ends.

E4468:7:446 Scrap of Type 1 lead came

456mm L., 4mm W., 2mm T.; 3g weight
Scrap of Type 1 lead came. Clipped at both ends. Small twist near one end.

E4468:7:447 Scrap of Type 1 lead came

63mm L., 4mm W., 2mm T.; 4g weight
Scrap of Type 1 lead came bend over on itself. Clipped at both ends.

E4468:7:448 Scrap of Type 1 lead came

40mm L., 4mm W., 2mm T.; 2g weight
Scrap of Type 1 lead came. Clipped at one end and tapered to a point at the other. Striations visible along the surviving leaf.

E4468:7:449 Scrap of Type 1 lead came

84mm L., 4mm W., 2mm T.; 4g weight
Scrap of Type 1 lead came. Clipped at both ends. Damaged along the edges of the leaf.

E4468:7:450 Scrap of Type 1 lead came

50mm L., 4mm W., 2mm T.; 3g weight
Scrap of Type 1 lead came. Clipped at both ends. Damaged along the edges of the leaf and slightly twisted.

E4468:7:451 Two twisted strips of Type 1 lead came

54mm L., 40mm W., 9mm T.; 9g weight
Two strips of Type 1 lead came twisted together at one end. All ends are clipped. The twisted knot is tightly wrapped. Both came were 4mm in width and 2mm in thickness.

E4468:7:452 Four connected Type 2 lead comes

176mm L., 174mm W., 3.5mm T.; 26g weight
Four strips of Type 2 lead came soldered together with a small piece of additional lead used to connect the four strips. The comes are connected at c. 65-degree and 110-degree angles, suggesting they formed part of a diamond pattern. Two of the strips are quite damaged and bent and all the strips are broken at the ends. The other two strips are in better condition. Both of the comes surviving in better condition are initialled and dated along the central heart. The text has been left in relief in a similar manner to the raised reeds along the heart and reads

'EW 1692' with three small 5-petaled flowers, one before the text, one between the initials and the date, and one after the date. This indicates the Type 2 lead came was manufactured by the firm of Edward White in 1692. The firm of Edward White was probably the best-known at the time, producing lead window comes from the late 17th century to the early 18th century, and was based in London (Strobl 2002). Other sites where the firm's markings have been recorded are 'E.W.1689' at Audley End in Essex, 'E.W.1712' at Newstead in Kent and 'E.W. 1716' at Wroxton Abbey, Oxfordshire.

E4468:7:453 Strip of Type 2 lead came

80mm L., 8mm W., 3.5mm T.; 7g weight
Strip of Type 2 lead came. Broken at both ends. Damaged along leaves and partially flattened.

E4468:7:454 Strip of Type 2 lead came

20mm L., 8mm W., 3.5mm T.; 1g weight
Short strip of Type 2 lead came. Broken at both ends. Partially flattened.

E4468:7:455 Strip of Type 3 lead came

133mm L., 7mm W., 3.5mm T.; 9g weight
Strip of probable Type 3 lead came, slightly wider than previously seen at 7mm. Clipped at one end and broken at the other. Mostly flattened.

E4468:7:456 Strip of Type 4 lead came

70mm L., 7mm W., 3.5mm T.; 4g weight
Strip of Type 4 lead came, slightly narrower than previously seen at 7mm. Clipped at one end and broken at the other. Quite bent along the leaves.

E4468:7:457 Strip of Type 4 lead came

99mm L., 7mm W., 3.5mm T.; 8g weight
Strip of Type 4 lead came, slightly narrower than previously seen at 7mm. Bent and flattened along its length. Broken at one end. The other end has the remains of the connection between three other comes. All of these are broken and no more than 9mm in length but appear to have been laid in a diamond pattern.

E4468:7:458 Unidentified lead came

80mm L., 7mm W., 2.5mm T.; 6g weight
Unidentified strip of lead came. Compressed and bent along its length. Broken at one end. The other end appears to have been at the joint with other comes.

E4468:7:459 Unidentified lead came

47mm L., 7mm W., 3mm T.; 3g weight
Strip of unidentified lead came. Corroded and brittle. Broken at both ends.

E4468:7:460 Unidentified lead came

63mm L., 5.5mm W., 3.5mm T.; 4g weight
Strip of unidentified lead came. Corroded and brittle. Broken at both ends. Reed spacing suggests Type 2 came, but this is unclear.

E4468:7:461 Unidentified lead came

95mm L., 7.5mm W., 3.5mm T.; 6g weight
Strip of unidentified lead came with a short section of a second came 19mm in length attached to one end. Both are corroded and brittle. Reed spacing suggests Type 2 came, but this is unclear.

E4468:7:462 Unidentified lead came

53mm L., 3mm W., 2.5mm T.; 2g weight
Bent and compressed scrap of unidentified lead came. One end is broken, the other is clipped. Too compressed

to identify. Quite corroded.

E4468:7:463 Unidentified lead came

33mm L., 6mm W., 2.5mm T.; 1g weight
Strip of unidentified lead came. Corroded and brittle.
Broken at both ends.

E4468:7:464 Unidentified lead came

20mm L., 6mm W., 4mm T.; 1g weight
Short scrap of unidentified lead came. Bent, contorted
and corroded. Broken at both ends.

E4468:7:465 Unidentified lead came

30mm L., 4mm W., 4mm T.; 2g weight
Twisted scrap of unidentified lead came. The strip has
been tightly twisted. Broken at both ends.

E4468:7:466 Unidentified lead came

53mm L., 6mm W., 3mm T.; 3g weight
Strip of unidentified lead came, twisted slightly at one
end. The edges of the leaves are rolled slightly. Broken at
both ends. Light grey in colour.

E4468:7:467 Unidentified lead came with lump

102mm L., 5-17mm W., 4-6mm T.; 14g weight
Strip of unidentified lead came with a rectangular piece
of lead attached to one end measuring 21mm x 17mm
and 6mm in thickness. This is probably the join between
four comes. Both pieces of lead are corroded. Came is
flattened, bent and broken at the end.

E4468:7:468 Unidentified lead came with lump

46mm L., 8-14mm W., 3.5-5mm T.; 7g weight
Two strips of unidentified lead came joined by a rectan-
gular piece of lead measuring 14mm x 14mm and 5mm in
thickness. This is probably the join between four comes.
The lead is corroded. Comes are damaged and broken
at the end.

E3368:7:469 Three connected unidentified comes

77mm L., 66mm W., 4mm T.; 12g weight
Three strips of unidentified lead came connected at a
joint. All the strips are twisted and bent, and the lead is
corroded. Cannot identify the original shape of joint.

E4468:7:470 Unidentified twisted came bundle

51mm L., 23mm W., 22mm T.; 32g weight
At least three lead comes twisted together and twisted
around a lead joint with two further strips of came at-
tached. Appears to have been created when window
was being replaced, with the waste lead twisted togeth-
er. A gold sheen is apparent on one side of the joint and
along some of the comes.

E4468:7:471 Strip of Type 1 lead came

64mm L., 4.5mm W., 2mm T.; 3g weight
Strip of Type 1 lead came, twisted at one end. Clipped at
both ends.

E4468:7:472 Strip of Type 1 lead came

25mm L., 4.5mm W., 2mm T.; >1g weight
Short twisted strip of Type 1 lead came. Broken at both
ends.

E4468:7:473 Strip of Type 1 lead came

45mm L., 4.5mm W., 2mm T.; 3g weight
Bent strip of Type 1 lead came. Broken at both ends.

E4468:7:474 Strip of Type 1 lead came

67mm L., 5mm W., 2mm T.; 4g weight
Twisted strip of Type 1 lead came. Twisted and clipped at

one end, bent and clipped at the other. Two raised
bands visible running along the leaf.

E4468:7:475 Strip of Type 1 lead came

70mm L., 4.5mm W., 2mm T.; 4g weight
Twisted and bend strip of Type 1 lead came. Broken at
both ends.

E4468:7:476 Strip of Type 3 lead came

26mm L., 7mm W., 3.5mm T.; 2g weight
Short strip of Type 3 lead came. Broken at both ends.

E4468:7:477 Unidentified lead came

28mm L., 10mm W., 3mm T.; 2g weight
Short flattened strip of unidentified lead came. Clipped at
one end, broken at the other.

E4468:7:478 Unidentified lead came

26mm L., 8mm W., 2mm T.; 2g weight
Bent strip of unidentified lead came. Corroded and
broken at both ends. Light grey colour.

E4468:7:479 Unidentified lead came

40mm L., 5mm W., 2mm T.; 3g weight
Twisted strip of unidentified lead came. Partially flattened.
Broken at both ends.

E4468:9:181 Scrap of Type 1 lead came

70mm L., 4mm W., 2mm T.; 3g weight
Bent strip of Type 1 lead came. Partially twisted. Clipped
at one end, broken at the other.

E4468:9:182 Scrap of Type 1 lead came

33mm L., 4mm W., 2mm T.; 2g weight
Strip of Type 1 lead came. Clipped at one end, broken at
the other.

E4468:9:183 Scrap of Type 1 lead came

60mm L., 4mm W., 2mm T.; 2g weight
Strip of Type 1 lead came. Clipped at both ends. Small
twist at one end.

E4468:9:184 Two twisted strips of Type 1 lead came

61mm L., 8mm W., 7mm T.; 6g weight
Two strips of Type 1 lead came tightly twisted around
each other at one end. All the ends are clipped.

E4468:9:185 Strip of complete Type 1 lead came

83mm L., 5mm W., 4mm T.; 5g weight
Strip of complete Type 1 lead came. Reeds are close to-
gether. Strip is compressed and the edges of the leaves
are overlapping in places. Bend along its length and both
ends are broken.

E4468:9:186 Strip of Type 2 lead came

64mm L., 8mm W., 3.5mm T.; 5g weight
Strip of Type 2 lead came. Broken at both ends.

E4468:9:187 Strip of Type 3 lead came

72mm L., 6mm W., 2-3.5mm T.; 2g weight
Strip of tightly twisted Type 3 lead came. Broken at both
ends. Light grey in colour.

E4468:9:188 Strip of Type 3 lead came

56mm L., 9mm W., 3.5mm T.; 8g weight
Wide strip of Type 3 lead came. Appears to be additional
untrimmed lead along edge. Tightly twisted at one end.
Broken at both ends.

E4468:9:189 Strip of Type 3 lead came

38mm L., 7mm W., 3.5mm T.; 3g weight

Short strip of Type 3 lead came. Broken at both ends.

E4468:9:190 Strip of Type 3 lead came
55mm L., 7mm W., 3.5mm T.; 6g weight
Strip of Type 3 lead came with additional lead attached to one end. Other end broken. Additional lead measures 19mm x 12mm and is likely to be the joint between other comes.

E4468:9:191 Two strips of joined Type 3 lead came
68mm L., 40mm W., 13mm T.; 12g weight
Two twisted strips of Type 3 lead came soldered together at one end. Both comes are corroded, bent and twisted. Broken at the other ends. Both comes are 7mm in width and 3.5mm in height.

E4468:9:192 Strip of Type 4 lead came
75mm L., 7mm W., 3.5mm T.; 4g weight
Mostly flattened strip of Type 4 lead came. Corroded. Broken at both ends.

E4468:9:193 Strip of Type 4 lead came
47mm L., 7mm W., 3.5mm T.; 3g weight
Strip of Type 4 lead came. Broken at both ends.

E4468:9:194 Strip of Type 4 lead came
105mm L., 7mm W., 3.5mm T.; 7g weight
Strip of Type 4 lead came, damaged along both leaves. Corroded. Broken at both ends.

E4468:9:195 Strip of Type 4 lead came
58mm L., 7mm W., 3.5mm T.; 4g weight
Strip of Type 4 lead came. Corroded. Broken at both ends.

E4468:9:196 Strip of Type 4 lead came
94mm L., 7mm W., 3.5mm T.; 6g weight
Strip of Type 4 lead came, damaged along both leaves. Corroded. Broken at both ends.

E4468:9:197 Strip of Type 4 lead came
48mm L., 7mm W., 3.5mm T.; 3g weight
Strip of Type 4 lead came. Partially rolled at one end. Broken at both ends.

E4468:9:198 Strip of Type 4 lead came
51mm L., 8mm W., 3.5mm T.; 6g weight
Strip of Type 4 lead came, bend over at one end. Clipped at the bend over end, broken at the other.

E4468:9:199 Strip of Type 4 lead came
60mm L., 7mm W., 3.5mm T.; 6g weight
Strip of Type 4 lead came. Tightly rolled at one end. Broken at one end, clipped at the other.

E4468:9:200 Strip of Type 4 lead came
31mm L., 7mm W., 3.5mm T.; 2g weight
Strip of Type 4 lead came with damage along both leaves. Broken at both ends.

E4468:9:201 Strip of Type 4 lead came
36mm L., 7mm W., 3.5mm T.; 3g weight
Damaged short strip of Type 4 lead came. Corroded. Broken at both ends.

E4468:9:202 Strip of Type 4 lead came
85mm L., 8mm W., 3.5mm T.; 11g weight
Strip of Type 4 lead came with additional piece of lead attached to one end from joint between comes. Broken at the other end. Additional lead measures 20mm x 12mm.

E4468:9:203 Strip of unidentified lead came
70mm L., 6mm W., 2mm T.; 4g weight
Strip of unidentified lead came. Leaves bent over and flattened. Corroded. Broken at both ends.

E4468:9:204 Strip of unidentified lead came
58mm L., 3.5mm W., 3mm T.; 4g weight
Rolled strip of unidentified lead came. Broken at both ends.

E4468:9:205 Strip of unidentified lead came
54mm L., 4-9mm W., 3mm T.; 5g weight
Twisted strip of unidentified lead came. Compressed. Broken at both ends.

E4468:9:206 Strip of unidentified lead came
44mm L., 8mm W., 2.5mm T.; 3g weight
Damaged strip of unidentified lead came. Damaged along both leaves. Broken at the ends.

E4468:9:207 Strip of unidentified lead came
50mm L., 3.5mm Dia., 2g weight
Rolled strip of unidentified lead came. Broken at both ends.

E4468:9:208 Strip of unidentified lead came
52mm L., 3-8mm W., 2-3mm T.; 3g weight
Twisted scrap of unidentified lead came. Twisted and broken at both ends.

E4468:9:209 Strip of unidentified lead came
54mm L., 6mm W., 3mm T.; 4g weight
Bent strip of unidentified lead came. Twisted and compressed. Broken at both ends.

E4468:9:210 Strip of unidentified lead came
69mm L., 6mm W., 1.5-2mm T.; 3g weight
Flattened strip of unidentified lead came. Clipped at both ends.

E4468:9:211 Strip of unidentified lead came
35mm L., 4-8mm W., 2-3.5mm T.; 2g weight
Flattened strip of unidentified lead came. Broken at both ends.

E4468:9:212 Strip of unidentified lead came
60mm L., 5mm W. 4mm T.; 5g weight
Twisted and bent strip of unidentified lead came. Corroded. Broken at both ends.

E4468:9:213 Strip of unidentified lead came
43mm L., 6mm W., 2.5mm T.; 2g weight
Twisted and compressed strip of unidentified lead came. Corroded. Broken at both ends.

E4468:9:214 Strip of unidentified lead came
48mm L., 5.5-8mm W., 1.5-2mm T.; 3g weight
Flattened strip of unidentified lead came. Clipped at one end, broken at the other.

E4468:9:215 Strip of unidentified lead came
45mm L., 9mm W., 2mm T.; 4g weight
Flattened strip of unidentified lead came with one twist in the centre. Broken at both ends.

E4468:9:216 Strip of unidentified lead came
36mm L., 4-5mm W., 2.5-3.5mm T.; 2g weight
Flattened and compressed strip of unidentified lead came. Corroded. Broken at both ends.

E4468:9:217 Strip of unidentified lead came

32mm L., 4-5mm W., 3-4mm T.; 2g weight
Compressed and contorted strip of unidentified lead came. Corroded. Broken at both ends.

E4468:9:218 **Strip of unidentified lead came**
32mm L., 5-7mm W., 3-4.5mm T.; 2g weight
Bent and compressed strip of unidentified lead came. Corroded. Broken at both ends.

E4468:9:219 **Strip of unidentified lead came**
48mm L., 3.5-4.5mm W., 2-3mm T.; 4g weight
Tightly rolled, twisted and bent strip of unidentified lead came. Broken at both ends.

E4468:9:220 **Strip of unidentified lead came**
60mm L., 4.5-5mm W., 2.5-3mm T.; 2g weight
Compressed strip of unidentified lead came. Clipped at one end, broken at the other.

E4468:9:221 **Strip of unidentified lead came**
32mm L., 6mm W., 3mm T.; 3g weight
Twisted strip of unidentified lead came. Clipped at one end, broken at the other.

E4468:9:222 **Strip of unidentified lead came**
30mm L., 5mm W., 3mm T.; 2g weight
Rolled strip of unidentified lead came. Broken at both ends.

E4468:9:223 **Strip of unidentified lead came**
37mm L., 4mm W., 3mm T.; 3g weight
Rolled strip of unidentified lead came. Broken at both ends.

E4468:9:224 **Strip of unidentified lead came**
44mm L., 5.5-8mm W., 4mm T.; 3g weight
Twisted and bend strip of unidentified lead came. Clipped at both ends.

E4468:9:225 **Strip of unidentified lead came**
81mm L., 4-7.75mm W., 2.5mm T.; 5g weight
Strip of unidentified lead came bent into a loose ring. Shape appears accidental. Bend and compressed. Broken at both ends.

E4468:9:226 **Strip of unidentified lead came**
32mm L., 4-5-12.5mm W., 2-3.5mm T.; 4g weight
Tightly twisted strip of unidentified lead came. Broken at both ends.

E4468:9:227 **Strip of unidentified lead came**
23mm L., 8mm W., 2mm T.; 1g weight
Flattened strip of unidentified lead came. Clipped at one end, broken at the other.

E4468:9:228 **Strip of unidentified lead came**
21mm L., 10mm W., 1.75mm T.; 1g weight
Flattened strip of unidentified lead came. Clipped at one end, cut to a rounded tip at the other.

E4468:9:229 **Strip of unidentified lead came**
32mm L., 6mm W., 4mm T.; 3g weight
Rolled strip of unidentified lead came. Broken at both ends.

E4468:9:230 **Strip of unidentified lead came**
53mm L., 4-11mm W., 2-5mm T.; 7g weight
Twisted and compressed strip of unidentified lead came with additional lead attached to one end. Other end twisted off. Additional lead has been compressed into the came.

E4468:9:231 **Scrap of unidentified lead came**
14mm L., 6mm W., 2mm T.; >1g weight
Scrap of unidentified lead came. Corroded. Broken at both ends.

E4468:9:232 **Scrap of unidentified lead came**
14mm L., 5mm W., 2mm T.; >1g weight
Scrap of flattened unidentified lead came. Broken at both ends.

E4468:10:36 **Strip of Type 2 lead came**
55mm L., 8mm W., 3.5mm T.; 3g weight
Strip of Type 2 lead came. Corroded and bent. Broken at both ends.

E4468:10:40 **Strip of Type 2 lead came**
48mm L., 8mm W., 3.5mm T.; 2g weight
Strip of Type 2 lead came. Corroded and bent. Broken at both ends.

Lead architectural fittings, artefacts and waste

A number of lengths of lead wire are present within the assemblage. Some of these are clearly lead wire, possibly used as architectural ties and fixings. A visual comparison with the wire fixings used in the casement window previously found at Rathfarnham Castle suggests that they may relate to the fixing of the leaded window lights. Unfortunately, as the window is currently unavailable to view a more detailed inspection and comparison cannot be made at present. One find from the assemblage (E4468:6:4432) which included two strips of Type 3 lead came and a strip of lead wire indicates that the lead wire, at least occasionally, was used in association with the windows.

Others are re-purposed Type 1 window comes. In these cases it appears the leaves of the comes were separated with a knife, with a thin ridge of the central heart of the came surviving along the flattened side of the leaf. In some cases the reeding present along the central heart can still be seen. These may be from leftover comes that were never used or from comes that were stripped of the windows during repairs. It seems that some of these were then reused as lead wire, possibly as architectural fixings. Others appear to have been bundled and twisted together in a way as to make them unusable, possibly suggesting they were set aside and stored possibly to be melted down and reused at a later date.



Twisted lead strips

E4468:2:186 Lead sheet fragment

53mm L., 49mm W., 1mm T.; 18g weight
Irregular shaped fragment of a lead sheet with a slight curve. No edges are apparent, however the curve does end 4mm before one of the sides, giving way to a level section. One lump of additional lead is visible on the underside of the curve. A second small lump is visible on the upper side of the curve. Both are 2mm in height. The purpose of this object is unclear, though it may have been used as lining on the roof or windows or elsewhere within the building.

E4468:3:146 Lead strip

64mm L., 4mm W., 2mm T.; 8g weight
Strip of lead that is a D-shaped in profile. One end has been clipped straight across the wire, the other is broken. The wire is bent and twisted slightly along its length.

E4468:3:147 Lead strip

59mm L., 15mm W., 1.75mm T.; 5g weight
L-shaped length of flattened lead strip. The wire is 5mm in width and is a D-shaped in profile. The wire is bent and twisted along its length and the edges exhibit some denting.

E4468:3:160 Lead sheet fragment

39mm L., 29mm W., 0.5mm T.; 1g weight
Very thin scrap of lead/tin. All edges of the fragments are damaged and uneven. Irregular sub-triangle in shape. The sheet is crumpled and there are no identifiable markings or suggestions of what it could have been used for. Possibly used as a lining or as a repair.

E4468:4:173 Lead sheet fragment

33-40mm L., 22-29mm W., 0.75mm T.; 8g weight
Very thin fragment of folded lead sheet. Distinct fold on

one side appears intentional suggesting the lead was used as a lining for an object c. 33mm in width. The fragment is contorted and broken on all other sides. Contorted sub-rectangle in shape. The original function of the sheet is unclear, however it appears to have functioned as a lining.

E4468:4:174 Lead sheet fragment

72mm L., 6-40mm W., 0.6mm T.; 9g weight
Very thin fragment of folded lead sheet. Very fragmentary, now in three pieces. Crumpled sheet of lead with a distinct fold curved fold, not folded flat. Jagged broken edges on all sides. Likely to be a fragment of lead lining, though the fragmentary nature of the object does not allow for further interpretation.

E4468:6:4379 Lead strip

114mm L., 3mm W., 0.52mm T.; 1g weight
Thin strip of lead. Varies in width along its length, and has a twist in the centre. Waste trimmed section of lead sheeting. Some corrosion apparent and numerous dents.

E4468:6:4380 Lead hook?

34mm L., 3.5mm W., 2mm T.; 2g weight
Bent piece of lead wire tapered to a rounded point at one end and clipped or broken straight at the other. Waste piece. The wire is slightly domed on top, flat on the bottom and has two straight sides. Some scoring on the inside of the curved bend suggesting it maybe the end of a straight hook or some form of fastener.

E4468:6:4382 Lead waste

28mm L., 18mm W., 9mm T.; 9g weight
Melted lump of lead. Two bulbous lumps of melted lead connected with a band of lead at one end. The band of lead is possibly part of the original object that was melted to the current irregular form.

E4468:6:4383 Lead strip

60mm L., 6mm W., 2mm T.; 4g weight
Band of lead. Clipped at a 40-degree angle at one end, broken at the other. Quite corroded. Trapezoid-shaped in profile.

E4468:6:4382 Twisted lead strip

20mm L., 13mm W., 9mm T.; 6g weight
Band of lead twisted into a rough ring. Tapers to a point at one end, clipped with a straight edge at the other. Encloses an area of 10mm x 4mm. The band is triangular in profile and 5mm x 2.75mm in size. Informal fixing or fastener.

E4468:6:4383 Corroded lead object

47mm L., 6mm W., 2mm T.; >1g weight
Twisted and corroded lead object with mortar attached to its surface. Possibly originally part of a came, however too damaged to say for certain.

E4468:6:4384 Lead off-cut

38mm L., 5mm W., 1mm T.; >1g weight
Waste lead off-cut. Roughly cut along one side, likely to have been trimmed from a lead sheet.

E4468:6:4385 Lead strip

24mm L., 4mm W., 1.5mm T.; >1g weight
Short strip of lead. D-shaped in profile. Broken at both ends. Twist at one end.

E4468:6:4386 Scrap of lead sheet

30mm L., 7.5mm W., 0.75mm T.; >1g weight
Bent scrap of lead sheet waste, roughly cut edge along one side.

E4468:6:4387 Scrap of lead sheet

38mm L., 4mm W., 0.75mm T.; >1g weight
Off-cut scrap of thin lead sheet.

E4468:6:4388 Bent strip of lead

52mm L. 3.5mm W., 0.75-2mm T.; 3g weight
Bent strip of lead. Tapers to a thin chisel-shaped point at one end, broken at the other. Rectangular in profile. Probably a waste off-cut.

E4468:6:4389 Lead waste scrap

21mm L., 6mm W., 4mm T.; >1g weight
Rough scrap end of lead waste, possibly cut from a lead strip with a triangular profile.

E4468:6:4408 Strip of lead

50mm L., 5mm W., 2.15mm T.; 4g weight
Bent strip of lead. D-shaped in profile. Clipped at one end, tapered to a rounded point at the other.

E4468:6:4409 Strip of lead

79mm L., 3.5mm W., 2.15mm T.; 5g weight
Strip of lead. D-shaped in profile. Clipped at one end, broken at the other. Possible lead wire.

E4468:6:4410 Strip of lead

49mm L., 3.5mm W., 2.15mm T.; 3g weight
Strip of lead bent into a U-shape. D-shaped in profile. Clipped at both ends. Possible lead wire.

E4468:6:4411 Strip of lead

62mm L., 4mm W., 1-8-2.2mm T.; 3g weight
Strip of lead with a twist at one end. D-shaped in profile. Clipped at both ends.

E4468:6:4412 Strip of lead

25mm L., 20mm W., 10mm T.; 5g weight

Strip of lead bent into a loose loop. D-shaped in profile. The strip was originally 74mm in length, 4mm in width and 2mm in height. Possible informal fixing.

E4468:6:4413 Two strips of lead twisted together

93mm L., 10mm W., 21mm T.; 8g weight
Two strips of lead twisted together. The longer strip also has a piece of lead came soldered onto it 10mm x 100mm x 1mm in size. The end of the two strips that are twisted together are clipped, the other two ends are broken. The strips are D-shaped in profile and measure 3.5mm in width and 2.1mm in height. Possibly added at some point to give more support to the window comes, a repair.

E4468:6:4414 Two strips of lead twisted together

86mm L., 17mm W., 7mm T.; 5g weight
Two strips of lead twisted together. D-shaped in profile and measuring 4mm in width and 1.8mm in height. One is tapered to a rounded point at the end where it twists around the second strip while the other is clipped at that end. Both are broken at the other ends.

E4468:6:4415 Lead fixing/ fastener

75mm L., 5-10mm W., 3-4mm T.; 6g weight
Re-used piece of window lead came. A 40mm section at one end has been roughly flattened and two rows of pin holes 2mm apart run along this section 1mm from the edges. The pin holes are 0.5mm in diameter. The opposite end of the object has been twisted tightly in a corkscrew. The flattened end appears to have been broken. This object was possibly used as a repair in furniture upholstery, with the pierced end for attaching the material and the twisted end to hold the object in place.

E4468:6:4417 Scrap of lead sheet

21mm L., 7mm W., 0.75mm T.; 1g weight
Small scrap of lead sheet. Straight sided along one side, rough edge on the other. One of the ends appears cut, the other broken. Waste scrap.

E4468:6:4614 Lead object

96mm L., 82mm W., 21mm T.; 164g weight
Composite object with three pieces of lead 1-4mm in thickness held together with thin sections of 1mm thick lead. Two of the sheets are folded to make a 50-degree angle, with the third attached with an ad-hoc fitting to the rear of the second sheet and the three connected at the base with the thinner sheet. A small protrusion 5mm in height and 3mm in diameter extends from the third section and is clearly a fitting. The three pieces were clearly designed to fit together. Possible joint of lead sheet lining at a corner or a repair, though this is unclear.

E4468:6:4615 Lead lining

112mm L., 45mm W., 1-3mm T.; 66g weight
Slightly twisted fragment of corrugated lead. One side of the fragment is finished with a raised lip, the other three sides are broken. The upper surface of the fragment has two distinct ridges caused by intentional corrugations in the sheet, with the three ridges evident (including the edge) being 16mm on average. The upper surface of the strip has a smoother finish. Architectural, fragment of roof or window lining.

E4468:6:4616 Lead waste

64mm L., 43mm W., 1-5mm T.; 35g weight
Irregular flat piece of lead waste. Irregular flattened lump of lead with rounded edges and two small holes within it. No evidence of the piece being worked and the surface of the piece is rough. One small section of the piece has

a sub-rectangular section missing, however this looks incidental rather than clipped and the edges are rounded.

E4468:6:4617 Lead waste

88mm L., 53mm W., 3-15mm T.; 205g weight
Lump of lead with evidence for it having been formed by melting lead sheeting together. Parts of the object show that the original lead sheets have not been fully melted together, while other parts are completely combined. Irregular in shape. Probably a lump of waste lead, or lead melted down and kept for re-use, although it could also be part of a repair.

E4468:6:4618 Lead lining

55mm L., 52mm W., 1-1.5mm T.; 67g weight
Fragment of lead sheeting. Appears to be a fragment of the join between two sections of lead sheeting sub rectangular in shape. One side appears to be finished with a rounded corner at the end of this. The other sides are damaged. The complete side has a flat section at a c. 60-degree angle rising up for 5mm. The top of the fragment is poorly finished and the piece looks functional rather than aesthetic. Architectural, possibly window or roof lining.

E4468:6:4619 Lead waste

42mm L., 20-34mm W., 1-4mm T.; 21g weight
Irregular flat piece of lead waste. Irregular flattened lump of lead with rounded edges and three small holes within it. No evidence of the piece being worked and the surface of the piece is rough.

E4468:6:4620 Lead strip

61mm L., 1.5-3mm W., 0.4mm T.; >1g weight
Curved thin strip of lead with a small curl at one end. Varies in width along its length, being wider in the central part. Waste trimmed section of lead sheeting. The small tightly curled end appears to be where the strip was removed from the main piece. Smooth surface with no corrosion apparent. Some striations apparent on the surface of the strip.

E4468:6:4622 Lead scrap

55mm L., 1-1.5mm W., 0.4mm T.; >1g weight
Slightly curving thin strip of scrap lead with a small twist and curled section at one end. Varies in width along its length, being wider in the central part. Probable waste from a trimmed lead sheet, with the twist and curled part at one end being where the strip was removed from the main piece. Smooth surface with no corrosion apparent. Some striations apparent on the surface of the strip.

E4468:6:4623 Lead strip

34mm L., 11mm W., 3mm T.; 2g weight
Flattened loop of lead wire (3mm x 2mm in thickness) with one end clipped and the other broken. The wire is a flattened oval in section with one side flat and the opposite side curved. The clipped end has been intentionally cut at a 30-degree angle. The broken end indicates that originally the wire twisted behind the clipped side. Unclear what function the object would have served, possibly an informal fitting or a tidying up of the end of a section of lead wire.

E4468:6:4624 Lead washer?

13mm ext. dia., 8mm int. dia.; >1g weight
Ring of lead, possibly a washer, however appears more likely to be an off-cut from extracting a smaller lead disc. Cut from a sheet of lead with crude edges, the band of lead is 2-3mm in width and 0.75mm thick. There are two small nicks on the internal edge that appear to be from

the tool used to cut out the internal disc of lead. The poor finish on the edges of the object suggest that it was not intended as a finished piece (i.e. washer) and is more likely to be a piece of lead waste. Broken at one end, possibly in the removal on the central lead disc.

E4468:6:8818 Strip of lead

54mm L., 3.5mm W., 2mm D.; 2g weight
Strip of lead wire, D-shaped in section. Clipped at both ends.

E4468:6: 8819 Strip of lead

43mm L., 4-5.6mm W., 2.1-3.3mm D.; 4g weight
Strip of lead, appears to have been bitten or chewed, possibly by a rodent, surface of the lead is puck-marked and uneven.

E4468:7:428 Strip of bent lead

47mm L., 4mm W., 2mm T.; 3g weight
Bent strip of lead. D-shaped in profile. Clipped at one end, broken at the other. Bent into a squared-off U-shape. Dark grey colour.

E4468:7:429 Strip of lead

40mm L., 4mm W., 2mm T.; 3g weight
Strip of lead. D-shaped in profile. Clipped at one end and twisted off at the other. Dark grey colour.

E4468:7:430 Strip of lead

24mm L., 4mm W., 2mm T.; 2g weight
Short strip of lead. Clipped at both ends. Dark grey colour.

E4468:7:431 Strip of lead

58mm L., 3mm W., 2mm T.; 1g weight
Strip of lead, possibly wire. D-shaped in profile, though the domed section is not smooth like the other lead strips and has four facets running along its length. Clipped at one end and twisted off at the other. Dark grey colour.

E4468:7:432 Strip of lead

34mm L., 3-4mm W., 1mm T.; 1g weight
Flat strip of lead. Possible off-cut from a lead sheet. Light grey colour.

E4468:7:433 Strip of lead

35mm L., 3mm W., 1.5mm T.; 1g weight
Strip of lead, looped at one end. D-shaped in profile. Clipped at the looped end. The loop is small, made to tidy the end. Broken at the other end. Dark grey in colour.

E4468:7:434 Twisted lead strip

19mm L., 4mm W., 1.75mm T.; 1g weight
Strip of lead twisted along its length. D-shaped in profile. Clipped at one end, twisted off at the other. Dark grey in colour.

E4468:7:435 Strip of lead twisted into a loop

39mm L., 29mm W., 4mm T.; 10g weight
Strip of lead in a sub-square loop with the ends twisted together to complete the loop. Strip is D-shaped in profile. The ends are both clipped. The strip measures 4mm x 2mm. The loop is broken at the top. Dark grey in colour.

E4468:7:436 Hooked strip of lead

21mm L., 5mm W., 1.5mm T.; 4g weight
Strip of lead bend into two hooks, one smaller one at one end with a 4mm wide and 1.5mm thick band tightly wrapped around it. The other hooked end is longer and finished with a rounded point. Possible fixing. Dark grey in colour.

E4468:7:437 Waste strip of lead
83mm L., 4-8mm W., 2mm T.; 12g weight
Irregularly cut strip of lead. Possibly off-cut from thick lead sheet. Dark grey colour.

E4468:7:438 Thin lead strip scrap
24mm L., 1.6mm W., 0.6mm T.; >1g weight
Small scrap of off-cut from thin lead sheet. Mid-grey colour.

E4468:7:439 Lead waste
47mm L., 24mm W., 12mm T.; 19g weight
Globular lump of lead waste. Slight yellowish sheen apparent on parts of the surface.

E4468:7:480 Lead waste
35mm L., 30m W., 4-5mm T.; 18g weight
Irregular lump of melted lead waste. Partially flat on one side with two small protrusions.

E4468:7:481 Lead waste
38mm L., 3-12mm W., 1-6mm T.; 3g weight
Irregular lump of melted lead waste. Partially flat on one side with one small protrusion.

E4468:7:482 Scrap of lead
21mm L., 5mm W., 1mm T.; >1g weight
Scrap of lead. Corroded and broken.

E4468:7:483 Strip of lead
80mm L., 3mm W., 2mm T.; 4g weight
Strip of lead. D-shaped in profile. Clipped at one end and broken at the other.

E4468:9:233 Re-used lead came?
39mm L., 3-6mm W., 3.3-1.75mm T.; 1g weight
Small section of unidentified lead came flattened and shaped at one end and twisted tightly for final 8mm of the other end. The twisted end is cut straight, the final 23mm of the other side is flattened and tapers slightly. Possibly an informal turning device or a key used to tighten something.

E4468:9:234 Lead rod
177mm L., 4.4-7mm Dia.; 59g weight
Tapering rod of lead, slightly bent along its length. Cut roughly at the wide end at a 20-degree angle, slightly rounded tip at the other. Bar of lead possibly for use in soldering or to be cut for lead shot.

E4468:9:235 Lead strip
67mm L., 4mm W., 1.75mm T.; 4g weight
Strip of lead, D-shaped in profile. Clipped at one end and broken at the other.

E4468:9:236 Lead strip
42mm L., 4mm W., 1.75mm T.; 3g weight
Strip of lead, D-shaped in profile. Clipped at one end and broken at the other.

E4468:9:237 Lead strip
28mm L., 5mm W., 2mm T.; 2g weight
Slightly curled strip of lead. Flattened D-shape in profile. Clipped at both ends.

E4468:9:238 Lead strip
49mm L., 5mm W., 1.5mm T.; 4g weight
Strip of lead. Trapezium-shaped in profile with two slightly raised ridges at the edge on the upper side. Slightly twisted at one end and broken. Clipped at the other end.

E4468:9:239 Lead strip
80mm L., 3.75mm W., 2mm T.; 4g weight
Bent strip of lead. D-shaped in profile. Broken at one end, rounded at the other.

E4468:9:240 Lead strip
155mm L., 5mm W., 2mm T.; 8g weight
Bundled strip of lead. Corroded. Twisted and bent along its length. Broken at both ends.

E4468:9:241 Lead scrap
13mm L., 12mm W., 2.5mm T.; 1g weight
Bundled and compressed strip of lead scrap. Trimmed from a thin lead sheet, strip 2mm in width and 0.6mm in thickness.

E4468:9:242 Lead waste
18mm L., 14mm W., 9mm T.; 7g weight
Lump of partially melted lead waste.

E4468:9:243 Lead waste
26mm L., 3-10mm W., 1-2.5mm T.; 2g weight
Irregular piece of partially melted lead waste.

E4468:9:244 Lead scrap
22mm L., 3mm W., 0.5mm D.; >1g weight
Scrap of thin sheet lead.

E4468:9:245 Lead scrap
20mm L., 6mm W., 1mm T.; >1g weight
Scrap off-cut of lead sheet. Irregular shape.

E4468:9:246 Lead strip
75mm L., 3.5mm Dia.; 6g weight
Lead strip broken at both ends. Possibly rolled lead window came but too tightly rolled to say with certainty. Two possible seams apparent. Bent into a hook at one end.

E4468:9:283 Lead lining
31mm L., 22mm W, 1mm T.; 7g weight
Fragment of corrugated lead sheet, broken on all sides. There is one ridged corrugation apparent, with 3mm in height between the top of the ridge and the base of the trough. Some adhesion on the upper surface gives it a rough finish, underside is smooth. Irregular sub-rectangle in shape. Architectural, probably a fragment of roof or window lining.

E4468:9:284 Lead object
21mm L., 11.5mm W., 1-2mm T.; 1g weight
Pointed-oval shaped loop of lead cut from a flat sheet of lead. A sub-oval section in the centre measuring 13.8 x 5mm has been removed turning the object into a loop. The finish on the two sides and the edges of the cuts is rough and somewhat uneven. One end of the object is pointed while the other is rounded. The object may be a fitting of some sort or a loop for attaching straps. May also be a weight.

E4468:9:3529 Metal waste, lead (?)
39mm L. 8mm W., 5mm T.; 7g weight
Elongated lump of waste metal, possibly lead. Puck-marked on surface. Very strong- possibly not lead.

E4468:9:3568 Lead strip
39mm L., 4.5mm W., 1.5mm D.; 1g weight
Curving strip of lead, clipped diagonally at one end, twisted and broken off at the other. Possibly originally D-shaped in section, however a distinct linear depression is apparent along one side.

Lead weights and ingots

Forty-four lead discs or fragments were identified in the excavation. In the early medieval period the Vikings used lead alloy weights to weigh silver. By the 17th century commerce had become somewhat more complex. Due to the influx of a variety of foreign currency and England's unstable monarchs, coinage was constantly changing. The value had to be determined in another way, sometimes by metal, other times by weight. Coin weights had particular values etched into them, but most of the weights from Rathfarnham are blank. Some of the weights were marked however, for example one (E4468:9:274) copper alloy disk with a raised rim has the letters 'C O' and other illegible markings.

If not weights, these unmarked lead discs may be related to the musket balls and shot being produced at the castle. It is also possible that these objects were weights on their way to becoming recycled as shot. They may also be



Lead or brass weight with C O mark 9:274

connected with the lead window comes which were used to fit the castle's sixteenth-century casement windows. There is very little evidence

Selection of lead weights, ingots and cut fragments, photograph by Damian Shiels





Lead ingot 9:279

for similar solid and unmarked lead alloy discs of this kind in the archaeological record. Their use is as yet, unknown.

These are further described (and measured more accurately) in the military report by Damian Shiels (2015).

E4468:3:161 Lead circular weight

Discoid form, roughly manufactured.
Dia. 32mm, Tk. 7mm; 48g weight

E4468:4:171 Lead weight

Possible plum-bob, plummet or sounding weight? Long rectangular shape; slightly splayed at its terminal. Rectangular in section. Poor condition.
L. 55mm, W. 18.5mm, Tk. 14mm; 70g weight

E4468:4:172 Lead circular weight

Discoid form, roughly manufactured.
Dia. 31mm, Tk. 7mm; 48g weight

E4468:6:4596 Lead circular weight

As E4468:3:161.
Dia. 30mm, Tk. 9mm; 58g weight

E4468:6:4597 Lead circular weight

As E4468:3:161.
Dia. 32mm, Tk. 7mm; 45g weight

E4468:6:4598 Lead sub-circular weight

As E4468:3:161.
Dia. 29.5mm, Tk. 8mm; 43g weight

E4468:6:4599 Lead sub-circular weight

As E4468:3:161.

Dia. 38.5mm, Tk. 6mm; 71g weight

E4468:6:4600 Lead circular weight

Discoid form, roughly manufactured. Indecipherable markings on one side.
Dia. 39mm, Tk. 7.5mm; 76g weight

E4468:6:4601 Lead weight

Tear drop shape; globular form at base, tapering to a point at the top. Rounded on face and flat at the back.
L. 45.5mm, W. 35mm, Tk. 9mm; 61g weight

E4468:6:4602 Lead circular weight

As 3:161.
Dia. 33mm, Tk. 9mm; 66g weight

E4468:6:4603 Lead circular weight

Discoid shape, sides are slightly splayed.
W. 29.5mm, Tk. 8mm; 58g weight

E4468:6:4604 Lead circular weight

As 3:161.
Dia. 32mm, Tk. 7.5mm; 51g weight

E4468:6:4605 Lead sub-circular weight

Roughly made. Raised edges.
Dia. 37mm, Tk. 4.5mm; 38g weight

E4468:6:4606 Lead circular weight

Similar in form to 4603.
Dia. 32mm, Tk. 10mm; 68g weight

E4468:6:4607 Lead circular weight

As 6:4597.
Dia. 30.25mm, Tk. 7mm; 43g weight

E4468:6:4608 Lead circular weight

As E4468:3:161.
Dia. 33.5mm, Tk. 8.5mm; 59g weight

E4468:6:4609 Lead circular weight

As 3:161. Dia. 34.5mm, Tk. 11mm; 87g weight

E4468:6:4610 Lead halved circular weight

Flattened and intentionally cut in half. Lead shot
Original dia. 37mm, Tk. 3.5mm; 28g weight

E4468:6:4611 Lead ingot

Rectangular shape, cut at either ends. Possible weight or could have been cut and melted to make musket balls.
L. 35mm, W. 3.2mm, Tk. 4mm; 19g weight

E4468:6:4612 Lead alloy object

Cut tubular piece of lead, round in section at base, but circular at top. Crudely made. Possible weight or musket bullet?
Dia. 10.5mm, L. 19mm; 18g weight

E4468:7:516 Lead circular weight

As E4468:3:161.
Dia. 32mm, Tk. 6mm; 46g weight

E4468:7:517 Lead ingot

Square in section. Cut on both ends. Possibly used to cut into pieces and melt down for production.
L. 57mm, W. 14.6mm; 70g weight

E4468:7:518-528 Lead cut fragments

Cut from a flattened sheet. Prepared for some sort of production. For musket balls? Lead shot? Weights?

W. 15mm-9.5mm, L. 19.5-15.5, Tk. 3.5mm-2mm; 3 = 5g, 6 = 7g, 1 = 8g, 1 = 10g weight

E4468:9:274 Lead or brass circular weight with marks

Lead or copper alloy weight? Circular cast disc impressed with "C C", Charles II? Front has raised ridge along its edge. Back is flat.

Dia. 28.5mm, Tk. 4mm; 14g weight

E4468:9:275 Lead circular weight

Flattened. Raised edges. As E4468:6:4605.

Dia. 35mm, Tk. 4mm; 34g weight

E4468:9:276 Lead circular weight

Flattened. Raised edges. As E4468:6:4605.

Dia. 35mm, Tk. 4.5mm; 35g weight

E4468:9:277 Lead sub-circular weight

Sub-circular lead weight

Dia. 32mm, Tk. 4mm; 32g weight

E4468:9:278 Lead sub-circular disc

Flattened to form an uneven surface. Similar form as 6:4610, except still complete.

Dia. 42mm, Tk. 4.3mm; 32g weight

E4468:9:279 Lead ingot

Rectangular shaped piece of lead, prepared for some sort of production; lead shot or musket balls?

L. 46mm, W. 26mm, Tk. 6.5mm; 61g weight

E4468:9:280-282 Lead cut fragments

As E4468:7:518-528.

W. 15.5mm-14mm, L. 19-17mm, Tk. 4mm-5mm; 1= 11g, 2= 8g weight



Lead shot

Lead gunshot

The lead gunshot artefacts are described below, in the Report on the Military Artefacts by Damian Shiels.

Lead projectiles, photograph by Damian Shiels



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Pewter

Antoine Giacometti and Alva Mac Gowan

A number of spoons and knives, some of silver or gilded in gold, were recovered from the excavation. These included a late 17th century complete pewter spoon (E4468:2:201) with the initial 'W' engraved onto its finial and a maker's mark on the underside at the base of the stem. It has a trefid pattern, which generally dates from the 1660s (when it was introduced by the English court) to the early 18th century.

This pewter trefid spoon c. 1680 to 1710 with a plain back, appears may be tinker-made item. Tinkers carried a set of alphabetical stamps to apply initials on the spot. A number of W's are recorded at Rathfarnham during the 17th and 18th centuries, for example Worth (leased the castle in 1705) and Wharton (married into the family in the early 18th century).

Complete pewter spoon E4468:2:201

Oval bowl with rat-tail support, trefid shaped stem with initial "W" engraved onto its finial. Maker's mark on the underside at the base of the stem. The trefid pattern was introduced when the English court returned from exile in 1660. It was the earliest English flatware pattern in which the stems of both the spoon and fork were made to match. Trefid cutlery generally dates from 1660s to early eighteenth century. This pewter trefid spoon c. 1680 to 1710, looks like a possible tinker-made item as they carried a set of alphabetical stamps to apply initials on the spot, and the back of the spoon is quite plain, without an ornamented rat-tail bowl support (Simon Moore pers.comm.)

L 19.1mm, bowl: W 45.1mm, stem: W 9mm, final: W 20.05mm

Pewter plate rim fragment E4468:7:3086

Curved rim fragment of plate with a rounded raised rim, possibly pewter? Shiny light yellow sheen on one side. The object has been broken and appears to have been melted, possibly in an attempt to repair it in the past. The melted section is rough and grainy, almost like mortar. Similar material and possibly same object as E4468:8:38. The rear of the object is corroded. L: 64mm, W: 35mm, Tk: 2-2.85mm, 26g weight.

Pewter plate fragment E4468:8:38

Rim fragment, possibly from a pewter eating plate, with a rounded raised rim. The object has been broken, slightly contorted and appears to have been melted, possibly in an attempt to repair it in the past. The melted section is rough and grainy, almost like mortar. Similar to

E4468:7:3086 and possibly part of the same plate. L 34mm, W 26.5mm, Tk: 1.5-2.8mm, 8g weight.

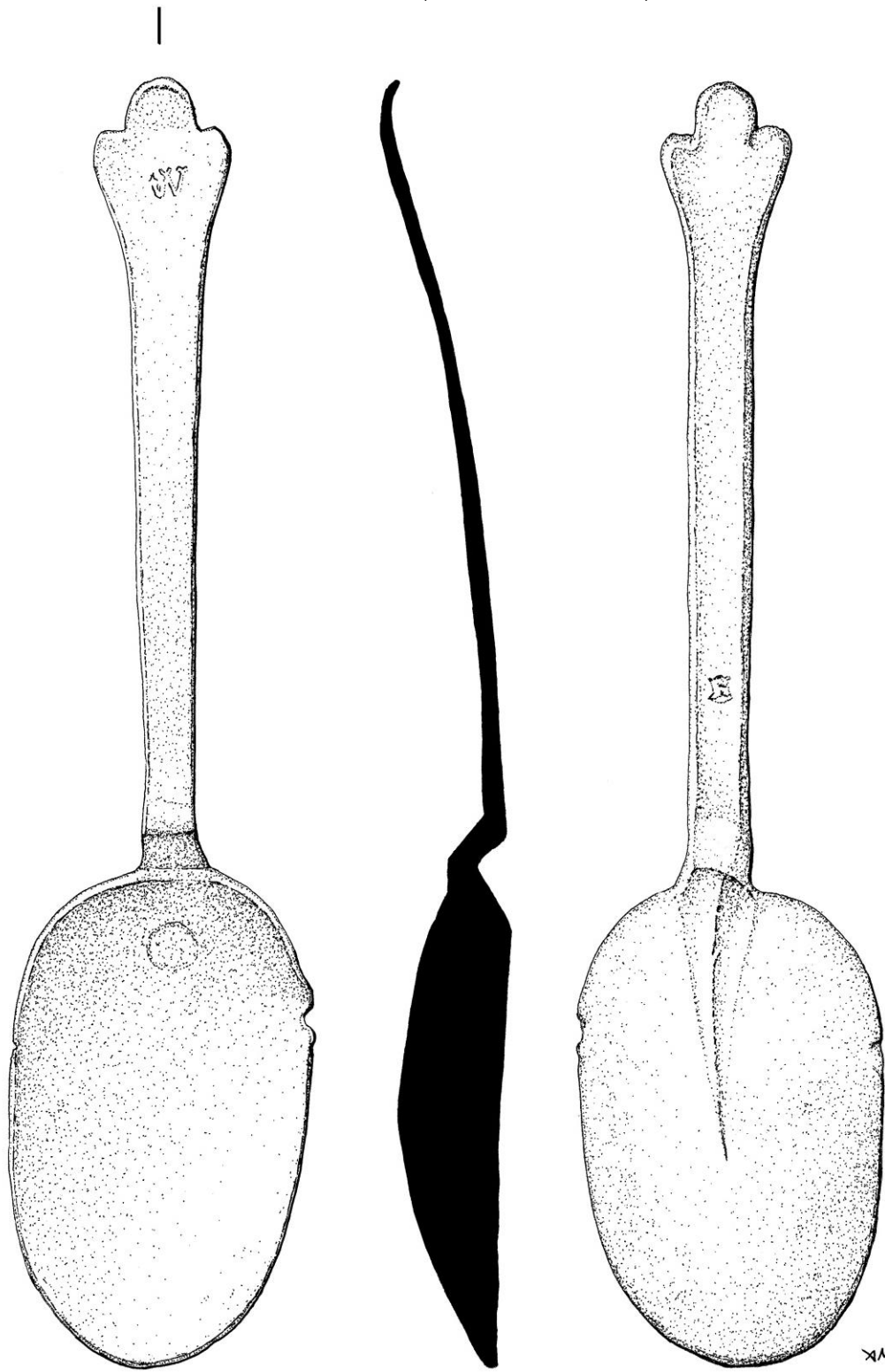
Pewter plate fragment? E4468:9:410

Curved rim fragment of plate with a rounded rim 3.5mm in width protruding 1.5mm from one side. On the opposite side a sunken 5mm wide band runs parallel to the rim 6mm from the edge with a second narrow sunken band 1mm in width and 1mm from the first. The object has been broken and the edges of the breaks are rough. There is a metallic sheen on the surface of the metal. L: 32.5mm, W: 29mm, Tk: 1.6-3.6mm; 11g weight.



Pewter spoon 2:201





Tin

Antoine Giacometti

Dredging box

Fragments of a tin vessel and tin waste may be from a dredging box. A dredging box (also known as 'drudging boxes' or 'drudgers') was typical 18th century kitchen item which was used to cover a box of seasoned flour or bread-crumbs, so that contents could be sifted over the roasting joint (Pennel 1998, 209). Kitchen tinwares are recorded in household inventories from the 1660s, can become widespread after 1700. These use of dredging boxes corresponds with a growing predilection for roasted meat and access to cheaper seasonings from 1700 (ibid).

Dredging boxes are typically made from brass or tin-plated iron, and tin was preferred in the early 18th century due partly to its non-corroding, vermin-proof qualities and similarity in colour silver and high-quality pewter (ibid).

E4468:6:4625 Perforated metal sheet

62mm L., 46mm W., 0.8-1.2mm T.; 18g weight
Curved section of perforated metal sheet, originally a perforated oval-shaped metal sheet. Slightly bent in a number of places, though would have been flat originally. Possibly a strainer, sieve or drain cover. The perforations are 1.2-2mm in diameter. They are not regularly punched through the sheet in an ordered pattern. There is an encrusted deposit attached to the object in places, more prevalent on one of the sides. Possibly made of lead but uncertain at present.

E4468:6:4626 Perforated metal sheet

55mm L., 33mm W., 0.8-1.2mm T.; 7g weight
Curved section of perforated metal sheet, originally a perforated oval-shaped metal sheet, re-fit with E4468:6:4625. More corroded than the other side of the object with some small sections of metal missing. Again the perforations are uneven in distribution and size. There is an encrusted deposit attached to the object on the same side as seen in the first portion. The complete object would have been 81mm L. and c. 58mm W. Possibly a strainer, sieve or drain cover. Possibly made of lead but uncertain at present.

E4468:6:4627 Waste tin

77mm L., 33mm W., 1-2mm T.; 10g weight
Irregular flattened piece of metal waste with jagged edges. The object appears to be metal waste with a



An illustration of an 18th century dredging box (on extreme left of mantelpiece): engraving facing title-page of Martha Bradley, *The British Housewife*, London (c.1760) in Pennel 1994, 210

fibrous texture. A metallic sheen from heating is apparent on the upper surface while the lower side is more globular in texture. There are two small perforations in the waste c. 1mm in diameter, though this is likely to be incidental. Weakly magnetic, possibly tin waste.

E4468:6: 8820 Scrap of tin

19mm L., 5.5mm W., 1.5mm D.; >1g weight
Small scrap of tin, possibly part of a tin vessel.

E4468:6: 8821 Part of tin vessel

21mm L., 12mm W., 5mm D.; 1g weight
Small fragment of tin vessel, curved section from the top or base of the tin with part of the wall of the vessel surviving. Curvature of the rim/base suggests the object would have had a relatively small diameter.

E4468:7:484 Tin waste?

39mm L, 21mm W., 1-3mm T.; 4g weight
Lump of possible tin waste. Flat on one side.

E4468:7:485 Irregular tin ring?

19mm L., 17mm W., 0.75-1mm T.; 2g weight
Irregular sub-circular tin (?) ring or washer. Formed from unmoulded molten metal. Encloses an area on 9mm x 5mm. Flat on one side.

E4468:7:486 Irregular tin waste?

19mm L., 14mm W., 0.6mm T.; >1g weight
Small irregular piece of tin (?) waste in an irregular ring shape. Flat on one side. The opposite side has an impressed fingerprint. The central area, measuring 8mm in diameter has been removed unevenly. Yellowish metallic sheen on both sides.

Unidentified tin fragments

E4468:6:4381 Metal waste

50mm L., 46mm W., 11mm T.; 48g weight
Irregular lump of waste metal, does not appear to be lead. Not magnetic. Melted down sheet metal and metal rod forming an irregular-shaped lump. Slight gold-coloured sheen on the base of the lump.

E4468:6:4621 Unidentified metal curved band

29mm L., 19mm W., 1.75mm T.; >1g weight
Curving metal band measuring 2.3mm in width and 1.75mm in height broken at one end. Curves in at one end to give it a G-shape, with the tail end of the G being the finished end. Possible that the other end also turned inwards before being broken. Metal is not lead or iron and exhibits some corrosion. The complete end is not well finished, possibly originally intended to be hidden. The piece may be a loop for attaching a strap or some other fitting. Does not appear to be tin, lead or iron.

E4468:9:3529 Lead? Fragment

Possible curved fragment of lead or similar metal (silver?? Pewter? Tin?) unidentified shape. Possible lead waste or lead fragment for a musket ball.
L. 40mm, W. 3mm, Tk. 3mm; 1= 6g weight

Iron and Steel

Antoine Giacometti, with Damian Shiels on the armour

Armour

The armour breastplate was examined by Damian Shiels of Rubicon Heritage, and the following is an extract from his report Report on the Military Artefacts from Rathfarnham Castle, Co. Dublin (2015).

The wrought iron armour (E4468:6:1) uncovered during the excavation is a harquebusier breastplate and dates to the middle of the 17th century. The armour is heavily corroded, which has obscured or destroyed any identifiable armourer's marks. This has also concealed traces of attachments and fittings. The breastplate consists of a single piece body with a medial ridge, which terminates with a vestigial peascod

over a pronounced flange, which is some 3.5 cm in depth. The breastplate has a raised neck of c. 16 cm diameter finished with a simple turn, as is the case with the arm openings which are c. 18 cm in maximum diameter on the obverse side. The armour is c. 47.5 cm in length from neck to vestigial peascod and 33 cm in diameter from waist to waist. The waist itself is c. 13.5 cm in length. It is of note that the medial ridge is not proportionately placed in the centre of the breastplate, it being somewhat skewed to the right; as a result there is c. 15 cm between the ridge and the right waist line but c. 18cm between the ridge and left waist line. The armour itself survives to a thickness of c. 0.6 cm. A bullet-hole of c. 1.2 cm maximum diameter is located on the right abdomen of the armour; although now penetrating all the way through the breastplate, this is a symptom of corrosion and the conservation process, as images taken during excavation demonstrate that upon discovery the hole did not fully penetrate the metal.

Armour breastplate 6:1



The earliest armour set of this type is thought to have been made around 1635 for the future Charles II, then Prince of Wales (Richardson 2004, 11). Although the Rathfarnham example would originally have been composed of a harquebusier's pot (helmet), breastplate and backplate, only the breastplate was recovered during the excavations. The breastplate and backplate, referred to collectively as the cuirass, were attached to each other by means of leather shoulder straps with iron



Armour breastplate 6:1

plates or scales attached for protection (ibid, 14). These straps were attached by means of mushroomheaded studs at either side of the breastplate (which do not survive on the Rathfarnham example), that would connect with key-hole slots on the terminals of the shoulder straps (ibid, 12). Often a leather belt was also worn around the waist. A number of leather and metal pieces found in association with the Rathfarnham breastplate are likely to represent the remains of these fittings and attachments (notably E4468:6:3, E4468:6:4, E4468:6:5, E4468:6:7 and E4468:6:8). As they were still awaiting final conservation at the time of analysis their association could not be confirmed, but a visual inspection of leather fragments such as E4468:6:4 suggested that they match the form of what would be expected. It is likely that the remains represent both the leather straps and some of the metal plates originally stitched onto them. The bullet-hole in the right abdomen is not a result of combat but rather is a proofing mark; this involved the firing of a bullet at the armour in order to supply 'proof' that it could withstand pistol and caliver shot (ibid, 15).

This form of armour continued in production into the late 17th century. In the later years of the reign of Charles II and into that of James II the armour waistline dropped, matching contemporary male fashion, which favoured a deeper waist (ibid). Undoubtedly earlier 17th century pieces remained part of armouries throughout the three Kingdoms until well into the latter part of the century. The armour was designed to be worn over a leather buffcoat by a harquebusier. These were mounted troops carrying a 'harquebus' a form of carbine that was lighter than a musket (Peterson 1964, 267). In his 1644 treatise 'The Young Horse Man, Or, The Honest Plain Dealing Cavalier', John Vernon described the appearance of the harquebusier:

The Harbuyusers and Carbines arming is chiefly offensive, his defensive Arms, are only an open Caske or Head-peece, a back and brest with a buffe coat under his armes; his offensive Armes are a good Harquebus, or a Carbine hanging on his right side in a belt by a sweble, a flask and

Carthareg case, spanner, and t[w]o good firelock pistols in houlsters. At his saddle a good stiffe sword sharp pointed, and a good poll-axe in his hand, a good tall horse of fifteen handfuls high, strong nimble, with false raines to your bridle made of an Iron Chain as the former. (Tincey 1993, 42).

Among a list of items issued to the New Model Army in 1645/6 were 'two hundred armes backs brests and potts at 20s per suite' (Tincey 2003, 12). Although it does not seem to have been universally worn, such armour remained an important military accoutrement throughout the wars that engulfed the kingdoms during this period.

The Rathfarnham harquebusier breastplate is similar in style to those from the Littlecote House Collection, the most significant surviving armoury of the English Civil War and it is likely to date from broadly the same period. It does not appear to be a particularly well-executed piece, which may be a symptom of large-scale production during a time of need. Rathfarnham Castle itself was subject to significant upheaval during the Confederate Wars in Ireland (1641-53) and it may well be the case that the armour found its way to the castle in this period. Held by a Royalist garrison in 1641, the Castle was handed over to the Parliamentarians in 1647, before being stormed and taken by the Royalists again in 1649 (Giacometti 2015, 13). Aside from the garrison located in the Castle during this time, it is also worth noting that much of the landed gentry maintained armouries of their own (as with Littlecote) and so this set may have formed part of Rathfarnham Castle's equivalent, after the Castle was taken over again by Adam Loftus.

Armour breastplate E4468:6:1

Cromwellian front armour 'Harquebuzer' steel breast plate. Formed from a single medially formed steel plate with turned neck and arm openings. V-shaped lower edge. Single shot proofed to centre-right abdomen.

Stirrups, heel spurs and horse-shoes

Stirrup E4468:4:419

Possible iron horse-riding rowel spur. Both terminals incomplete L 45mm and W 8mm. Shank L 22mm with perforation at end narrowing to W 3mm L10mm. Rowel highly corroded and separated from terminals. L 31mm W 11mm tapering to a point.

X-Ray 2831

Horse shoe E4468:4:225

Part of horse shoe L131mm W?. Heavily corroded.

X-Ray 2822

Stirrup E4468:6:4469

Thick strip of iron curled into a sub-rectangular shape L 60mm W 45mm. Strip has wide central band L115mm W 12mm T 4mm. Both ends become thinner and taper slightly, ending in hooks. Each arm L50mm W 3mm-6mm T 3mm. Alternatively, could be a stirrup for riding a horse. Identical to 9:265 and either forms a pair or frame same object.

X-Ray 2823

Stirrup E4468:6:4670

Copper alloy strip with iron hinge or heel spur attached. Strip is curved slightly, L 36mm W 4mm. Unidentifiable heavily corroded attachment L 16mm with 2mm extending other side of strip.

X-Ray 2826

Horse shoe E4468:6:4807

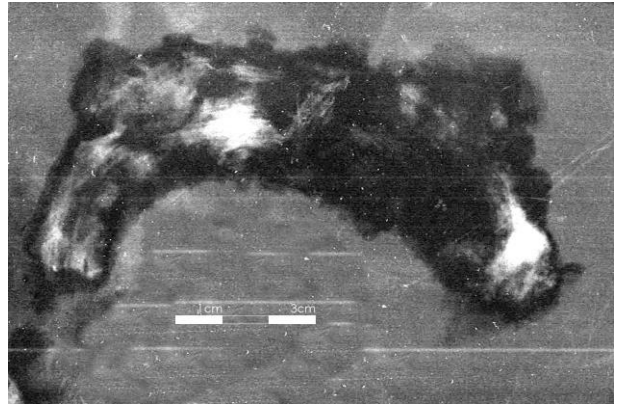
Part of horse shoe with 3 rectangular nail holes L130mm W 20mm. Heavily corroded.

X-Ray 2822

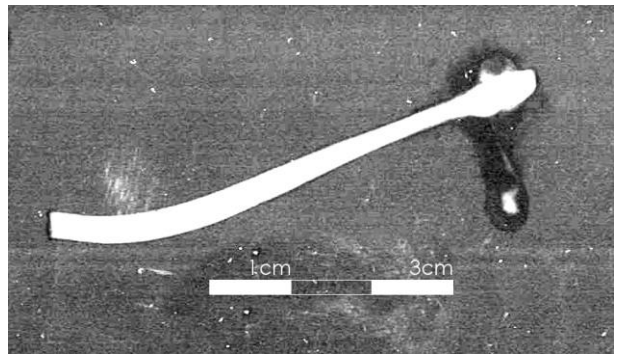
Stirrup E4468:9:265

Broad, U-shaped, metal frame, probably for securing the edges of a leather purse. Base L 58mm W 2mm T 3mm, with two arms extending away at 40 degree angles, ending in hooks. One hook is snapped. Left arm L 49mm with complete hook L 12mm curved. Right arm L 55mm and L 7mm of broken hook. Alternatively could be a stirrup for riding a horse. Almost identical to 6:4469 and either forms a pair or frame same object

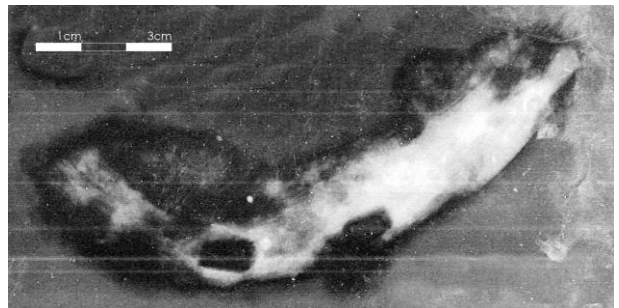
X-Ray 2827



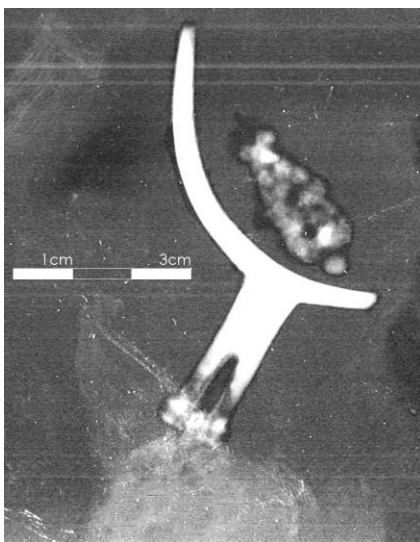
Horse shoe 4:225



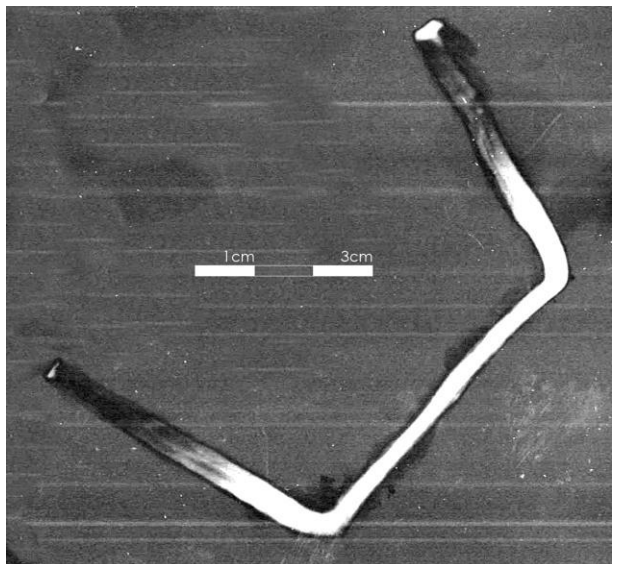
Stirrup 6:4469



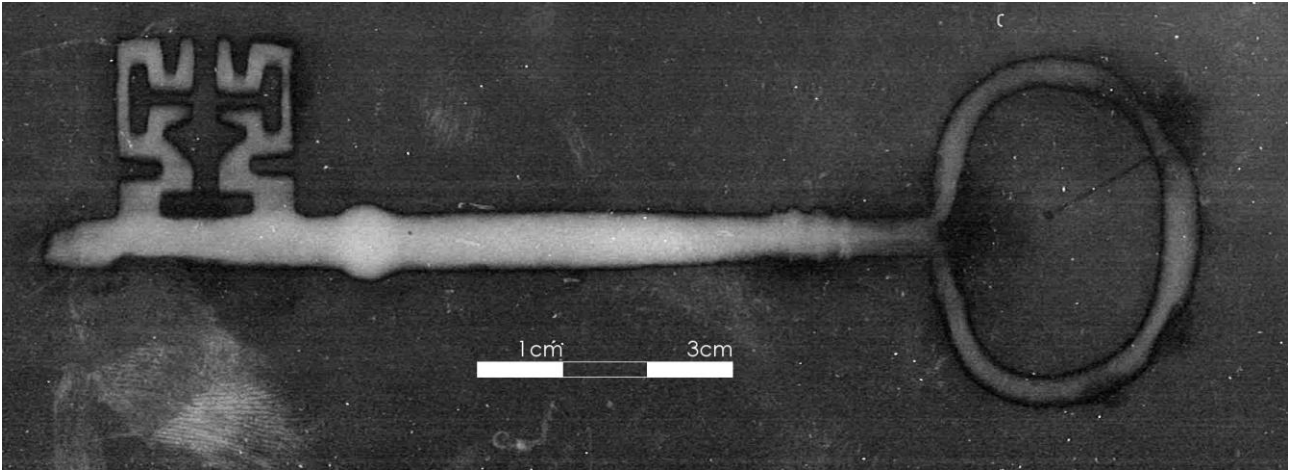
Horse shoe 6:4807



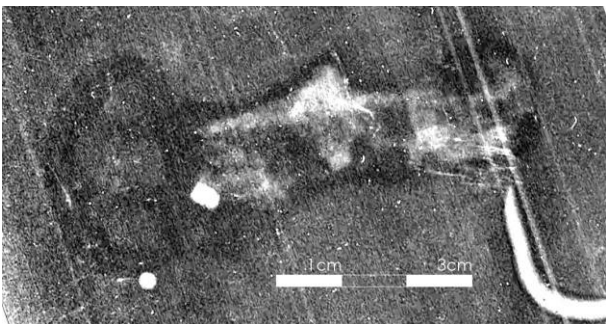
Stirrup 4:419



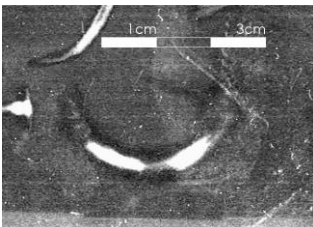
Stirrup 9:265



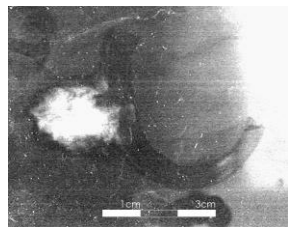
Key 3:187



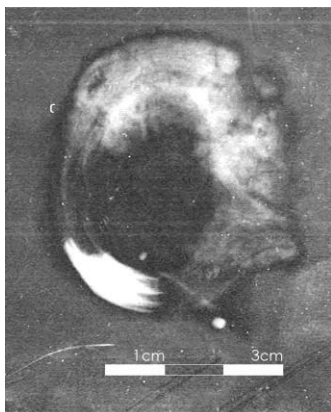
Key 4:418



Key 6:4470



Key 9:262



Key 6:4476

Keys

Four keys and three loops from keys were identified from X-rays. The best preserved of these is E4468:3:157, a large iron key from a 'box of ward; type of lock. These sorts of warded locks were mostly made in the period 1500-1700. The symmetrical lock bit suggests it comes from a lock which could have been opened on either side, ie a gate or door rather than a chest or box.

Key E4468:3:157

Oval loop L 32mm W 40mm. Barrel L 104mm. Nose extends beyond the ward. Ward has central opening. Symmetrical either side. L 20mm W 20mm.
X-Ray 2822

Key E4468:4:418

Oval loop (broken) W 34mm L 20mm. Full length L 76mm. Detail of ward unidentifiable.
X-Ray 2823

Key E4468:6:4470

Possible round key loop, broken. Semi circular L 47mm. Thin piece of metal extending towards centre L10mm.
X-Ray 2824

Key E4468:6:4476

Oval loop, possibly from key, including 5mm of shank /barrel. Circumference 90mm by 30mm diameter.
X-Ray 2831

Key E4468:6:5558

Almost complete iron key. Loop is broken but forms heat-shaped perforation c. 28mm wide. Bit is at tip of shaft forming plain L-shape. Total dimensions L 90mm W 28mm (loop) 8mm (shaft) 12mm (bit). Circular feature attached to shaft 18mm diameter may be part of key, or else unrelated ferrous adhesion.
X-Ray 2828

Key E4468:9:262

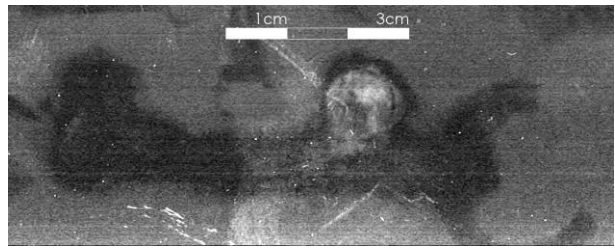
Loop broken, originally oval. Barrel heavily corroded and broken. No ward.

X-Ray 2824

Key E4468:9:264

Oval loop L 27mm W 39mm. Highly corroded. Barrel L59mm tapering. Ward highly corroded and appears to have a single indent from outer side. Several brass dress pins are also visible in the X-ray.

X-Ray 2831



Key 6:5558

Cutlery

The two iron knife blades are likely to be late 17th century in date, but the other artefacts are later.

Knife blade E4468:6:4703

Iron; highly corroded complete iron knife blade; handle missing.

L 78mm, W 14mm

Knife blade E4468:7:615

Iron; highly corroded incomplete iron knife blade, handle missing.

L79mm, W13mm

Silver plated steel salt spoon E4468:3:187

Complete silver plated salt spoon decorated with a simple beaded design the full length of the handle. Hall-marked. Suggested date: eighteenth century.

L 61.5mm, stem: W 10mm, bowl: D19mm

Steel tea spoon E4468:12:17

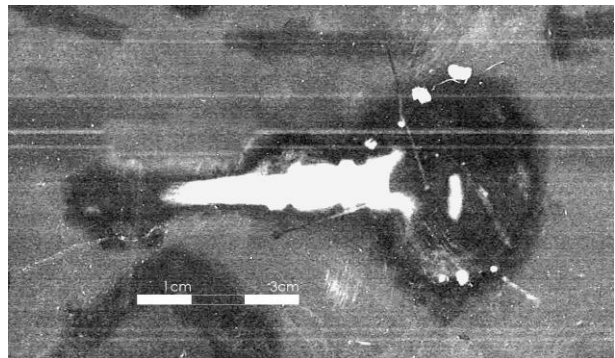
Nickel plated stainless steel complete twentieth-century nickel plated stainless steel tea spoon.

L 128mm, W 29mm

Steel knife blade E4468:12:18

Nickel plated stainless steel; incomplete dinner knife blade. Twentieth-century.

L84mm, W 21mm.



Key 9:264



Knife blade 6:4703

Sewing

Steel was used for sewing needles from the 17th century.

Steel sewing needle E4468:7:591

Round-sectioned shank, sub rectangular-sectioned head with eye in groove. Blackened from staining with some evidence of corrosion on lower shaft.

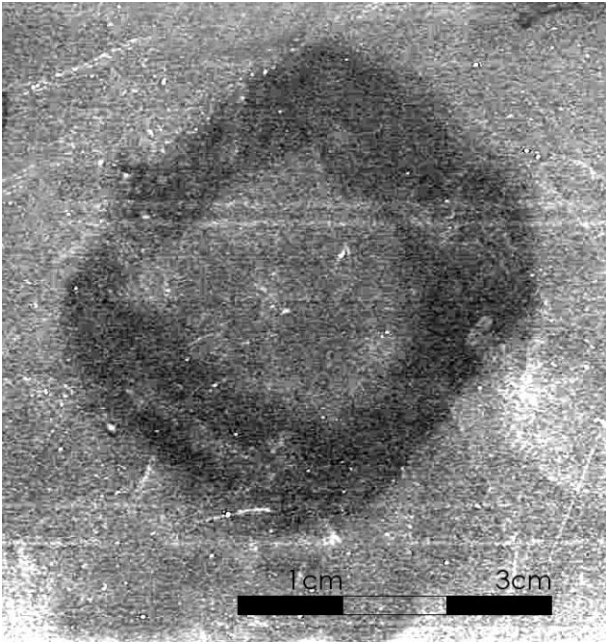
L 34.1mm, D 0.8mm



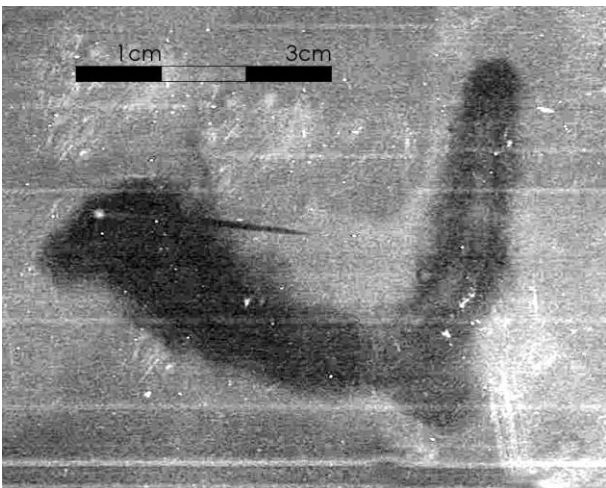
Knife blade 7:615



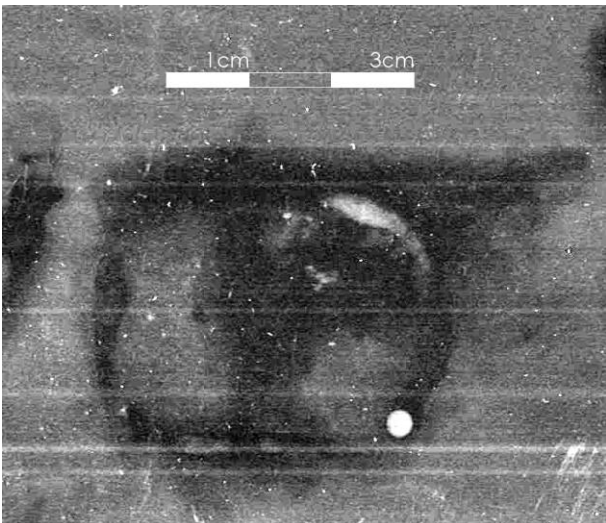
Sewing needle 7:591



Buckle 6:4475



Buckle 7:513



Buckle 12:24

Buckles

Buckle E4468:6:4475

Rectangular frame buckle with rounded corners, heavily corroded. No chape or pin visible. L 30mm – 32mm W 28mm. Rounded corners.

X-Ray 2831

Buckle E4468:7:513

Part of buckle, possible. Heavily corroded. L 20mm W 55mm. Brass pin visible L24mm and slightly curved. 3mm of two more brass pins visible on end of width.

X-Ray 2827

Buckle 12:24

Buckle, complete. Rectangular frame with crossbar and possible tongue/pin. A possible iron nail adheres to the buckle by ferrous corrosion, alternatively this could be a long tongue/pin. Buckle identified from X-ray only, uncertain context, presumably from one of the bags of nails. L 42mm W 32mm T 2.5mm

X-Ray 2822

Fixtures and fittings

Mounts and plate fittings

Iron plate E4468:3:182

Possible furniture fitting iron plate L 45mm W 25mm

X-Ray 2826

Iron plate E4468:6:4474

Iron plate in 2 fragments L 20mm and L 14mm W 20mm

X-Ray 2831

Decorative iron mount E4468:6:5562

A cruciform or floral shaped decorative iron mount from a wooden chest or document box. Composed of a sub-square central mount (T 10mm) decorated with a punched decoration surrounding one larger central indentation. This has four rounded "petals" (T 5mm) protruding out behind each side to form a cruciform shape. The four petals are set back from the central mount giving 3-dimensional impression. At its rear there are surviving fragments of wood (T 8mm) still adhered to the back of the mount. There are also the remains of three nails protruding from three of the four petals, which would have originally been used to nail the mount to a piece of furniture. Spanish wooden chests or document boxes produced in the seventeenth-century were decorated with similar metal mounts. The piece is highly corroded. Suggested date: sixteenth to seventeenth-century.

L 68.7mm, W 67mm

Iron plate E4468:7:511

Rectangular iron plate L51mm W 15mm. Brass pin visible attached on diagonal.

X-Ray 2827

Staples

Iron staple E4468:3:168

W 22.5mm, H 16mm

Iron staple E4468:7:567

W 26mm, H 32mm

Iron staple E4468:9:345

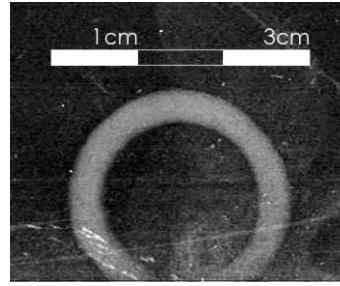
W 9mm, H 11.7mm

Ring fittings

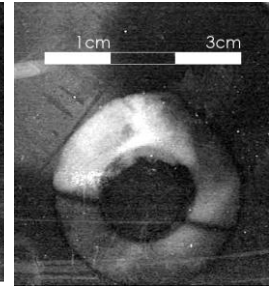
Ring E4468:6:4471

Round loop, possibly from a key L 26mm W 26mm. heavily corroded on one side.

X-Ray 2823



Ring 6:4471



Ring 12:19

Iron ring E4468:6:4648

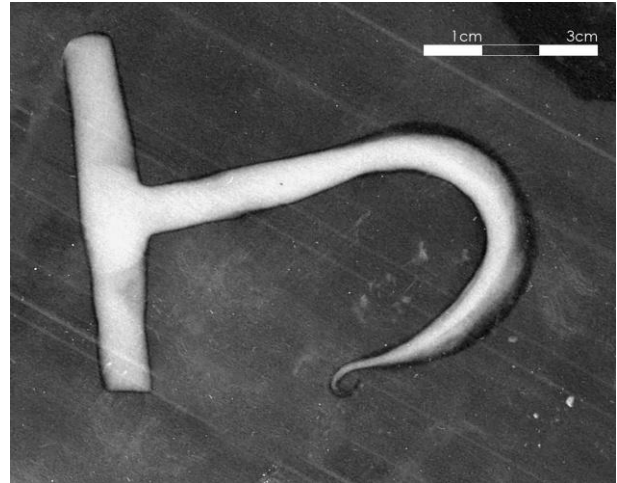
Iron? Circular in form. Highly corroded. This does not resemble the copper alloy rings from fittings, as it is much smaller. It is likely to be part of a fitting rather than a finger ring.

T 6mm, D18.5mm.

Iron ring or washer E4468:12:19

Round fitting, possibly an iron washer. Heavily corroded. L 31mm W 32mm

X-Ray 2823



Hook 6:4468

Hooks

Hook E4468:6:4468

Hook in J shape. Top bar L 62mm W 8mm, thickening to 11mm at join with shank. Shank is L 120mm with wide curve and short narrow hook at end curving in opposite direction.

X-Ray 2823b

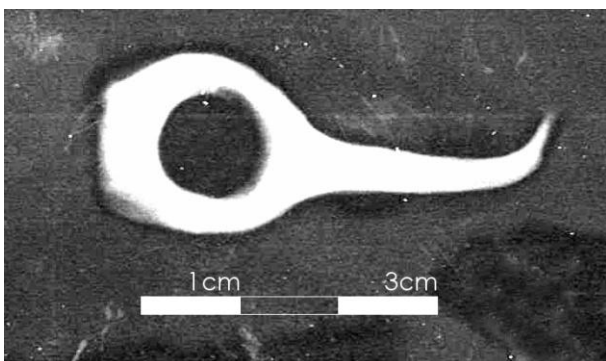
Hook E4468:7:510

Round dome headed hook with straight shank L 15mm curving to circle almost meeting shank. L of curve 4mm. Heavily corroded.

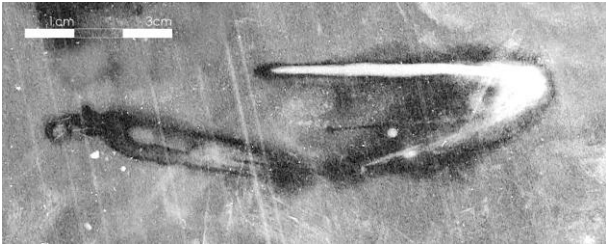
X-Ray 2827



Hook 7:510



Hook 6:5553

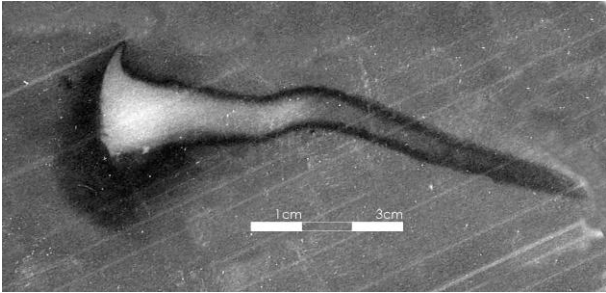


Hinge 3:158

Hinges, latches and catches

Hinge/pin E4468:3:158

Pin or hinge attached to a clump of stones L 95mm W 20mm. Opening L 14mm W 4mm near end with 5mm ring above. Heavily corroded. 40mm central pin. A brass pin is also identifiable near the hinge.
X-Ray 2822



Catch 6:4467

Iron latch E4468:3:162

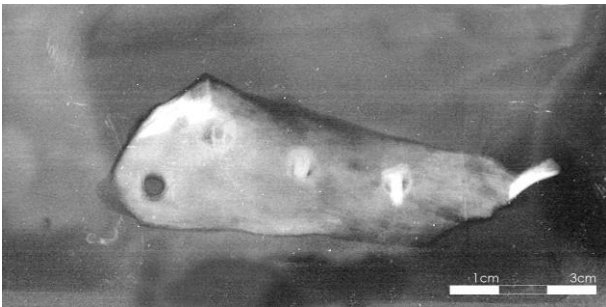
Highly corroded iron latch for window, door or chest. L 73mm, H 22.5mm

Window handle E4468:6:4466

Long strip with rounded ends L 240mm Split at L 137mm in T-shape L 45mm W 7mm. One end perforated by 10mm diameter circle.
X-Ray 2823b

Window catch E4468:6:4467

Window catch or level. Bent. L 103mm W 22mm at top, tapering to W 3mm at other end.
X-Ray 2832



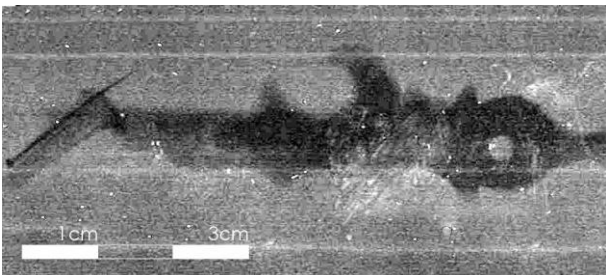
Hinge? 9:263

Hinge E4468:9:263

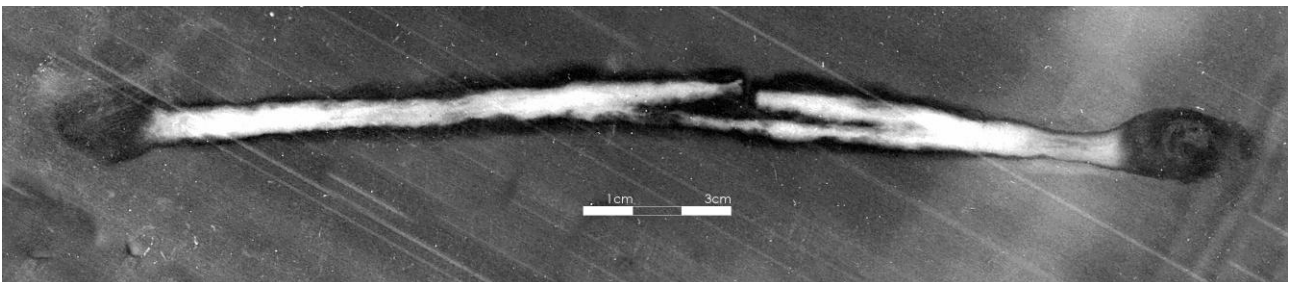
Lower length L 86mm with both ends curling in. 3 distinct nails 20mm and 17mm apart protruding from rear. Top L 70mm with 2mm nail hole in top left.
X-Ray 2824

Hinge E4468:9:408 (also in copper alloy report)

Copper alloy and iron decorative hinge or bracket L 55mm. Two curved short arms L 10mm and L 5mm on one side only. Originally cast in a symmetrical design, however it is now missing some design details from one side, making it asymmetrical. Possibly a clock hand or decorative mount or fixture, hinge or bracket? Highly corroded.
L 69mm, W 18mm, T 3.5mm
Examined by Patrick NMI 09/12/14.
X-Ray 2826



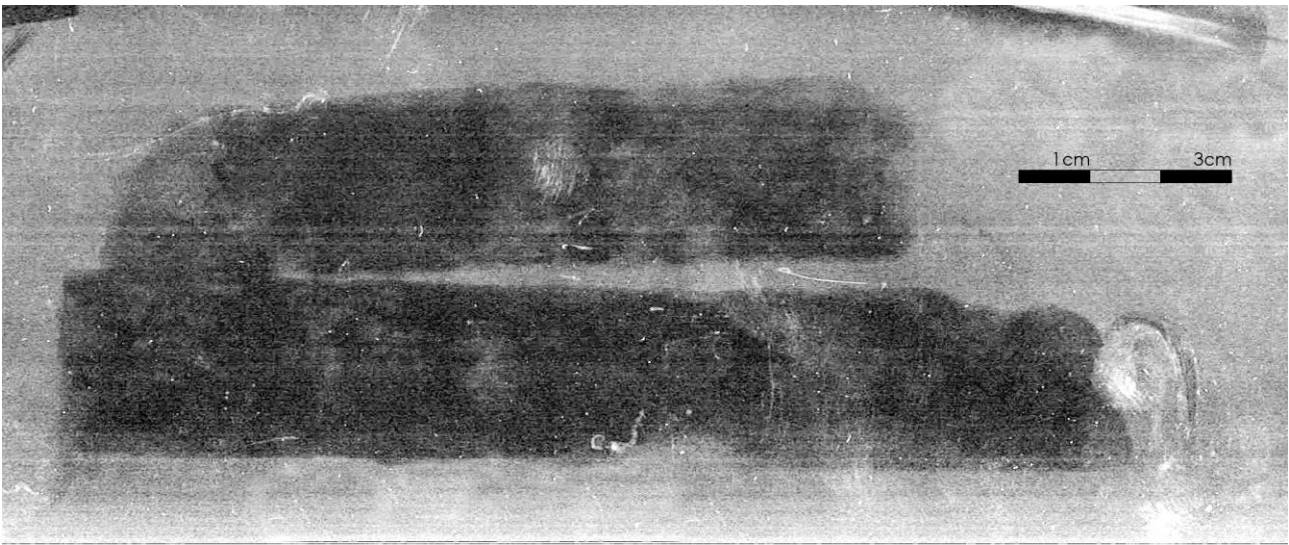
Hinge? 8:408



Handle 6:4466



Barrel hoop 3:189



Barrel hoops 6:4472 and 6:4473

Barrel hoops

Barrel hoop E4468:3:189

Bucket or barrel hoop fragment. Slightly curved L 235mm W 24mm. Vertical crack at 33mm.
X-Ray 2823

Barrel hoop E4468:6:4472

Bucket or barrel hoop fragment. Slightly curved L 150mm W 25mm. Two nail heads visible on outer side 25mm apart and 88mm from one side.
X-Ray 2827

Barrel hoop E4468:6:4473

Bucket or barrel hoop fragment. L 113mm W 25mm.
X-Ray 2827

Nails and screws

Iron nails were amongst the most common artefact type recovered from the Rathfarnham excavation. 1,506 nails were identified. These nails are structural, and were probably part of

structural timbers that collapsed into the wash-pit. Insect remains examined by Steve Davis, UCD, identified a large amount of insects that thrive on rotting wood, suggesting that many timbers had decayed within the wash-pit. Samples of the artefact-rich deposit were dominated by structural pests - woodworm, ptnids and deathwatch. Davis (pers. comm. 2015) also identified grain beetles which in such small numbers often originate from dung, and some meadow taxa.

All 1,506 tapering hand-wrought nails, rather than the later types (eg. machine cut from end of 18th century or wire-drawn from mid-19th century). These hand-wrought nails were in use from the 17th century to the 19th century.

The Rathfarnham nails have been divided into three basic types for the purposes of this initial assessment. Each type makes up about 1/3 each

of the identifiable nails in the assemblage (885 nails were too corroded to identify). Dome-headed and rose-headed nails have large dome-shaped heads and would have been used for general purpose use in concealed work or for decorative effect. Examples: framing, lathing, hinges, clasps, boats, coffins, etc. Flat-headed nails are similar, but could be used where the head needed to be flush to the receiving material, for example in stair framing.

The third type are no-head and L-shaped head nails. These are called sprigs (small) and brads (big) finish nails and are generally used for trim, and flooring, where the nail is able to disappear into the receiving material.

The fourth type, of which only one example was identified, is a possible screw (2:215).

Other building materials were also identified, including late 17th century red brick, masonry fragments, mortar and timbers. A very large amount of window glass was found, as well as lead window came, used in the castle's case-ment windows. It is possible that the window glass assemblage in the washpit represents all of the 16th century windows which were replaced in the early 18th century. Hand-painted tin-glazed earthenware wall and fireplace tiles of various colours were also recovered, as well as a few ceramic roof and floor tiles.

Screw E4468:2:215

Large dome-headed nail with fine circular grooves along lower part of shank. It is possible lower part of nail was used as a screw. It is not clear at this stage, due to corrosion, that grooves are in screw pattern rather than a series on non-interconnecting circular grooves. L 61mm D (head) 16mm W (shank) 5mm square and tapering

Dome-headed nails	225
Flat-headed nails	180
No head/L-shape	207
Screw-shank nail	1
Too corroded to ID	899
Total	1506

Array of iron artefacts during excavation, with nails in foreground



Bucket handle

Bucket handle E4468:3:159

2 fragments of broken iron bucket handle with curved termini.

L 280mm + 200mm, T 2mm

Unidentified iron objects

Unidentified iron object E4468:4:226

Undefinable large iron object. Cylindrical. L 115mm
X-Ray 2833

Unidentified iron object E4468:4:227

Undefinable large iron object. L 135mm
X-Ray 2833

Unidentified iron object E4468:4:228

Undefinable large iron object. L 70mm W 35mm with tail piece L 20mm W 10mm
X-Ray 2833

Unidentified iron object E4468:4:429

Possible furniture or gate fitting. L-shaped L 115mm W 25mm tapering to 7mm with curve at end. Arm at right angles L 57mm W 20mm tapering to 10mm. Heavily corroded.
X-Ray 2833

Unidentified iron object E4468:4:230

Undefinable fragmented iron object.
X-Ray 2833

Unidentified iron object E4468:4:231

Undefinable fragmented iron object.
X-Ray 2833

Unidentified iron object E4468:4:420

Heavily corroded L-shaped object L 90mm W 30mm. Short length L 30mm W 37mm. Nail visible for 18mm.
X-Ray 2823

Unidentified iron object E4468:6:6

Large round irregular ferrous artefact. Weighs very little, so is certainly hollow. Heavily corroded. Possible boss, eg. For a shield. Diameter 120mm-110mm
X-Ray 2832

Unidentified iron object E4468:6:4595

Large unidentified cylindrical object L 210mm
X-Ray 2823b

Plum-bob weight? Candle-snuffer? E4468:6:4613

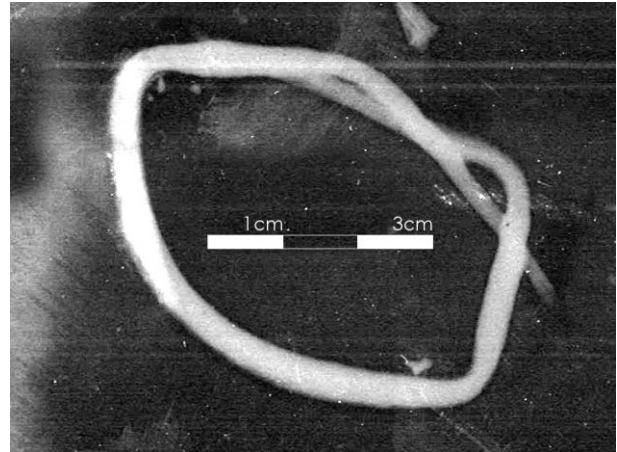
Cast iron object; domed in shape, hollow inside. Nipple on top, with central hole for hanging.
H 38mm, D 19.3mm, Wt 26g

Unidentified iron object E4468:6:4808

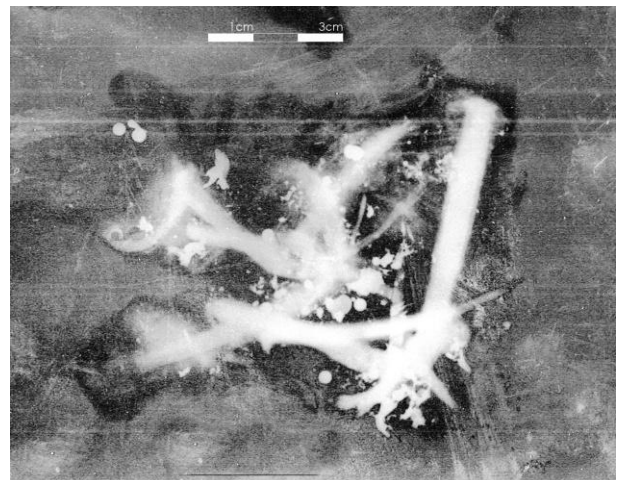
Possible furniture fitting L 125mm W 21mm. 4 nail holes, 3 with nails and one possibly a screw. Arm attached at right angles to main bar opposite highest nail hole. Broken at L53mm W 11mm
X-Ray 2822

Unidentified iron object E4468:6:4809-48910

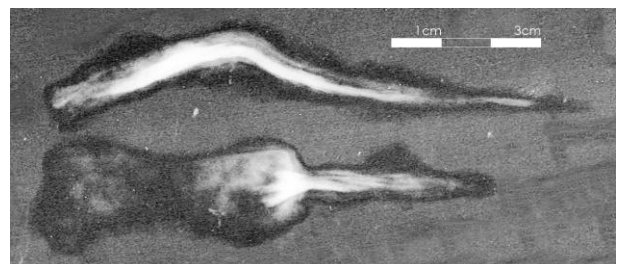
Unidentified conglomerate with clay pipe stem. Includes a long thick straight section of wire looped at one end to



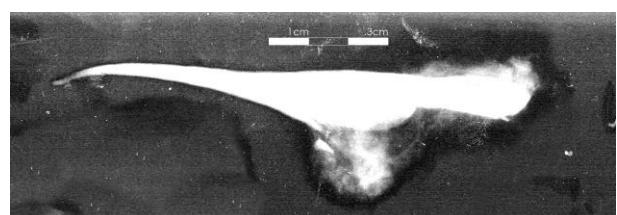
Twisted iron wire 6:4464



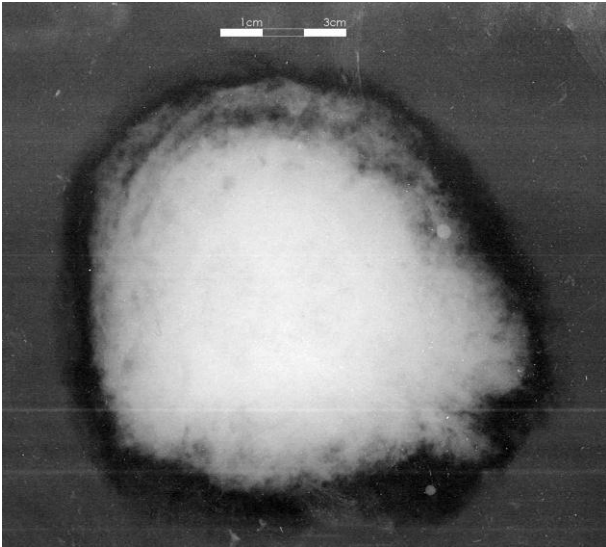
Jawbone, brass pins and iron nails 6:5560



Objects 6:5554 and 6:5555



Object 6:5556



Boss? 6:6

form a small eye 5mm in diameter. Sewing implement?
L 124mm T 5mm
X-Ray 2822

Unidentified iron object E4468:6:5552

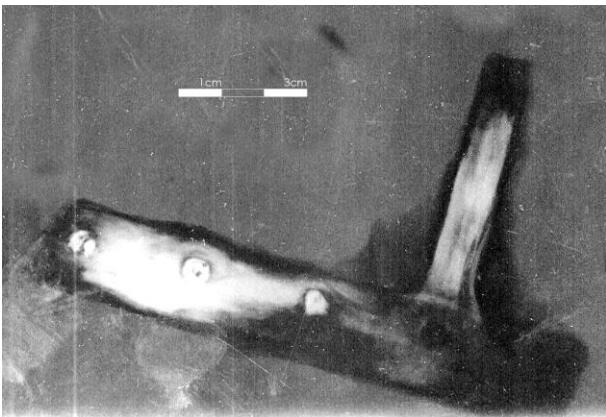
L-shaped broken iron object. Corner of L is rounded on outside and square on inside. Possibly a furnishing fitting. L 60mm W 12mm.
X-Ray 2831

Unidentified iron object E4468:6:5553

Hook shaped iron object with large perforation. Perforated end is flattened. L 50mm TW 18mm (at widest point) T 5mm perforation circular 10mm diameter.
X-Ray 2831

Unidentified iron object E4468:6:5554

Unusual shaped object, comprising an elongated hour-glass-shaped element (L 82mm W 15-21mm) attached to a thin shaft (L 36mm W/T 5mm).
X-Ray 2831



Object 6:4808

Unidentified iron object E4468:6:5555

Elongated tapering length of wire with a curve. L 110mm W/T 5mm.
X-Ray 2831

Unidentified iron object E4468:6:5556

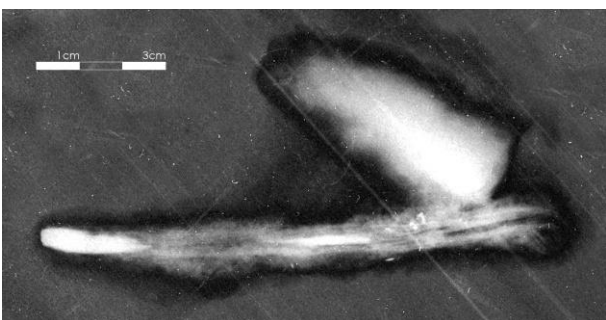
Unusual shaped metal object, almost straight along one long edge but distinctly curved on the other. Brightness in X-ray suggestive of copper alloy rather than iron, perhaps. May be a razor handle and blade, or similar, due to resemblance with E4468:6:5559. L 130mm W 14mm max.
X-Ray 2831

Unidentified iron object E4468:6:5557

Sub-circular lump of corroded iron with possible nail hole or perforation roughly central. L 55mm W 45mm perforation circular 8mm diameter.
X-Ray 2831

Conglomeration on bone and metal E4468:6:5560

Corroded conglomeration of metal objects, nails, hooks and brass pins attached to an animal jaw bone
X-Ray 2822



Objects 6:4809 and 6:4810

Unidentified iron object E4468:6:8205

Iron object, strip of iron curving to either end and curved in section. A brass pit (unnumbered) adheres to the rust corrosion.
L: 34.04mm, W: 19.12mm, Depth: 8.23mm, TK: 3.38mm.

Flat iron object E4468:6:8812

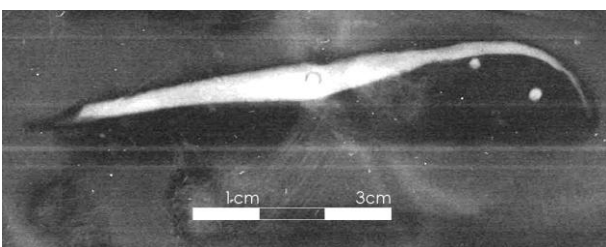
Small flat piece of iron, broken on all sides, part of larger object, eg. an iron strip. L: 21.78mm, W: 18.58mm, TK: 1.75mm.

Iron wire E4468:7:487

Short piece of bent iron wire. Cut straight at one end, broken at the other. Not corroded. L: 16mm, Dia. 1.6mm, >1g weight.

Unidentified iron object E4468:7:514

Conglomerate of iron and stones. Corroded narrow piece of iron, hollow, L 27mm W 5mm
X-Ray 2827



Cutthroat razorblade 6:5559

E4468:7:559 Barbed wire/coil fragment?

Coiled section of steel alloy barbed wire.
L 20mm, W 6mm missing

Flat iron object E4468:7:3089

Small flat piece of iron. Broken at both ends. Sides are tapering in slightly. Not corroded. L: 20mm, W: 4mm, TK: 1.25mm, >1g weight.

Drill bit / twisted nail shaft E4468:9:249

Twisted iron square-profiled shaft. Possible drill-bit or twisted nail shaft. Broken at top, flat at end of twisted section. L: 29mm, W: 3.5mm x 4.5mm at top, 3mm x 3mm at bottom, 1g Weight.

Needle E4468:9:497

Thin needle L 43mm W 1mm with oval eye 9mm by 1.5mm made by twisting the wire around forming a loop.
X-Ray 2827

Ring E4468:9:498

Small iron ring D 14mm T 1.5mm.
X-Ray 2827

Unidentified iron object E4468:10:37

Metal bar L 83mm W 8mm tapering to 4mm. Top curved L 10mm
X-Ray 2832

Unidentified iron object E4468:10:38

Slightly-curving metal bar L 105mm W 10mm, tapering to 3mm. L-shaped at one end L 25kmm W 10mm, tapering to a point.
X-Ray 2832

Unidentified iron object E4468:10:39

Metal bar with bend L40mm W 7mm and L 31mm W 5mm, tapering to 2mm.
X-Ray 2832

X Rays of metal artefacts

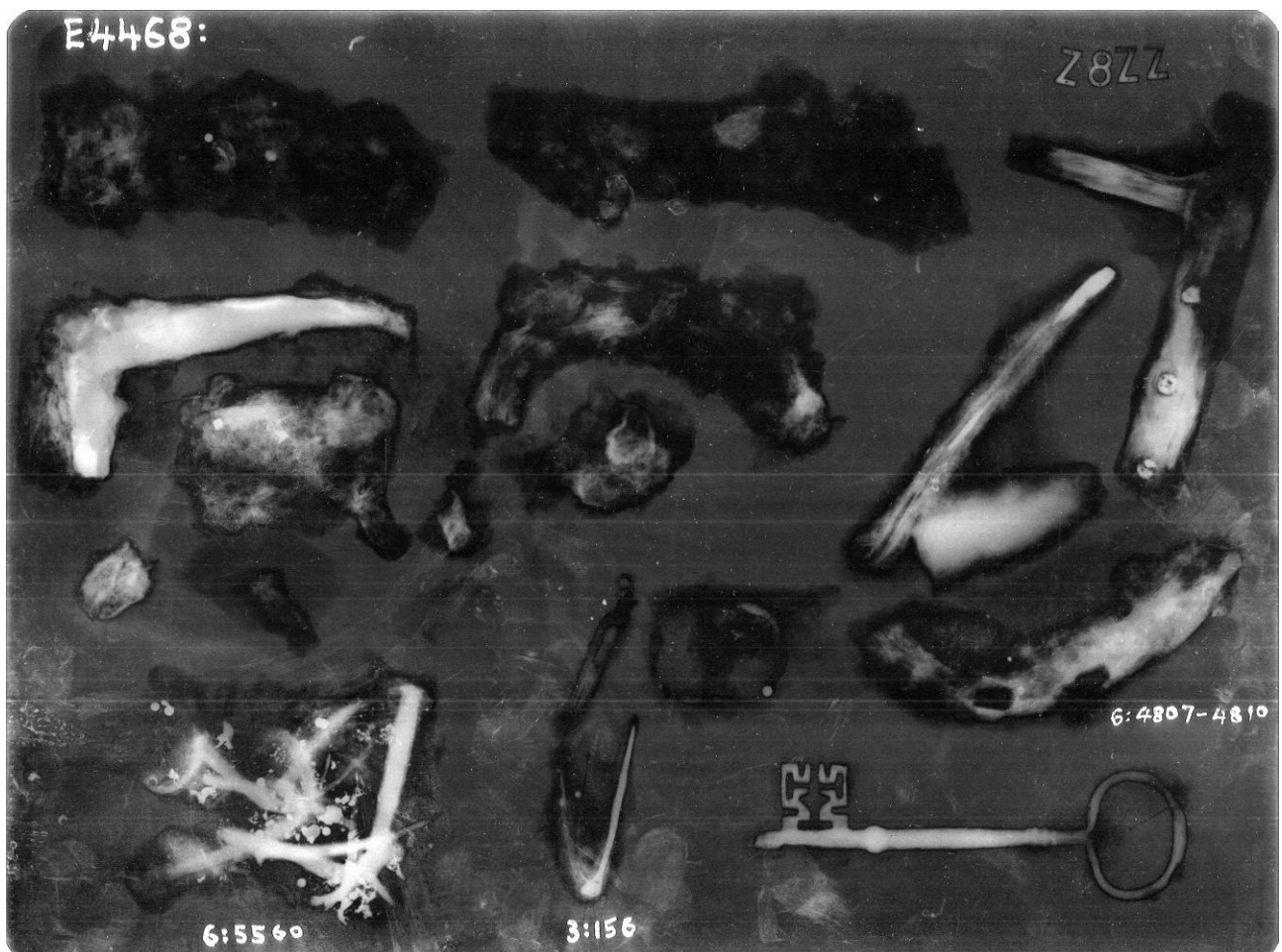
Susannah Kelly

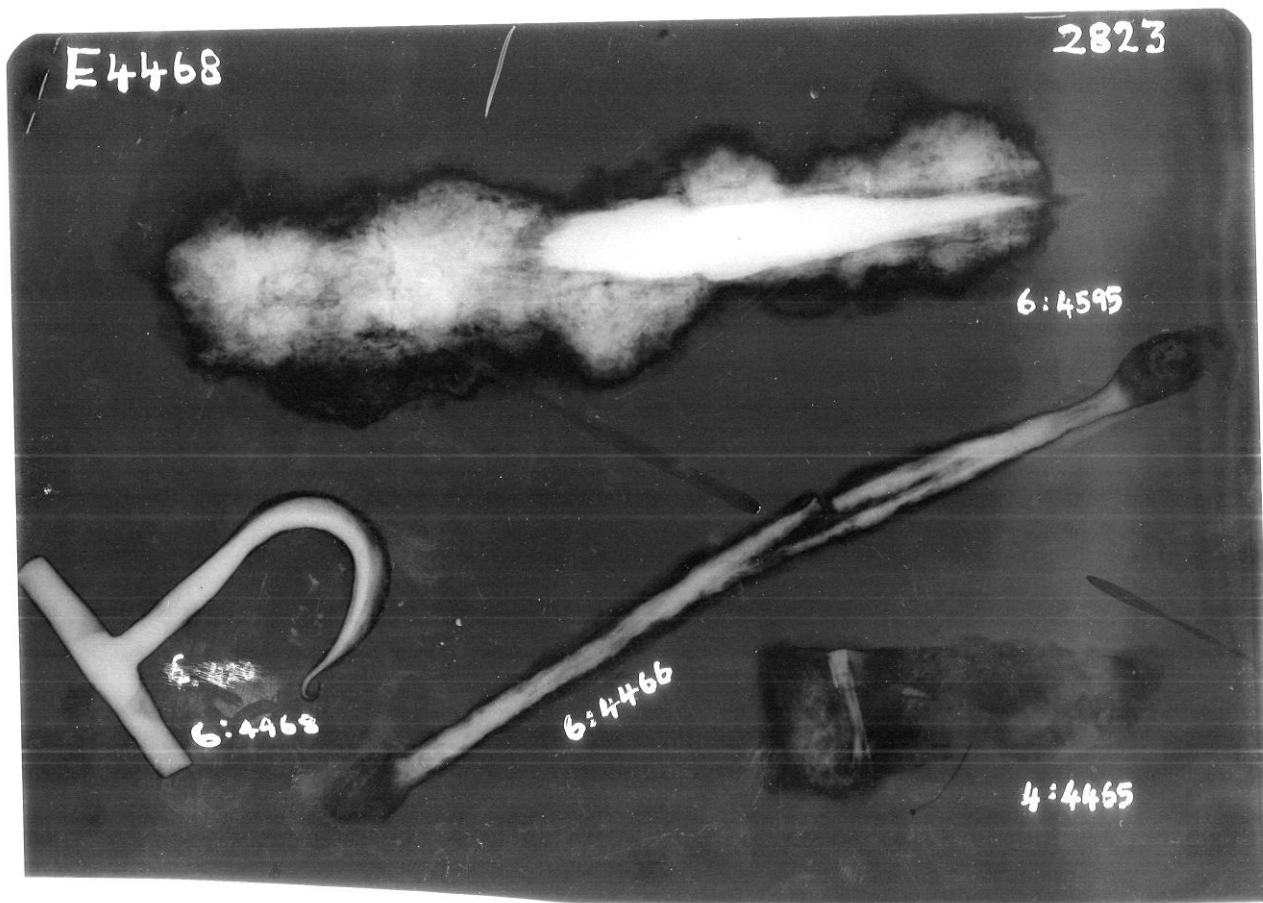
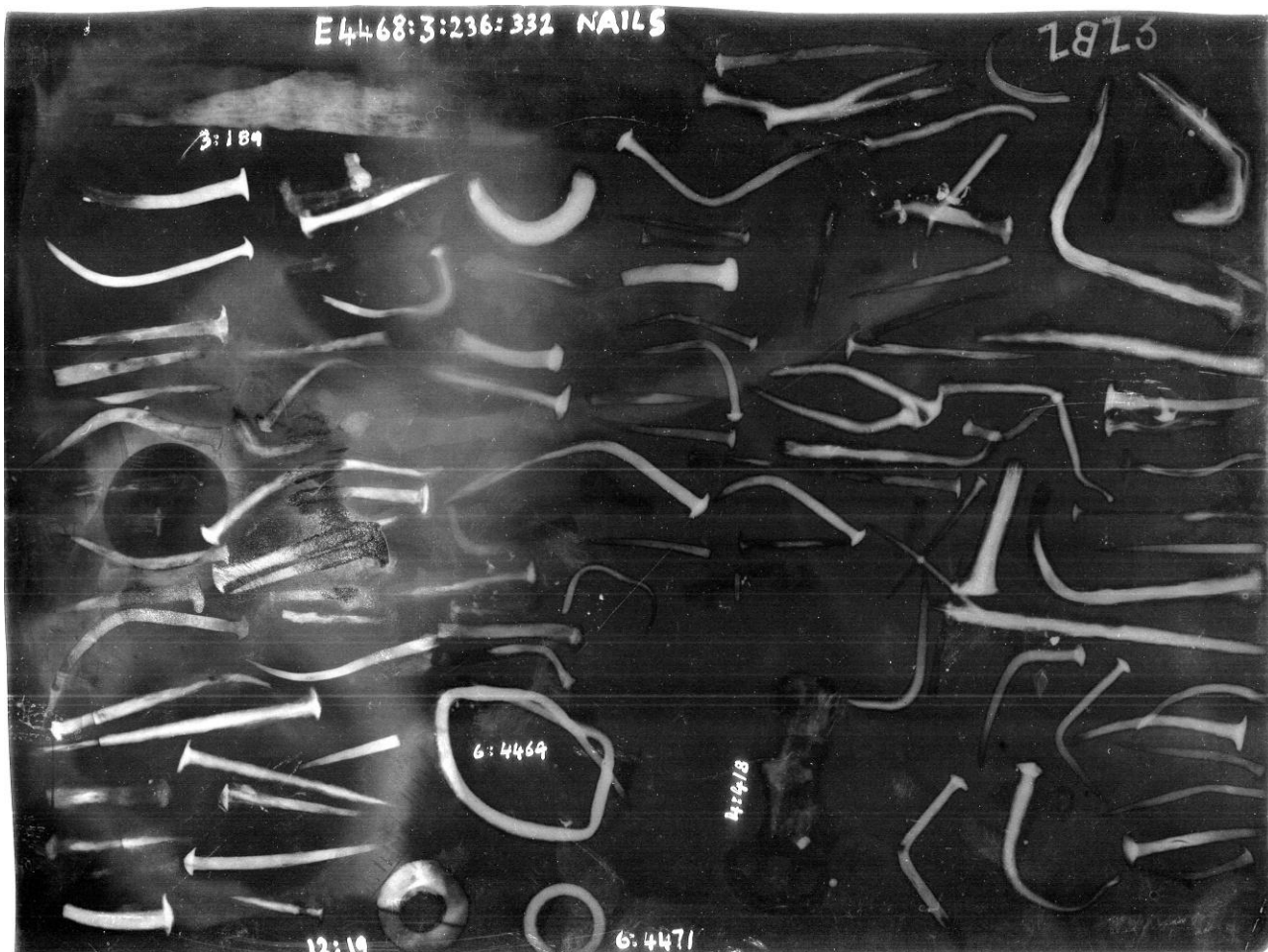
Thirteen X Rays were taken by Susannah Kelly, Conservator working at University College Dublin. All iron artefacts were X-rayed, including the armour breastplate (see last X-Ray) as well as a number of copper alloy artefacts that show us more brightly than the Iron.

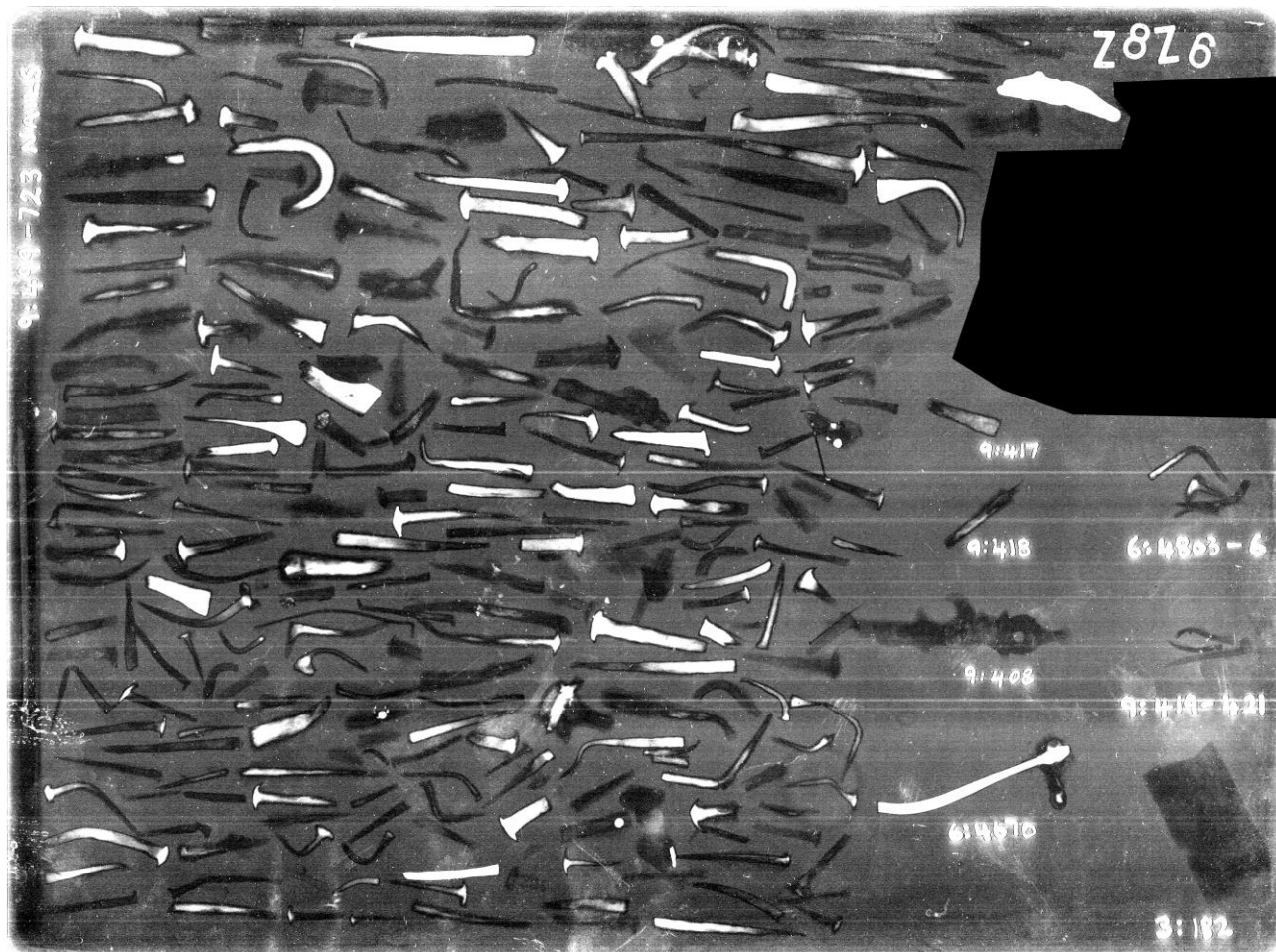
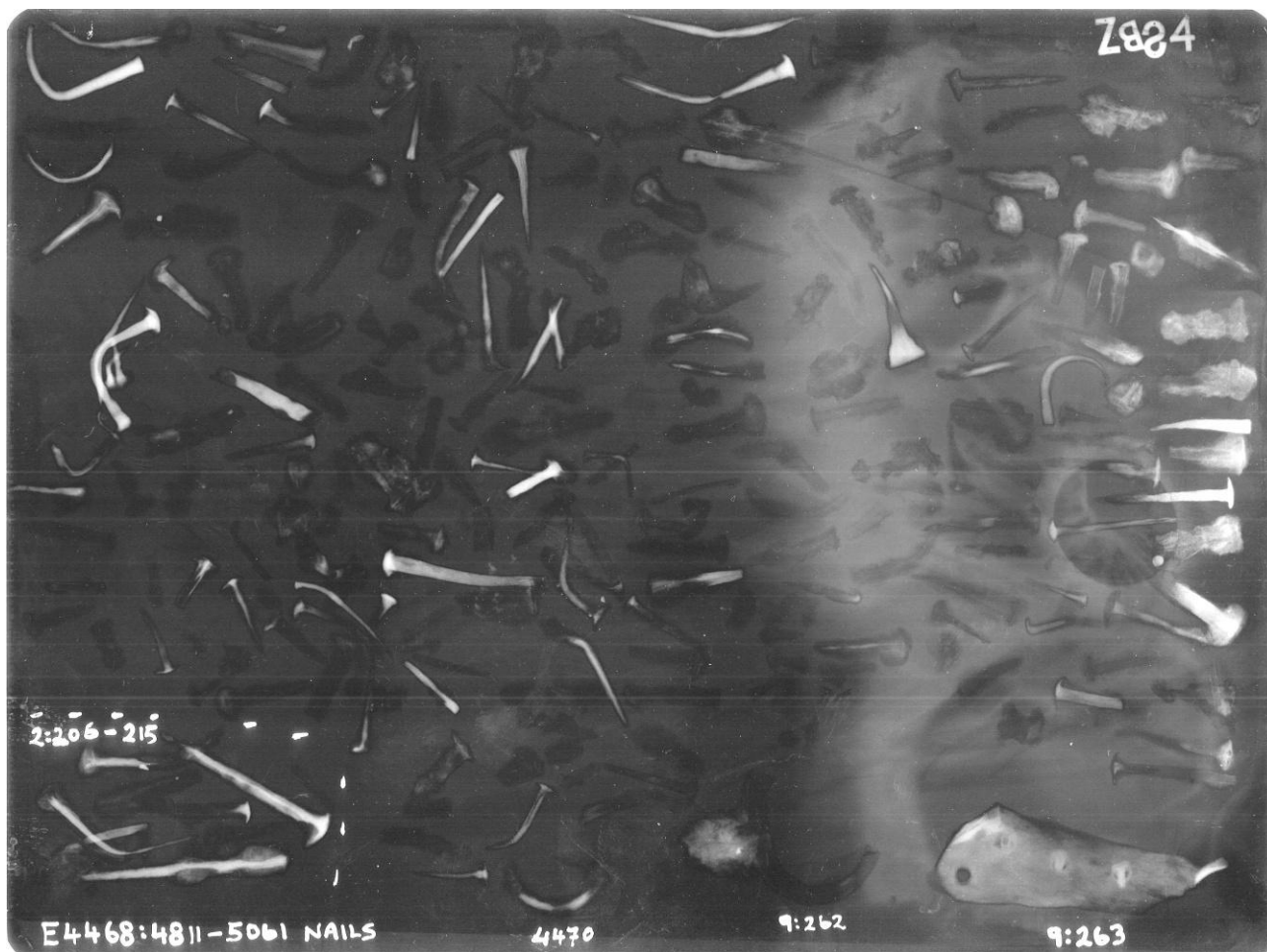
The X Rays were scanned and digitally enhanced by Antoine Giacometti.

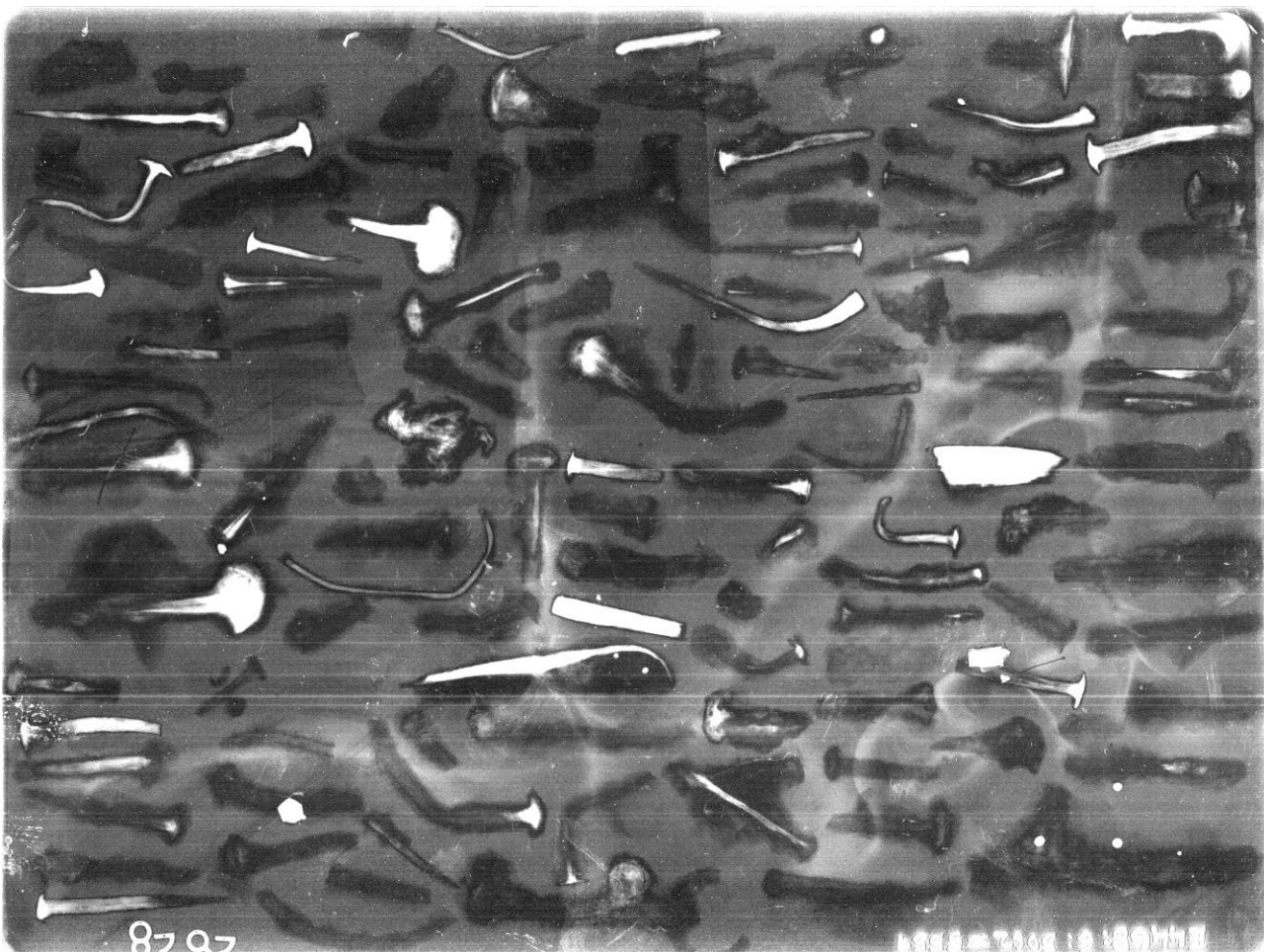
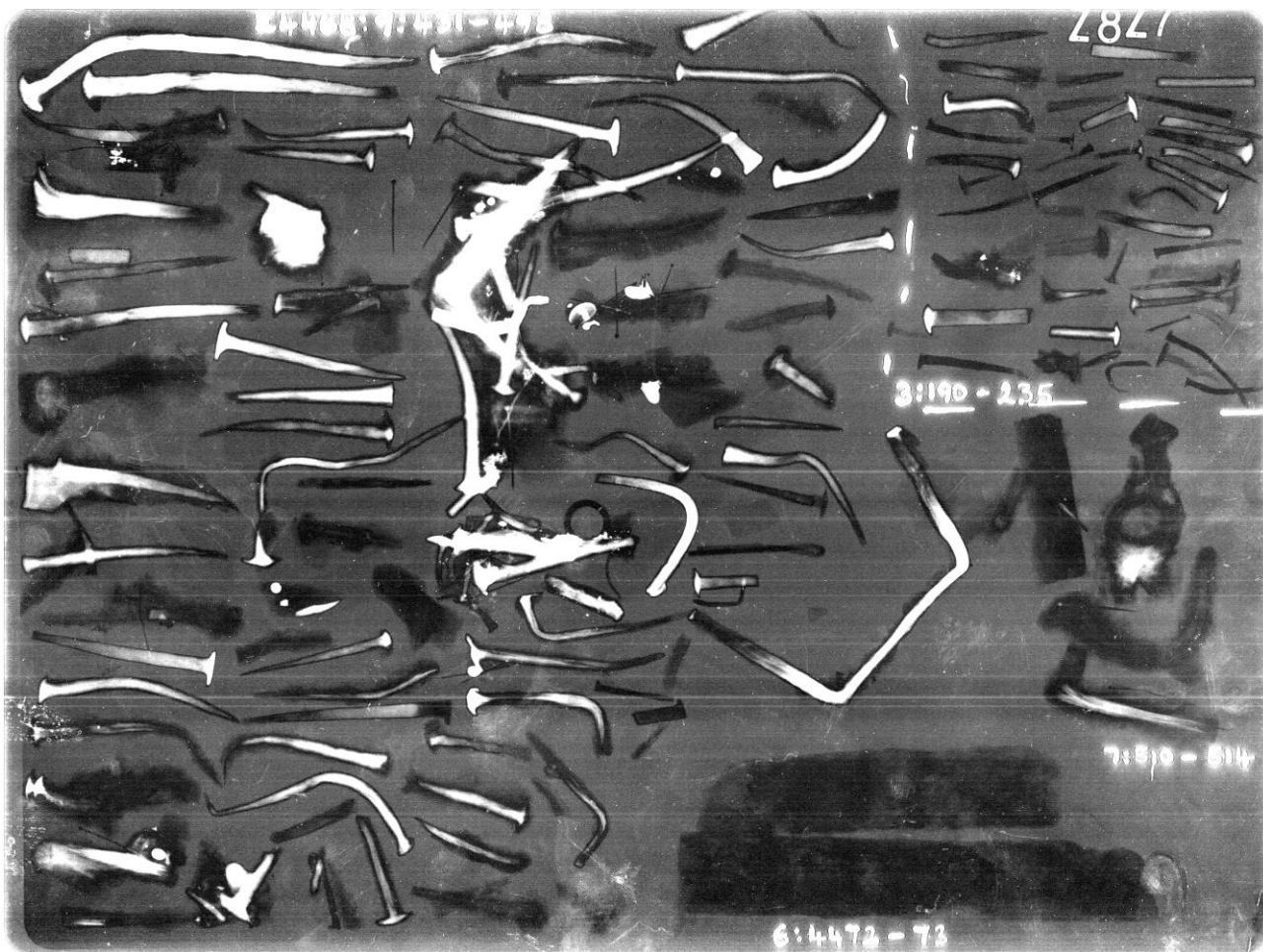
The X Rays have been numbered from 2822 to 2835 by Sussanah, and the numbers correpsond the X Ray numbers in the iron artefacts catalogue above.

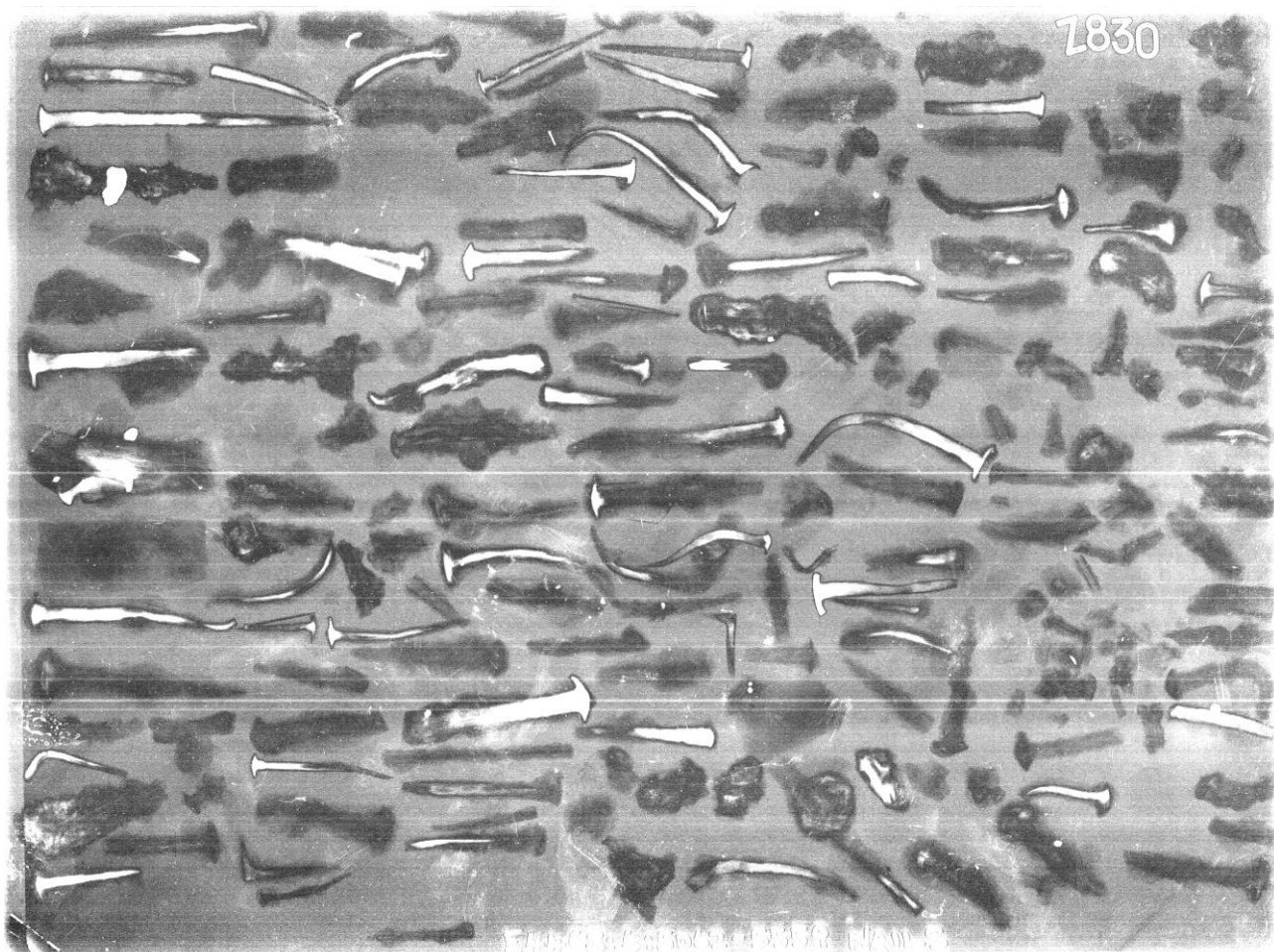
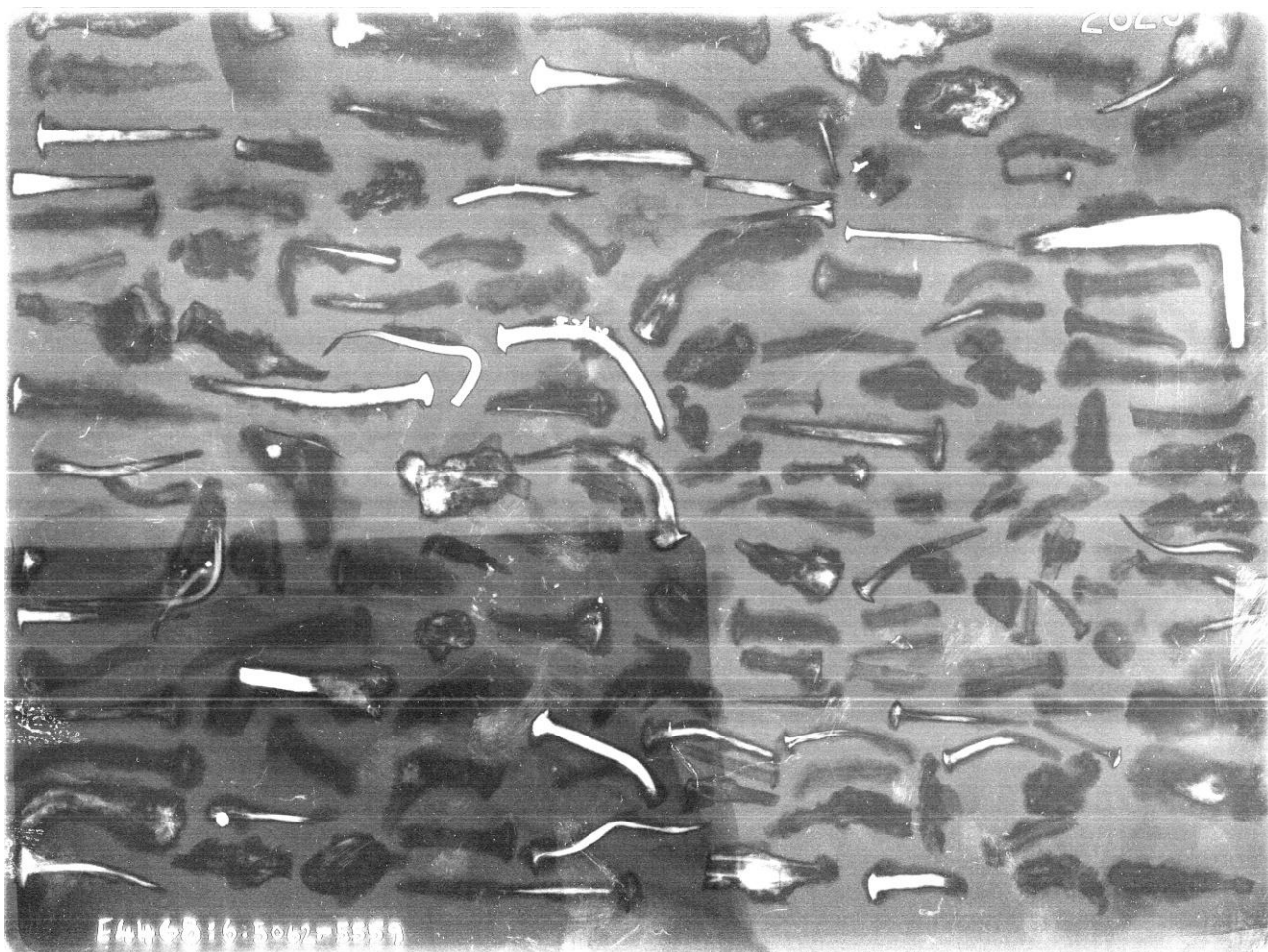
X Ray 2822

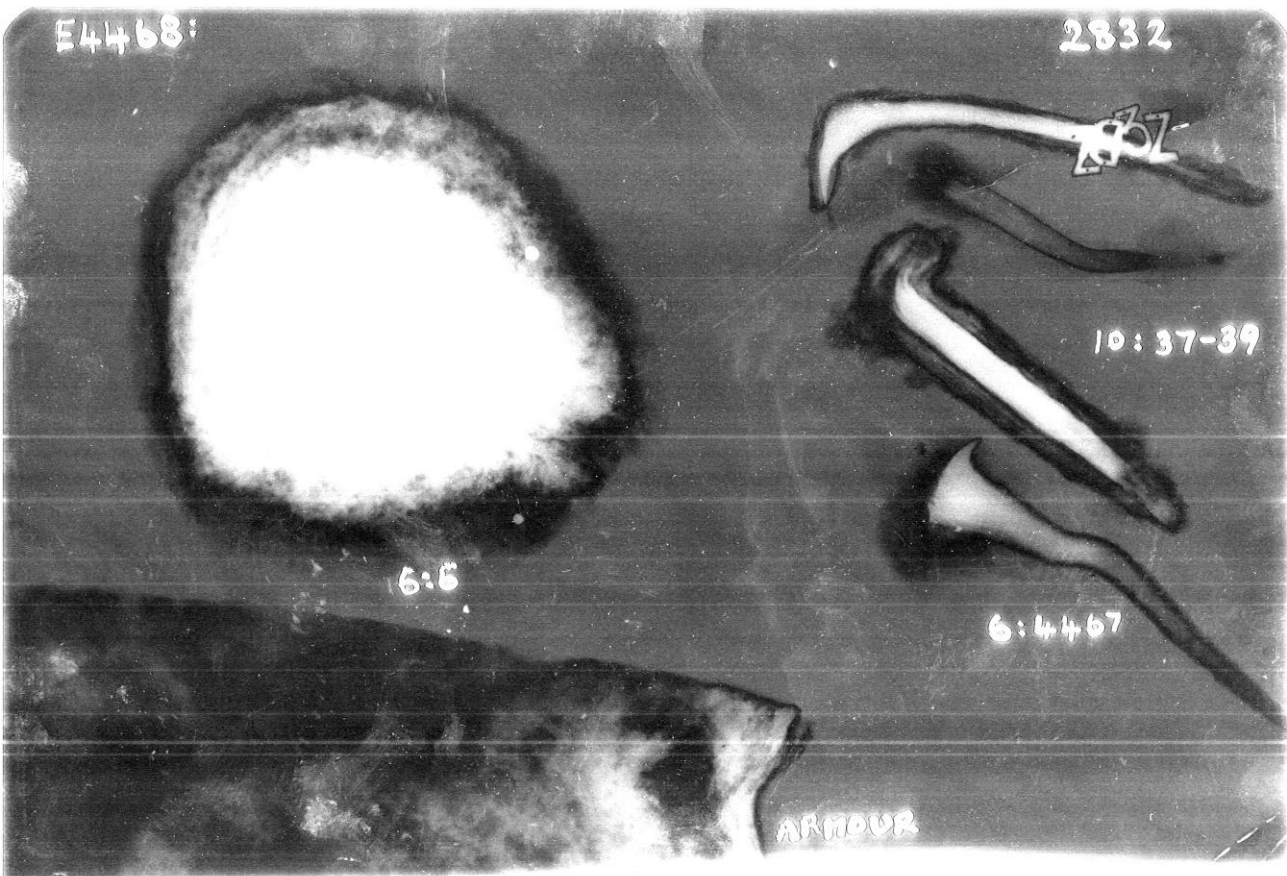
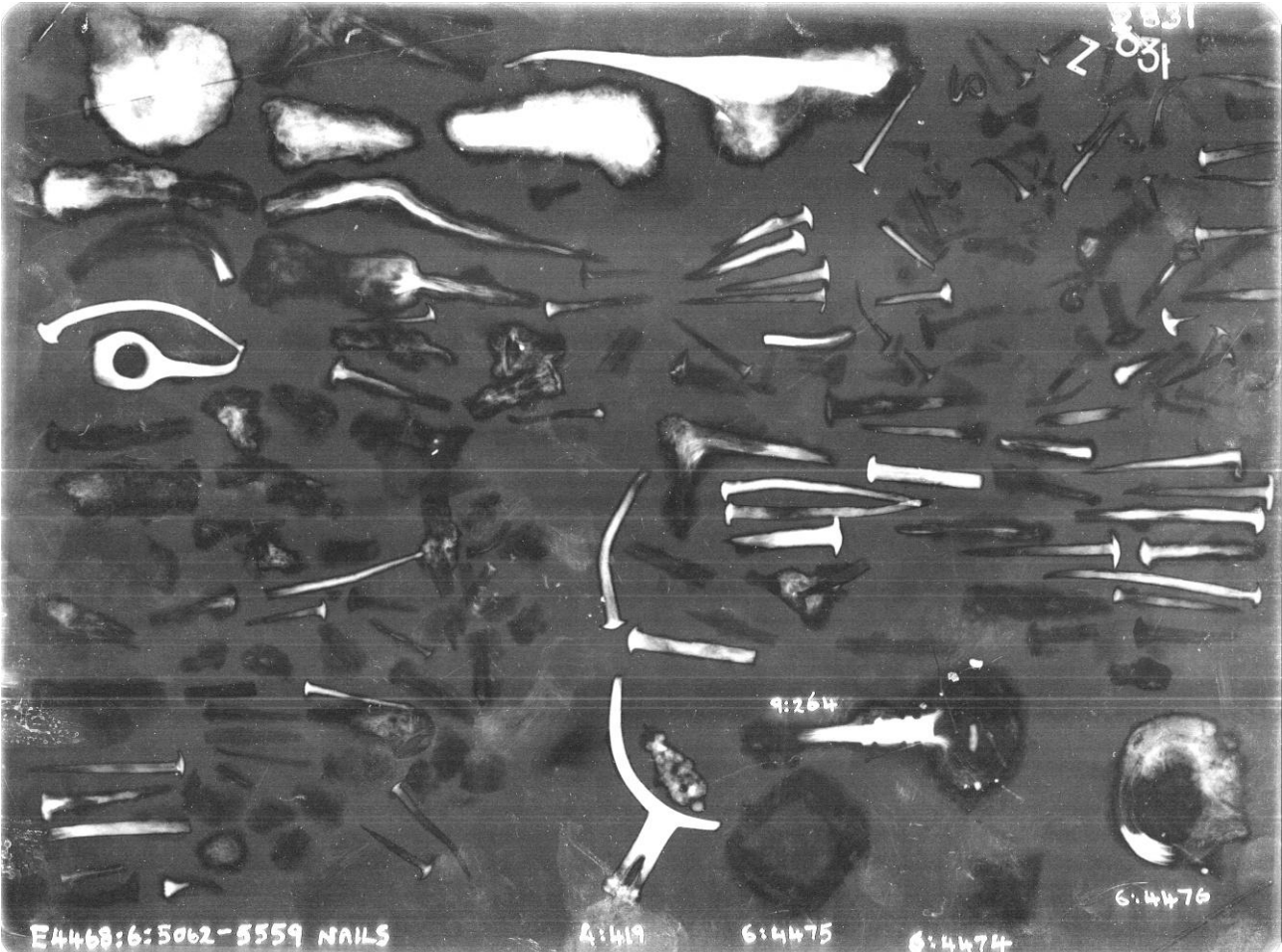


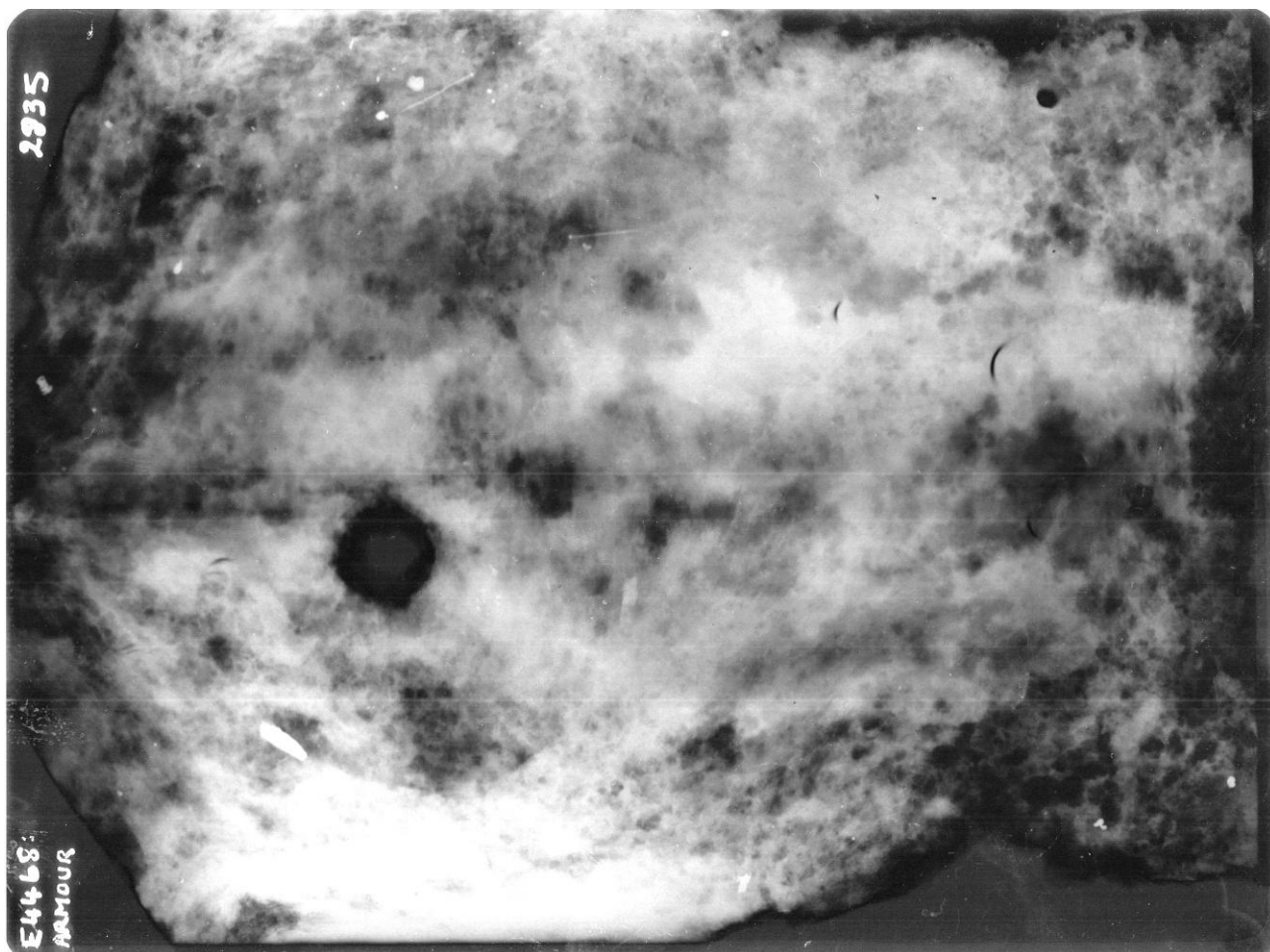
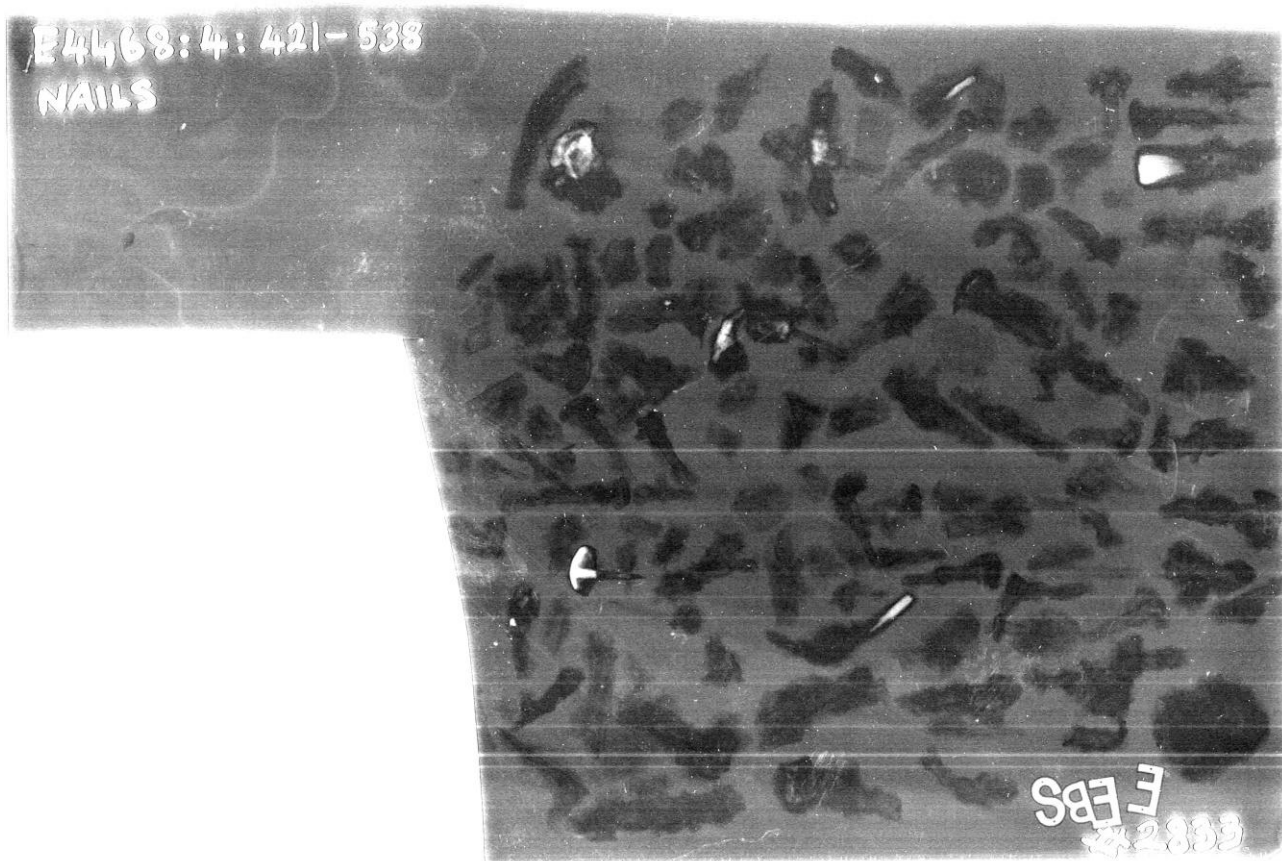














Report on the Military Artefacts from Rathfarnham Castle, Co. Dublin

Report Status: Final Report

Client: Archaeology Plan

Author: Damian Shiels

Date: November 2015



CONTENTS	PAGE
1. Introduction	3
2. The Rathfarnham Military Assemblage	3
3. The Lead Projectiles	3
4. Other Lead Objects	15
5. The Gunspalls	20
6. Other Military-Related Objects	25
7. Armour	26
8. Discussion	29

Bibliography

Appendix A. Lead Weights

Plates

- Plate 1. General view of the lead projectile assemblage
- Plate 2. Selection of lead weights from the assemblage
- Plate 3. Gunspall and debitage assemblage
- Plate 4. Gilded copper-alloy dagger chape E4468:6:4696

1. Introduction

Over a period of six months between June 2014 and January 2015, Archaeology Plan carried out a programme of archaeological monitoring on behalf of the Office of Public Works (Giacometti 2015, 1). This specialist report was commissioned by Archaeology Plan to examine and discuss the military finds that were retrieved as a result of those works. The majority of the finds from the excavation, including those military artefacts discussed below, were uncovered during works in the south-west flanker of the Castle. Here a 16th century washpit (C5) produced a dazzling array of artefacts— c. 17,500 objects in only 9 m³ of material. A preliminary assessment has dated this material to 1690 +/- 30 years (Ibid., 70-72).

2. The Rathfarnham Military Assemblage

The overall assemblage has been broken down into five sections to facilitate examination and discussion. These are the lead projectiles; other lead objects; the gunspalls; other military-related objects; and armour. Each section provides both technical detail related to the material and background information with respect to its form, use and function.

3. The Lead Projectiles

The principal method of identifying the potential firearms represented by the Rathfarnham lead projectile assemblage is by examining the calibre and bore of weapons in use at the time. Bore is established by calculating the number of bullets per pound of lead. In general terms, the lower the bore, the heavier the weapon; therefore a musket might be expected to cluster around 12 bore, while a carbine or pistol bore would be significantly higher. The calibre relates to the diameter of a bullet,

which, where undamaged, should also correlate (when windage is added) with the weapon type, e.g. pistols bullets are significantly smaller calibre than a musket. Unlike today, the bore and calibre of firearms were not standardised in the 17th century, leading to some variations between the sizes of bullets used for different weapon types. Given the suspected date of deposition of the Rathfarnham material, it is possible to use a number of other Irish assemblages for comparative purposes. One of the most important is the internationally significant hoard of 2,701 lead shot recovered from the 1691 siege site of Ballymore, Co. Westmeath and now housed in the National Museum of Ireland. This hoard almost certainly represents buried Jacobite ammunition, and three definite calibres (with a possible fourth) have been identified by Dr. Glenn Foard following analysis of a sample of this assemblage (Foard 2012, 58). There were virtually no 12-bore bullets in evidence, with the principal concentrations being within the 14 (31.25– 33.25g), 15 (29.25– 31g), 18 (24.5– 25.5g) and 19 (23.25– 24.25g) bore parameters (Ibid.). The majority of the firearms of this period housed in the Royal Armouries collections in Leeds follow three main calibre types, mainly the musket (.75 in or 19.05 mm), carbine (.65 in or 16.51 mm) and pistol (.56 to .65 in or 14.22 to 16.51 mm); lead balls of larger or smaller calibre are generally assigned to canister and grape shot (pers. comm. Peter G. Smithhurst, Royal Armouries). Five pieces of shot were recovered during the University College Dublin School of Archaeology's pilot survey of the Battle of the Boyne site (1690) at Oldbridge, Co. Meath (00E0860). Discovered in Study Field 5, the two smaller pieces of shot were some 0.6 in (14.22 mm) in diameter and weighed 17.9g, while the remaining three bullets were 0.7 in (17.78 mm) in diameter, weighing some 32.5g. The former were interpreted as pistol shot and the latter as musket shot (pers. comm. Dr. Conor Brady). Probable Williamite ammunition excavated at the site of Bishop's Street Without in Derry ranged in diameter from 0.67 in (17.13 mm) to 0.74 in (18.885 mm) and were interpreted as musket shot (Logue & O'Neill 2007, 73-4). A total of seven lead bullets were recovered from the 1691 Aughrim battlefield during a metal detection survey (A024/000, R002) in advance of the M6 Galway to Ballinasloe Scheme. This included

bullets ranging from .575 in (14.6 mm) to .699 in (17.75 mm) in diameter, as well as hammered slugs (Shiels 2009, 5-8).

The Analysis

The tables below provide the technical information relating to each of the Rathfarnham Castle bullets.

Find No.	E4468:6:4512
Diameter	19.16 mm
Weight	39.3 g
Bore	12
Description	Lead bullet with grey patina. Heavily damaged surface. Flattened area on one side of ball due to oversnipped sprue. No visible trace of mould seam. Bore indicative of musket.

Find No.	E4468:6:4509
Diameter	18.75 mm
Weight	39 g
Bore	12
Description	Lead bullet with grey patina. Damaged surface with slight evidence for mould seam and area of sprue-snip. Bore indicative of musket.

Find No.	E4468:6:4503
Diameter	19.26 mm
Weight	35.5 g
Bore	13

Description	Lead bullet with grey patina. Heavily damaged surface with traces of mould seam and area of sprue snip. Bore indicative of musket.
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Find No.	E4468:6:4497
Diameter	18.08 mm
Weight	33.4 g
Bore	14
Description	Lead bullet with grey patina. Possible turning-line from the mould visible on one end. Mould seam and sprue snip visible. Bore indicative of musket.

Find No.	E4468:6:4510
Diameter	18.96 mm
Weight	32.7 g
Bore	14
Description	Lead bullet with grey patina. Heavily damaged surface with some minor accretions. Mould seam visible, with slightly oversnipped sprue. Bore indicative of musket.

Find No.	E4468:6:4511
Diameter	17.94 mm
Weight	32.0 g
Bore	14.5
Description	Lead bullet with grey patina. Smooth surface with retained evidence for sprue-snip. Slight accretions. No mould seam visible. Bore indicative of musket.

Find No.	E4468:6:4502
Diameter	17.85 mm
Weight	32.3 g
Bore	14.5
Description	Lead bullet with grey patina. Area of sprue snip visible, slight traces of mould seam. Bore indicative of musket.

Find No.	E4468:6:4515
Diameter	15.10 mm
Weight	20.2 g
Bore	22.5
Description	Lead bullet with grey/white patina. Mould seam visible. Bore indicative of carbine/pistol.

Find No.	E4468:6:4513
Diameter	15.25 mm
Weight	20.2 g
Bore	22.5
Description	Lead bullet with grey patina. Flat area on one side of ball due to oversnipped sprue. Some surface damage. No visible trace of mould seam. Bore indicative of pistol/carbine.

Find No.	E4468:6:4498
Diameter	14.94 mm
Weight	19.5 g

Bore	23.5
Description	Lead bullet with grey patina. Flattened area on one side of ball due to slightly oversnipped sprue. Mould seam visible. Slightly damaged surface. Bore indicative of pistol/carbine.

Find No.	E4468:6:4508
Diameter	14.36 mm
Weight	15.7 g
Bore	29
Description	Lead bullet with grey patina. Flat area on one side due to slight oversnipping of sprue. Damage to surface. No visible trace of mould seam. Bore indicative of pistol.

Find No.	E4468:6:4506
Diameter	13.51 mm
Weight	13.6 g
Bore	33.5
Description	Lead bullet with grey patina. Smooth surface with no discernible mould seam or sprue visible. Bore indicative of pistol.

Find No.	E4468:6:4514
Diameter	13.4 mm
Weight	13.1 g
Bore	35

Description	Lead bullet with grey patina, some evidence for damage to surface. Vestigial traces of sprue, no evidence for mould seam. Poor surface condition. Bore indicative of pistol.
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Find No.	E4468:6:4507
Diameter	13.11 mm
Weight	12.8 g
Bore	35.5
Description	Lead bullet with grey patina. Smooth surface with raised unsnipped sprue. No visible mould seam. Bore indicative of pistol.

Find No.	E4468:9:285
Diameter	12.1 mm
Weight	12.4 g
Bore	37
Description	Lead bullet with accretion attached to one side. No evidence for sprue or mould seam. Bore indicative of pistol.

Find No.	E4468:6:4501
Diameter	12.63 mm
Weight	10.6 g
Bore	43
Description	Lead bullet with grey patina. Mould seam visible; top and bottom half slightly offset due to misalignment of upper and lower half of mound during moulding process. Bore indicative of pistol.

Find No.	E4468:6:4516
Diameter	11.6 mm
Weight	8.5 g
Bore	53.5
Description	Lead bullet with grey patina. Poor surface condition. Flat surface on one end due to oversnip of sprue. No mould seam visible. Bore indicative of pistol.

Find No.	E4468:6:4505
Diameter	10.77 mm
Weight	7.4 g
Bore	61.5
Description	Lead bullet with grey/white patina. Heavily damaged surface. Slight evidence for mould seam and sprue snip. Bore indicative of pistol.

Find No.	E4468:6:4499
Diameter	10.71 mm
Weight	7 g
Bore	65
Description	Lead bullet with grey patina. Smooth surface with raised unsnipped sprue. No visible mould seam. Bore indicative of pistol.

Find No.	E4468:6:4500
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Diameter	10.88 mm
Weight	7 g
Bore	65
Description	Lead bullet with grey patina. Smooth surface with traces of mould seam and sprue-snip visible. Bore indicative of pistol.

Find No.	E4468:6:4504
Diameter	9.27 mm
Weight	4.9 g
Bore	93
Description	Lead bullet with grey/white patina. Slight evidence for mould seam and sprue-snip. Bore indicative of pistol.

Find No.	E4468:6:4517–4595
Diameter	3.3 mm to 4.6 mm
Weight	0.2 g to 0.5 g
Bore	2268– 907.5
Description	Various small sizes of lead pellets. Possible shot for fowling

Find No.	E4468:6:4612
Weight	17.7 g
Length & Width	L: 18.69 mm W: 10.23 mm
Thickness	10.23 mm
Description	Hammered lead slug, probably intended for use as a bullet

Discussion

The figure below breaks down the Rathfarnham lead bullet assemblage by bore (x-axis) and number of bullets (y-axis). Seven of the bullets are from musket type-weapons, with three in the carbine/pistol range and the remainder falling within the 'pistol' category. The overall condition of the assemblage was poor, symptomatic of the conditions in which the lead has been contained since deposition. Although a number of the bullets showed signs of surface damage, this is almost certainly as a result of corrosion rather than impact or scouring damage. In addition the processes at play seem to have led to the smoothing of the surface of a number of other bullets in the assemblage. None of the bullets exhibited any clear evidence for having being fired.

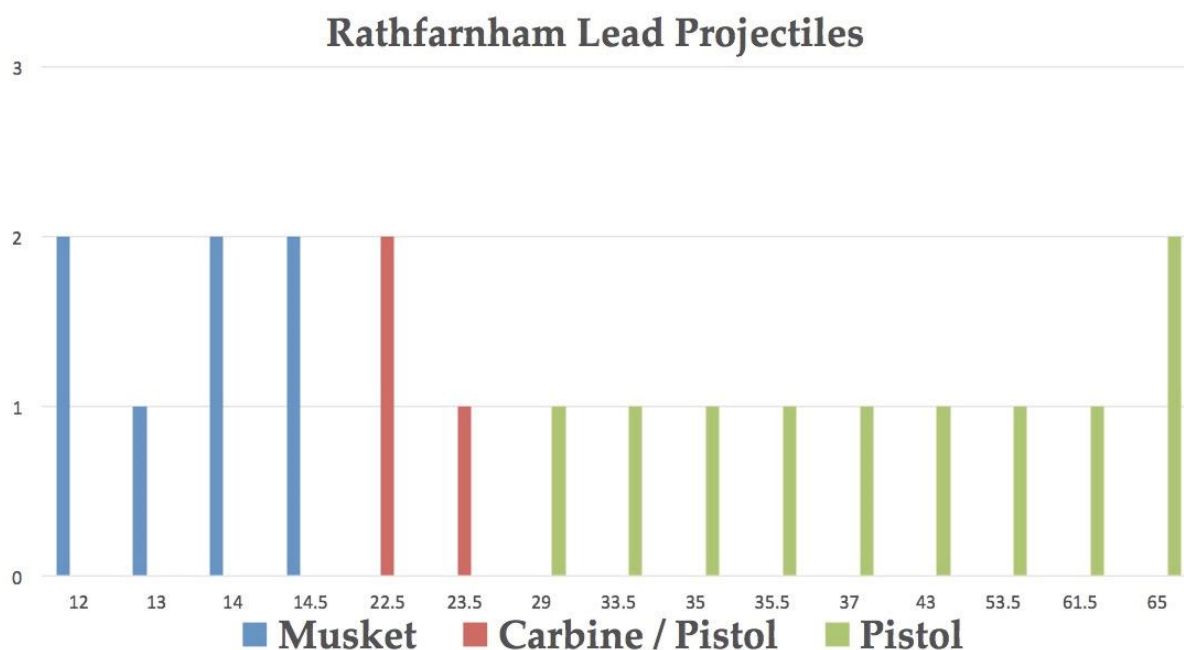


Figure 1. Rathfarnham Lead Projectiles (minus pellets and slug).

The larger bullets at Rathfarnham would have been employed in the heaviest small arms of the period, such as the flintlock or snaphaunce/matchlock musket. The matchlock and flintlock systems (and to a lesser extent the wheellock) were the main form of firing mechanisms in use during the 17th century. As the century progressed the newer flintlock mechanism began to gain favour over the matchlock, so that by the 18th century it would be the mechanism of choice in all major European forces.

However, matchlocks predominated during the wars of the 1640s, and were still to be found on battlefields such as those of the Williamite Wars of the 1688-91. The matchlock was the first mechanical device developed to fire a weapon (Peterson 1964, 199-200). An arm, called the serpentine, gripped a lit match that was lowered to the pan by pulling the trigger, firing the gun. A matchlock musketeer would carry with him his gun, a pouch with musketballs, a cleaning kit, matchcord (made of flax or hemp), a flask of fine priming powder for use in the pan and a bandolier of cartridges containing powder for the barrel (Roberts 2002, 9). This weapon had a number of drawbacks caused by its need for a lit match; it was difficult to operate in wet conditions and gave away the position of its owner in darkness.

The snaphaunce, or early flintlock, did not rely on a lit match. Instead this weapon carried a flint, held in place by a cock. When the trigger was depressed the cock, carrying the flint, moved forward to strike a steel, creating a spark which ignited the powder in the priming pan. The name derives from the Dutch *schnapp-hahn*, meaning 'pecking cock', a reference to the action of the cock in striking the steel (Peterson 1964, 304-5). Although in modern usage a snaphaunce refers to the form of flintlock where the steel and pan cover were separate components, in the seventeenth century the term was often used for any form of firearm which discharged using a striking cock (Ibid.).

A number of the bullets may have been intended for use in wheellock pistols, which although more efficient than the matchlock was a more complex and more expensive mechanism. However, it seems probable that the Loftus household of the late 17th century would have been well placed to afford such weapons. The wheellock functions by using a pan fixed the side of the gun barrel, with a touchhole leading into the chamber. At the bottom of the pan is a slot through which protrudes the upper edge of a steel wheel, which is carried on a shaft (arbor). A chain of three links connected to a mainspring is wound around this shaft; the shaft itself can be turned using a specific wrench or spanner which rotates the wheel and winds the chain around the shaft. When it has been wound up fully the nose of a sear slips into a

depression in the wheel and holds it in place until the trigger is depressed (Peterson 1964, 334-5). When this occurs the wheel rotates and makes contact with a piece of iron pyrites held in a doghead clamp, creating a spark which ignites the powder and discharges the weapon.

The small numbers of intermediate bullets uncovered at Rathfarnham would have served the lighter carbine (as was employed by the harquebusier, see below) or also may have served larger pistols. However, the vast majority of the Rathfarnham assemblage is of pistol bore. The majority of these bullets could have been employed in a dual-role, either in a military capacity or for hunting. Indeed it seems probable that many of the smaller pistol shot were intended for the latter function. The 78 small lead pellets (E4468:6:4517–4595) ranging in size from 3.3mm to 4.6mm are an unusual survival and it is the first time they have been encountered by this author from such a context. They are similar in size to some of the small projectiles found at the site of a c. 1690 wreck of the *Elizabeth and Mary* at Anse aux Bouleaux, Québec, Canada (<http://www.mcc.gouv.qc.ca/phips/wreck17.htm>). It is likely some were employed in fowling pieces– smoothbore guns designed to fire a number of pellets at one time and used for hunting small game such as birds. The forerunner of the modern-day shotgun, the shot used in these weapons was often referred to as ‘swan shot’ and ‘goose shot.’ From the early seventeenth century onwards long fowlers were being produced, with barrels occasionally ranging from 5 to 6 feet in length (Peterson 1964: 138).

One of the most interesting bullets in the assemblage is E4468:6:4612, a lead slug. A slug is an elongated bullet, which has been hammered from its original spherical form in order to create a cylindrical shape. The purpose of this seems to have been to enable the firing of larger weight of ball in a smaller calibre weapon– e.g. to enable the use of a musketball in a carbine, or that of a carbine in a pistol. It has therefore been suggested that they were most frequently employed by cavalry (Foard 2012: 77). Two slugs were recovered from the Lutrell’s Pass assemblage on the 1691 Aughrim battlefield (Shiels

2009), roughly contemporaneous with the deposition of this assemblage. The Rathfarnham slug has been hammered into a roughly hexagonal form, and the fold created by the hammering of the lead is visible on one of the hexagonal surfaces.

4. Other Lead Objects

A large number of other lead objects were recovered during the Rathfarnham excavations. Of these 22 were identifiable as forms of lead weight, which, although they may have been used for military purposes (such as the weighing of powder etc.) were most likely multifunctional. These weights are catalogued in Appendix A below. In addition there were a further 20 lead objects such as bars, ingots and cut pieces that are not clearly identifiable as intended for military use, but which may have been intended for that purpose. These are catalogued in detail in the tables below.

Find No.	E4468:7:517
Weight	69.8 g
Length & Width	L: 57.97 mm W: 14.95 mm
Thickness	13.71 mm
Description	Rectangular lead ingot

Find No.	E4468:4:171
Weight	69.2 g
Length & Width	L: 52.17 mm W: 18.4 mm
Thickness	14.29 mm
Description	Irregular rectangular lead ingot

Find No.	E4468:6:4601
Weight	69.6 g
Length & Width	L: 45.36 mm W: 34.11 mm

Thickness	8.24 mm
Description	Scallop/teardrop shaped lead weight

Find No.	E4468:9:280
Weight	10.8 g
Length & Width	L: 16.04 mm W: 15.77 mm
Thickness	5.12 mm
Description	A small cut piece of square/rectangular lead

Find No.	E4468:9:281
Weight	7.8 g
Length & Width	L: 16.92 mm W: 14.02 mm
Thickness	3.53 mm
Description	A small cut piece of square/rectangular lead

Find No.	E4468:9:282
Weight	8.2 g
Length & Width	L: 18.75 mm W: 13.72 mm
Thickness	3.57 mm
Description	A small cut piece of square/rectangular lead

Find No.	E4468:7:518
Weight	5.1 g
Length & Width	L: 18.37 mm W: 9.41 mm
Thickness	3.56 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:519
Weight	9.8 g
Length & Width	L: 19.59 mm W: 15.00 mm
Thickness	3.81 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:520
Weight	8.0 g
Length & Width	L: 18.70 mm W: 13.78 mm
Thickness	3.63 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:521
Weight	7.0 g
Length & Width	L: 16.52 mm W: 12.88 mm
Thickness	4.03 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:522
Weight	7.1 g
Length & Width	L: 18.45 mm W: 12.88 mm
Thickness	3.41 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:523
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Weight	7.5 g
Length & Width	L: 16.22 mm W: 14.53 mm
Thickness	3.53 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:524
Weight	4.7 g
Length & Width	L: 15.15 mm W: 9.2 mm
Thickness	3.49 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:525
Weight	7.2 g
Length & Width	L: 18.57 mm W: 12.34 mm
Thickness	3.59 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:526
Weight	5.0 g
Length & Width	L: 19.20 mm W: 14.34 mm
Thickness	1.99 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:527
Weight	6.7 g
Length & Width	L: 18.59 mm W: 12.20 mm

Thickness	3.57 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:7:528
Weight	6.5 g
Length & Width	L: 16.63 mm W: 13.14 mm
Thickness	3.53 mm
Description	Small square/rectangular piece of cut lead

Find No.	E4468:6:4611
Weight	19.4 g
Length & Width	L: 34.85 mm W: 13.64 mm
Thickness	5.57 mm
Description	Rectangular lead ingot

Find No.	E4468:9>279
Weight	61.0 g
Length & Width	L: 45.65 mm W: 25.71 mm
Thickness	6.05 mm
Description	Irregular rectangular lead ingot

The two main elements of this portion of the assemblage consist of lead ingots of varying sizes and differential pieces of flat cut lead. The purpose of this material is uncertain, but fulfilment of a range of functions seems likely, one of which would have been military use. It is known for example that troops both carried and collected scrap lead to melt down into bullets; evidence of on-site production has been uncovered at

a number of sites, including that of the 1601 siege of Kinsale, Co. Cork (Shiels 2008, 147-8). Lead ingots and small pieces of cut lead were ideal for this purpose, and it may be the case that this was one of the intended purposes of some of the material from Rathfarnham Castle. Lead was an easily melted and manipulated metal, so by providing it in forms such as ingots it presented soldiers with an opportunity to use local moulds to produce bullets of the correct calibre for their specific weapons. Given the fact that evidence for lead bullet modification in the form of a slug (E4468:6:4612) has been identified, as has the probable on-site production of gunspalls (see Section 5 below), it seems highly probable that lead bullet production was taking place at Rathfarnham Castle during the period of its garrisoning. This likely continued into the years beyond the wars of mid-century in order to meet needs such as the provision of hunting ammunition.

5. The Gunspalls

The fact that weapons using the flintlock technology outlined above were in use at Rathfarnham in the 17th century is evidenced by the discovery of a number of gunspalls and probable associated debitage. The discovery of these gunspalls or gunflints in association with waste product from the manufacturing process is unusual in an Irish context. A number of different methods of gunspall production are known. Among the most effective was blade production, a system whereby a single knapper could produce up to 1500 gunflints per day (White 1975, 65). The knapper would first quarter a flint nodule, at the same time producing a striking place for splitting blades, which were then sectioned to create gunflints (Ibid.). The type of process that seems to be in evidence at Rathfarnham is direct percussion, which produced gunspalls in the form of wedge-shaped flakes, each of which have a pronounced bulb of percussion at the point of impact (Ibid. 65-6). Of the sixteen pieces of flint recovered three had been formed into gunspalls, with the remainder of the

assemblage apparently representing waste pieces. The flint assemblage is outlined in more detail in the tables below.

Find No.	E4468:6:4489
Width	24.47 mm (at firing edge)
Length	20.80 mm
Thickness	6.85 mm
Description	Grey flint. Firing edge incomplete, either a result of use or during manufacture. Firing edge opposite bulb of percussion.

Find No.	E4468:6:4486
Width	24.49 mm (at firing edge)
Length	19.19 mm
Thickness	5.65 mm
Description	Chert. Firing edge on right side of flake, 45 degrees from bulb of percussion.

Find No.	E4468:6:4487
Width	27.62 mm (at firing edge)
Length	19.9 mm
Thickness	8.01 mm
Description	Brown flint. Firing edge opposite bulb of percussion.

Find No.	E4468:9:273
Width	22.77 mm
Length	16.33 mm

Thickness	4.55 mm
Description	Grey flint. Probable waste piece, debitage.

Find No.	E4468:9:271
Width	31.55 mm
Length	23.24 mm
Thickness	9.14 mm
Description	Grey flint. Probable waste piece, debitage.

Find No.	E4468:4:64a
Width	26.36 mm
Length	19.76 mm
Thickness	18.15 mm
Description	Grey flint. Probable waste piece, debitage?

Find No.	E4468:4:64b
Width	19.23 mm
Length	13.10 mm
Thickness	5.77 mm
Description	Grey flint. Probable waste piece, debitage.

Find No.	E4468:6:4488
Width	24.83 mm
Length	30.06 mm
Thickness	20.48 mm
Description	Brown flint. Probable waste piece, partial core.

Find No.	E4468:6:4490
Width	16.26 mm
Length	33.05 mm
Thickness	9.17 mm
Description	Grey flint. Probable waste piece, debitage.

Find No.	E4468:9:272
Width	26.04 mm
Length	13.98 mm
Thickness	5.71 mm
Description	Brown flint. Probable waste piece, debitage.

Find No.	E4468:6:4491
Width	19.58 mm
Length	41.81 mm
Thickness	16.59 mm
Description	Grey flint. Probable waste piece, Core?

Find No.	E4468:6:4492
Width	13.61 mm
Length	18.87 mm
Thickness	9.17 mm
Description	Grey flint. Probable waste piece, debitage. Associated with E4468:6:4491.

Find No.	E4468:6:4493
Width	17.66 mm
Length	22.17 mm
Thickness	4.76 mm
Description	Grey flint. Probable waste piece, debitage. Associated with E4468:6:4491.

Find No.	E4468:6:4494
Width	10.48 mm
Length	9.10 mm
Thickness	7.67 mm
Description	Grey flint. Probable waste piece, debitage. Associated with E4468:6:4491.

Find No.	E4468:6:4495
Width	13.15 mm
Length	12.68 mm
Thickness	2.91 mm
Description	Grey flint. Probable waste piece, debitage. Associated with E4468:6:4491.

Find No.	E4468:6:4496
Width	22.58 mm
Length	11.14 mm
Thickness	3.93 mm
Description	Grey flint. Probable waste piece, debitage. Associated with E4468:6:4491.

It is unclear if the three fully formed gunspalls were ever used; E4468:6:4489 is missing part of the firing edge, which may have resulted from an accidental breakage during final retouching work, or as a result of use. The majority of the other flakes seem to be debitage caused during the direct percussion manufacturing process. Some, such as E4468:6:4488, may have been used as cores from which potential spalls were struck. The three complete examples can be compared favourably with those from the 1689 Williamite site of Bishop's Street Without in Derry, which produced a number of examples of similar size and form and which also produced evidence for on-site manufacture (Logue & O'Neill 2007, 70-1). It seems likely therefore that the spalls and the debitage result from on-site manufacture at Rathfarnham Castle, most probably in close proximity to the location of their ultimate deposition.

6. Other Military-Related Objects

There were two other military accoutrements of note in the Rathfarnham assemblage, a gilded copper-alloy dagger chape E4468:6:4696 and a scabbard hanger E4468:6:23B. The chape weighs 4.3 g and is 51.32 mm in maximum length. Its width at the aperture is 11.42 mm and at the base is 3.54 mm. The chape is formed from a single piece of sheet metal folded over itself, with the finial of the point formed into a sphere for decoration. Review of other contemporary assemblages has not identified a precise parallel for this object, though there is nothing in its form to suggest it is not contemporary with the rest of the material deposited in this location and it is similar to examples depicted in contemporary 17th century illustrations (See for example Asquith 1999, Roberts 2000, Tincey 1998, Tincey 2002).

The scabbard hanger E4468:6:8089 was identified by leather specialist John Nicholl and is made up of three lengths of a soft folded goat leather belt with a central seam on the reverse. (Nicholl 2015, 11, 21). The seam itself bears no sign of stitching, but

there are two lines of stitch holes running along each edge of the outer face. Two panels of similar leather which accompany the object were once stitched together, folded and sewn onto the belt, as a line of stitch holes on the belt match those on the leather panel, forming the hanger (Ibid.). The elements measure 180 mm, 220 mm and 200 mm in length, 25 mm in width and 1 mm in thickness (Ibid., 21). The makeup of this hanger demonstrates that it was a highly functional piece of equipment, intended for everyday service. As with the dagger chape, contemporary 17th century illustrations indicate that such hangers were in use at this time, and were worn by an array of troops, including mounted men such as harquebusiers but also by foot soldiers such as musketeers (See Tincey 1998, Tincey 2002, Tincey 2003).

One of the most intriguing finds from Rathfarnham Castle excavation is a small glass sword (E4468:2:183). Possibly Venetian, it is thought to be part of a 'Nevers' glass miniature diorama from *c.* 1680 (Giacometti pers. comm.). The miniature sword, though somewhat stylised, clearly represents a rapier of classic 16th/17th century form (Stone 199, 525). The flow of the glass is designed to replicate the decorated grip and pommel and also to be reminiscent of the curvature of the guard, which ultimately manifested itself in the swept hilt common to many of these weapons during the period.

7. The Armour

The wrought iron armour (E4468:6:1) uncovered during the excavation is a harquebusier breastplate and dates to the middle of the 17th century. The armour is heavily corroded, which has obscured or destroyed any identifiable armourer's marks. This has also concealed traces of attachments and fittings. The breastplate consists of a single piece body with a medial ridge, which terminates with a vestigial peascod over a pronounced flange, which is some 3.5 cm in depth. The breastplate has a raised neck of *c.* 16 cm diameter finished with a simple turn, as is the case with the

arm openings which are *c.* 18 cm in maximum diameter on the obverse side. The armour is *c.* 47.5 cm in length from neck to vestigial peascod and 33 cm in diameter from waist to waist. The waist itself is *c.* 13.5 cm in length. It is of note that the medial ridge is not proportionately placed in the centre of the breastplate, it being somewhat skewed to the right; as a result there is *c.* 15 cm between the ridge and the right waist line but *c.* 18cm between the ridge and left waist line. The armour itself survives to a thickness of *c.* 0.6 cm. A bullet-hole of *c.* 1.2 cm maximum diameter is located on the right abdomen of the armour; although now penetrating all the way through the breastplate, this is a symptom of corrosion and the conservation process, as images taken during excavation demonstrate that upon discovery the hole did not fully penetrate the metal.

The earliest armour set of this type is thought to have been made around 1635 for the future Charles II, then Prince of Wales (Richardson 2004, 11). Although the Rathfarnham example would originally have been composed of a harquebusier's pot (helmet), breastplate and backplate, only the breastplate was recovered during the excavations. The breastplate and backplate, referred to collectively as the cuirass, were attached to each other by means of leather shoulder straps with iron plates or scales attached for protection (Ibid., 14). These straps were attached by means of mushroom-headed studs at either side of the breastplate (which do not survive on the Rathfarnham example), that would connect with key-hole slots on the terminals of the shoulder straps (Ibid., 12). Often a leather belt was also worn around the waist. A number of leather and metal pieces found in association with the Rathfarnham breastplate are likely to represent the remains of these fittings and attachments (notably E4468:6:3, E4468:6:4, E4468:6:5, E4468:6:7 and E4468:6:8). As they were still awaiting final conservation at the time of analysis their association could not be confirmed, but a visual inspection of leather fragments such as E4468:6:4 suggested that they match the form of what would be expected. It is likely that the remains represent both the leather straps and some of the metal plates originally stitched onto

them. The bullet-hole in the right abdomen is not a result of combat but rather is a proofing mark; this involved the firing of a bullet at the armour in order to supply 'proof' that it could withstand pistol and caliver shot (Ibid., 15).

This form of armour continued in production into the late 17th century. In the later years of the reign of Charles II and into that of James II the armour waistline dropped, matching contemporary male fashion, which favoured a deeper-waist (Ibid.). Undoubtedly earlier 17th century pieces remained part of armouries throughout the three Kingdoms until well into the latter part of the century. The armour was designed to be worn over a leather buffcoat by a harquebusier. These were mounted troops carrying a 'harquebus' a form of carbine that was lighter than a musket (Peterson 1964, 26-7). In his 1644 treatise 'The Young Horse-Man, Or, The Honest Plain-Dealing Cavalier', John Vernon described the appearance of the harquebusier:

The Harbuyusers and Carbines arming is chiefly offensive, his defensive Arms, are only an open Caske or Head-peece, a back and brest with a buffe coat under his armes; his offensive Armes are a good Harquebus, or a Carbine hanging on his right side in a belt by a sweble, a flask and Carthareg case, spanner, and t[w]o good fire-lock pistols in houlsters. At his saddle a good stiffe sword sharp pointed, and a good poll-axe in his hand, a good tall horse of fifteen handfuls high, strong nimble, with false raines to your bridle made of an Iron Chain as the former. (Tincey 1993, 42).

Among a list of items issued to the New Model Army in 1645/6 were 'two hundred armes backs brests and potts at 20s per suite' (Tincey 2003, 12). Although it does not seem to have been universally worn, such armour remained an important military accoutrement throughout the wars that engulfed the kingdoms during this period.

The Rathfarnham harquebusier breastplate is similar in style to those from the Littlecote House Collection, the most significant surviving armoury of the English Civil War and it is likely to date from broadly the same period. It does not appear to

be a particularly well-executed piece, which may be a symptom of large-scale production during a time of need. Rathfarnham Castle itself was subject to significant upheaval during the Confederate Wars in Ireland (1641-53) and it may well be the case that the armour found its way to the castle in this period. Held by a Royalist garrison in 1641, the Castle was handed over to the Parliamentarians in 1647, before being stormed and taken by the Royalists again in 1649 (Giacometti 2015, 13). Aside from the garrison located in the Castle during this time, it is also worth noting that much of the landed gentry maintained armouries of their own (as with Littlecote) and so this set may have formed part of Rathfarnham Castle's equivalent, after the Castle was taken over again by Adam Loftus.

8. Discussion

The Rathfarnham military assemblage is one of the most impressive dating to the period uncovered in Ireland. Taken together it provides an insight into the military activity at Rathfarnham Castle through the second half of the 17th century. Although what remains is fragmentary, one interpretation is that the majority of this material was discarded either during the course of the Confederate Wars when the Castle was garrisoned variously by Royalist and Parliamentarian troops. Another is that the Loftus family maintained an armoury during the latter part of the 17th century and that this represents material discarded from it. A number of elements in the assemblage suggest that on-site production of military necessities was taking place, such as the manufacture of gunspalls and lead bullets. Again, this may relate to garrison activity during times of conflict, or the maintenance of an armoury in the latter decades of the 17th century— perhaps largely given over to activities such as hunting.

Much of the material in the assemblage can be associated with cavalry activity. The lead bullet assemblage is dominated by pistol shot, weapons associated with mounted

troops. A slug is also present, a bullet thought to be associated with cavalry. The harquebusier armour is similarly intended for use by a mounted man; these troops would almost certainly have been armed with carbines which used flintlock mechanisms and therefore required gunspalls. Although it cannot be said with any degree of certainty, it may be that the men or the armoury located at Rathfarnham had a focus on the mounted arm. It would be interesting to discover if the makeup of the troops located at the Castle can be established, or if historical research into the activities of the Loftus family during the war years (or afterwards) sheds any light on any potential marital roles they may have held.

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Appendix A. Lead Weights.

Site	Find No.	Weight (grams)	Diameter (mm)	Thickness (mm)	Notes
Rathfarnham Castle, Co. Dublin	E4468:6:4596	57.5	30.3	7.52	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4603	57.6	29.5	8.57	Circular
Rathfarnham Castle, Co. Dublin	E4468:9:274	14.4	29.39	4.13	Circular, marked 'C' 'C'
Rathfarnham Castle, Co. Dublin	E4468:3:161	48	32.2	6.3	Circular
Rathfarnham Castle, Co. Dublin	E4468:9:278	31.3	40.71	3.14	Irregular circular
Rathfarnham Castle, Co. Dublin	E4468:7:516	45.6	63.19	6.02	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4610	28.1	47.48	3.46	Irregular circular (halved)

Site	Find No.	Weight (grams)	Diameter (mm)	Thickness (mm)	Notes
Rathfarnham Castle, Co. Dublin	E4468:6:4597	44.5	31.05	6.39	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4607	43.1	30.29	6.83	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4606	67.5	32.27	8.92	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4598	43.2	29.17	8.14	Sub-circular (Oval)
Rathfarnham Castle, Co. Dublin	E4468:9:277	31.7	32.92	3.89	Sub-circular
Rathfarnham Castle, Co. Dublin	E4468:4:172	47.4	31.19	8.39	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4600	75.2	39.52	6.66	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4604	50.9	33	7.84	Circular

Site	Find No.	Weight (grams)	Diameter (mm)	Thickness (mm)	Notes
Rathfarnham Castle, Co. Dublin	E4468:9:275	34.2	35.38	4.65	Circular (similar to 'C''C'
Rathfarnham Castle, Co. Dublin	E4468:6:4609	86.5	33.79	10.27	Circular
Rathfarnham Castle, Co. Dublin	E4468:9:276	35	34.47	4.61	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4602	65.3	32.97	8.43	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4608	58.4	33.33	7.5	Circular
Rathfarnham Castle, Co. Dublin	E4468:6:4599	70.8	41.5	6.57	Sub-circular
Rathfarnham Castle, Co. Dublin	E4468:6:4605	38	37.57	4.9	Sub-circular



Plate 1 - General view of the lead projectile assemblage



Plate 2 - Selection of lead weights from the assemblage



Plate 3 - Gunspall and debitage assemblage



Plate 4 - Gilded copper-alloy dagger chape E4468:6:4696