

Dirty Money: Lingwell Gate's Roman Coin Moulds

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1.0 Introduction

Between c.1695 and the 1830s hundreds of Roman clay coin moulds and a number of funnels, crucibles, and cast coins were found at Lingwell Gate, near Wakefield, used and discarded through the process of casting copies of silver *denarii* dating between the late 1st and mid-3 centuries AD. In the early nineteenth century these discoveries drew the attention of a broad community of antiquarians, many of whom visited the abundantly productive site and collected objects for personal study, dispersing the material across the country. The exact number of moulds found at Lingwell Gate is unknown, but just one antiquarian investigation in 1821 was reported to have produced ‘a wheelbarrow-full’ of moulds.¹ This project has successfully traced over 300 moulds dispersed between at least eight museum collections. An unknown number have been lost or are yet to be rediscovered in public and private collections. Lingwell Gate is one of the most productive known sites of Roman coin copying in Britain. The assemblage offers invaluable insights into the real-life impacts of economic change, at the watershed between the decline of the *denarius* and the rise of the radiate, on the people living in Roman Yorkshire, Roman Britain, and across the Roman Empire.

In 2017 the Yorkshire Museum undertook an Arts Council England Designation Development Fund supported ‘Old Collections, New Questions’ project to assess the research potential of our Roman collections. Large parts of the Yorkshire Museum’s Roman collections had been acquired in the nineteenth century, and in many cases had not been actively researched or reinterpreted since their acquisition. A Research Agenda was produced, which identifies a number of research projects which could be undertaken to find out more about these objects.²

The Yorkshire Museum’s collection of 54 Lingwell Gate moulds was rediscovered over the course of the ‘Old Collections, New Questions’ project, along with a series of letters written in 1930 from researcher Arthur E. Robinson to Walter E. Collinge, the then Keeper of the Yorkshire Museum. One of the projects identified as having excellent potential for future research was to trace Lingwell Gate coin moulds in museum and private collections, to identify the coin types being copied, to locate the findspot, to reassess their probable production date, and to re-evaluate the assemblage from a twenty-first century perspective.

The 2019-2020 Money and Medals Network Regional Research Fellowship grant has provided an excellent opportunity to undertake research into the Lingwell Gate coin moulds. It is hoped that the research and analysis set out in this report will provide a summary assessment of the Lingwell Gate site and assemblage and will serve as the basis for future exploration of some of the many complex questions posed by these objects.

¹ *Leeds Intelligencer*, 13th April 1826.

² E. Tilley (ed.), *Old Collections, New Questions: Researching the Roman Collections of the Yorkshire Museum*, 2018.

2.0 Research Questions

Over the course of the project three central research strands emerged, the first centred on the whereabouts of the moulds today, the second on the period during which the moulds were discovered, and the third on the Roman period.

Each of these strands consists of one core question, which underpins all the research into each topic. Subordinate to these core questions are a number of focussed questions which have been the subject of more targeted research. Together these focussed questions build an informed assessment of some of the factors that contribute to the understanding of the three core topic questions.

These tiered topic question structures are set out below, and will form the basis of the analysis in section 5.0.

Today

1. *Where are the Lingwell Gate coin moulds?*

Discovery Period

2. *When and how were the moulds discovered?*
 - a. What is the precise findspot of the moulds?
 - b. What record is there of the discovery and collection of the Lingwell Gate coin moulds?

Roman Period

3. *Why were the coin moulds made?*
 - a. How did the Lingwell Gate coin moulds function?
 - b. What types of coin were being copied?
 - c. How does the assemblage compare to coin loss and coin hoard data?
 - d. What was the production period for the Lingwell Gate moulds?
 - e. How can the findspot inform our understanding of the Lingwell Gate coin moulds?

3.0 Literature Review

In order to begin to understand the significance and research potential of the Lingwell Gate coin moulds it is necessary to contextualise this project within the wealth of literature discussing their discovery, the phenomenon of copying Roman coins using coin moulds, and the Roman economy in the late-second and early-third centuries AD. It has not been possible within the scope of this project to undertake a fully comprehensive literature review of all the relevant materials. However, an overview has been set out below, including reference to the texts which proved to be most salient to this project.

3.1 Late Second and Early Third Century Economy

The late second and early third centuries were a pivotal period of change in the functioning and structure of Roman coinage. Throughout the second century the *denarius* became increasingly debased, containing only about 50% silver by AD 217 compared to 80% in AD 193, possibly due to the demand for more *denarii* to fulfil huge pay increases for the military at a time when silver reserves were insufficient.³ In AD 215 Caracalla introduced a new coin, the radiate,⁴ with an official value of two *denarii* but in reality containing a silver content equivalent to 1.5 *denarii*.⁵ This new coin type fell out of use four years later before being reintroduced in AD 238, after which point it became increasingly debased but was nevertheless accepted as the predominant coin while the *denarius* simultaneously fell out of use entirely.⁶ Many efforts have been made to understand the cause and effect of this change, and the real-life implications for people living, working, and trading across the Roman Empire through the numismatic evidence left behind, and many questions remain unanswered.

The beginning of the end of the *denarius* can probably be attributed to Septimius Severus. More *denarii* of Septimius Severus are found in Britain than of any other Roman emperor.⁷ This is thought to be in part due to a large influx of coinage that accompanied Septimius Severus and his imperial court to *Eboracum* (York) between AD 208 and 211, from where he coordinated military campaigns in Scotland.⁸ Severus also drastically increased pay for the Roman army, possibly doubling it, in AD 197, which necessitated the production and distribution of huge numbers of *denarii* to pay the soldiers.⁹ Walton's PAS data evidences this increase, showing a particular prevalence of the Severan denarius in the north of Britain, with fewer found in the south, which she posits could either reflect the presence of the Roman army or, alternatively or concurrently, could reflect a preference for silver coinage among the local population.¹⁰ Severus' financial support of the military paved the way for further massive pay increases,

³ S. Moorhead, *A History of Roman Coinage in Britain*, Greenlight Publishing, Essex, 2013, p.109.

⁴ The term *antoninianus* has been used in the past, after Caracalla's official name Antoninus, although more recent scholarship has shifted to the use of the term 'radiate' because the denomination is identified by a radiating crown. See R. Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, Spink, London, 2018, p.62.

⁵ Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, p.62.

⁶ *Ibid.*

⁷ Moorhead, *A History of Roman Coinage in Britain*, pp.108-109.

⁸ P. Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', PhD thesis, University College London, London, 2011, p.91.

⁹ R. Abdy, 'The Severans', in W. E. Metcalf (ed.), *The Oxford Handbook of Greek and Roman Coinage*, Oxford University Press, New York, 2012, p.504.

¹⁰ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', pp.103-105.

with Caracalla raising it by 50% and Maximinus Thrax, a soldier who became the emperor, increasing it even further, meaning increasing amounts of coinage was needed to meet demand.¹¹

In this changing monetary context, with greater volumes of debased coinage circulating, there was also a peak in copying of coinage. Scholars have suggested a number of explanations for this phenomenon, as are summarised below.

If demand for large numbers of officially produced *denarii* in military outposts at the edge of the Roman Empire exceeded supply, it has been suggested that the production of cast copies might have been an official undertaking to meet this demand or, if not fully sanctioned, might have been unofficially tolerated for the mutual benefit of the counterfeiters and the regional officials. This opinion was particularly prevalent in early discussions of the Lingwell Gate coin moulds.¹² Modern discussions do not rule out the theory entirely, although they tend to lean more towards the view that coin copying was tolerated rather than fully sanctioned.¹³ Indeed, Walton's evidence from the coinage deposited at Piercebridge reveals that copied coinage was in circulation among the military, whose responsibility it was to enforce the use of legitimate coinage, suggesting at least some official awareness of the predominance of coin copying in Britain.¹⁴

Official tolerance of unofficial coin production and circulation has some precedent in this period, especially if the copies had a low value, leading to the suggestion that copied *denarii* might not have been exchanged at face value. An increased demand for *denarii* in regions of the Roman Empire where the army was stationed was accompanied by a simultaneous shortage of lower denomination coinage, known as the period of 'minimal supply', possibly because supply chains had a limited capacity and had to prioritise the coinage used to pay the army.¹⁵ On the Continent this shortage resulted in the production of undersized cast copies of mostly second-century copper-alloy coinage, known as *limesfalsa* or "Frontier Forgeries", which fulfilled the need for small change using older copper-alloy coinage still in circulation, and which seems to have been unofficially accepted by the Roman regional officials.¹⁶ Late-second and early-third century Britain suffered the same shortage of lower denomination copper-alloy coinage and, while small numbers of *limesfalsa* are found in Britain, there is no evidence of a large number of copied copper-alloy coinage entering circulation in the province. It has

¹¹ Abdy, 'The Severans', pp.510-511.

¹² W. Knight, 'Roman Coin-moulds of Clay, found near Wakefield, in Yorkshire', in *Archaeologia*, Vol 24, 1831; Rev. J. B. Reade, 'Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830' in *Proceedings of the Numismatic Society*, 1836/1837-1838/1839; W. Boyne, 'On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.', in *Reliquiae Antiquae Eboracenses*, 1855; A. E. Robinson, 'False and Imitation Roman Coins', *Journal of the Antiquarian Association of the British Isles*, II, 1931, p.147.

¹³ Abdy, 'The Severans', p.504; J. Hall, 'With Criminal Intent? Forgers at Work in Roman London', *Britannia* Vol. 45, 2014, p.183; Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', pp.282-283.

¹⁴ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', pp.282-283.

¹⁵ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', p.85; Hall, 'With Criminal Intent? Forgers at Work in Roman London', p.172; Abdy, 'The Severans', p.504.

¹⁶ Moorhead, *A History of Roman Coinage in Britain*, p.113; Abdy, 'The Severans', p.504; Hall, 'With Criminal Intent? Forgers at Work in Roman London', p.168.

been suggested instead that cast copies of the *denarius* were widely recognisable and were used and tolerated as a lower value coinage in place of copper-alloy coins.¹⁷ Indeed, not only does the presence of the army in the third century lead to an increase in the number of *denarii* in circulation, it has also been shown to correlate with higher numbers of Severan copies and also of coin moulds found in these regions.¹⁸

There could, of course, be a far simpler explanation for the production of copied coinage. The decreased quality of the officially issued *denarii* created a potentially lucrative opportunity for individuals willing to risk the consequences of breaking the law. With Severan *denarii* containing only 50% silver it would have been profitable to use older *denarii* with a higher silver content to create two or more newer *denarii* with the same face value while still matching or almost matching the silver content of new official issues.¹⁹ Creighton queries why copied coins from the third century more commonly imitate very recent issues, rather than imitating slightly earlier coins which were more common in normal circulation.²⁰ Could this trend perhaps suggest that newer issues were copied because they were so debased that their production quality was easy to imitate and because they required a lower silver content to appear genuine, making them more profitable to produce and harder to detect as counterfeits. Elliott points to evidence from across the Roman Empire that Roman officials' sometimes questionable ability to enforce exclusive use of official coinage and the penalties of breaking counterfeiting laws were frequently outweighed by potential profit, leading to lucrative black market currency exchanges.²¹ It is possible that a similar network of counterfeit production and exchanged existed in third century Britain.

Perhaps supporting the argument that illegal coin counterfeiting was rife is the suggestion that the general populace, who were using both official and copied coinage, perhaps could not tell the difference and/or did not care to find out. The acceptance of coinage within the local community would probably have had more real-life implications for most people living and working in Roman Britain than Roman officials' approval, particularly during the Severan period when copied coinage contained the same silver content as official coinage.²² Indeed, Walton's PAS data revealed possible indications that a higher proportion of Severan *denarii* are found in rural contexts than from urban or military sites, which disparity she suggests could reflect that the rural supply of *denarii* was supplemented by rural coin copying.²³ In the countryside counterfeiters could more easily evade officials and could supply smaller communities, who might themselves be further removed from official pressures and therefore more accepting of unofficial coinage. Compounding this, Elliott argues that the drastic debasement of the *denarius* would have been visually apparent, and could have led the public to begin to lose

¹⁷ Abdy, 'The Severans', p.504.

¹⁸ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', p.76; Hall, 'With Criminal Intent? Forgers at Work in Roman London', pp.170-172.

¹⁹ Abdy, 'The Severans', p.504.

²⁰ J. Creighton, 'The Supply and Movement of *Denarii* in Roman Britain', *Britannia*, June 2014, p.14.

²¹ C. Elliott, 'The Acceptance and Value of Roman Silver Coinage in the Second and Third Centuries AD', *The Numismatic Chronicle*, Vol. 1/4, 2014, pp.140-148.

²² Elliott, 'The Acceptance and Value of Roman Silver Coinage in the Second and Third Centuries AD', pp.137-138; Abdy, 'The Severans', p.504.

²³ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', pp.70-71.

confidence in the official coinage.²⁴ A consequence of this failing trust could have been that copies became not only harder to detect among the official coinage, but also became more accepted as the official coinage lost some of its authority.

Levels of trust in official coinage in Britain in the late-second and early-third centuries are hard to determine. Elliott emphasises that the much-debated ‘crisis’ of the third century economy was in fact a ‘crisis’ that began in the second century, with some level of trust in the currency remaining just long enough for its effects to be ultimately felt in the third century.²⁵ Indeed, it is surprising that the dramatic debasement of the *denarius* in the second century did not manifest itself in any obvious immediate public reaction. Coin hoarding in Britain is low throughout the reigns of Severus and his successors.²⁶ There is, however, a peak in hoards closing in AD 231.²⁷ Most early third century hoards are fairly small, but this period also accounts for Britain’s largest *denarius* hoards, including the Shapwick hoard of 9,238 *denarii* closing in AD 224.²⁸ It is also notable that most early-third century silver coin hoards contain either *denarii* or radiates, rarely both.²⁹ Bland points out that it must have been abundantly obvious that the radiate, nominally twice the value of the *denarius*, weighed only slightly more, and was consequently widely distrusted in its unsuccessful first issue.³⁰ It is possible that this distrust in the radiate continued to manifest itself into the mid-third century. Ghey’s analysis of hoarding shows a continued comparative increase in hoards containing *denarii* through Reece Periods 11, 12 and 13 and notes in particular that “hoards dating to between 238 and 274 (RP 12-13) account for nearly 17% of the hoard *denarii*, indicating a longer period of circulation even after *denarii* ceased to be present in significant numbers”.³¹ Indeed, her data shows that just over 30% of all *denarii* from hoards date to AD 222-238, which she suggests could indicate that the currency change motivated hoarding and/or motivated non-recovery of hoards.³²

3.2 Coin Moulds in Britain

A great deal of work has been done and is being done to try to better understand the methods, patterns, and reasons behind coin copying across the Roman Empire, and the use of coin moulds is a large and complex topic of research within this field. There are 26 known sites where Roman coin moulds have been found in Britain, the largest quantified find being the discovery of over 814 moulds at 85 London Wall.³³

²⁴ Elliott, ‘The Acceptance and Value of Roman Silver Coinage in the Second and Third Centuries AD’, pp.137-138.

²⁵ Elliott, ‘The Acceptance and Value of Roman Silver Coinage in the Second and Third Centuries AD’, pp.150-151.

²⁶ Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, pp.47-48.

²⁷ *Ibid.* pp.57-58.

²⁸ *Ibid.* pp.58-59.

²⁹ *Ibid.* p.62.

³⁰ R. Bland, ‘From Gordian III to the Gallic Empire (AD 238-274)’, in W. E. Metcalf (ed.), *The Oxford Handbook of Greek and Roman Coinage*, Oxford University Press, New York, 2012, p.516.

³¹ E. Ghey, ‘Coin Hoards: Chronological Syntheses’, in R. Bland *et.al.*, *Iron Age & Roman Coin Hoards In Britain*, Oxbow Books, Oxford, 2020, p.251.

³² Ghey, ‘Coin Hoards: Chronological Syntheses’, p.255.

³³ Some could not be excavated and remain in the ground. Hall, ‘With Criminal Intent? Forgers at Work in Roman London’, pp.169-172.

Coin copying in Britain spans the Roman period, but there is a significant peak in the use of coin moulds in the early to mid-third century.³⁴ The Lingwell Gate coin moulds fall within this production peak, and consequently literature relating to third century coin moulds in Britain has been the focus of research for this project. However, the use of coin moulds was widespread across the Roman Empire, and by no means unique to Roman Britain. There are at least 54 sites on the continent where Roman coin moulds have been found, often producing very large numbers of coins, with by far the largest being the 2,539 moulds found at Pachten in Germany.³⁵ Large numbers of Roman coin moulds have also been found in Egypt, mostly dating to the early fourth century, and many of these have been acquired by British Museums, in some cases becoming intermingled with Lingwell Gate specimens, as found with the Yorkshire Museum and Hull and East Riding Museum collections.³⁶

Few of the known assemblages of coin moulds from Roman Britain have been thoroughly researched. Most have only been published in antiquarian journals shortly following their discovery, and have later been listed as comparanda for other groups of coin moulds or as part of broader discussions surrounding coin copying without being revisited in detail.³⁷ Possibly as a consequence of the limited data about many of the smaller or older assemblages, there has been no modern comprehensive study of the use of coin moulds in Roman Britain.

By far the most comprehensive research undertaken into second and third century coin moulds in Britain is the analysis and research into the over 800 moulds, dating from Trajan to Trebonius Gallus, found at 85 London Wall in 1988, published by Hall in 2015.³⁸ Hall's publication details the methodology and findings of experimental archaeology undertaken by Goodburn Brown to better understand the production process in which the moulds were used.³⁹ This research offers invaluable insights into how Roman coin moulds functioned and the meticulous, complex processes required for mass production of third century cast copied coins.

3.3 Studies of Lingwell Gate

Lingwell Gate has been the subject of scholarly debate periodically since the discovery of coin moulds in 1697 was first published in the November 1697 issue of the *Philosophical Transactions of the Royal Society of London*, and then again in Thoresby's 1715 *Ducatus Leodiensis* and Gibson's 1722 edition of Camden's *Britannia*.⁴⁰

³⁴ Hall, 'With Criminal Intent? Forgers at Work in Roman London', p.172.

³⁵ Hall, 'With Criminal Intent? Forgers at Work in Roman London', pp.171-172.

³⁶ J. Chameroy, 'Münzgussformen und Münzreformen in Ägypten am Anfang des 4. Jahrhunderts n.Chr.', *Jahrbuch f. Numismatik u. Geldgeschichte* 59, 2009, p.110.

³⁷ A. E. Robinson, 'False and Imitation Roman Coins'; R. Pedley, 'The Brigantes: A Study in the Early History of the North Pennines', Thesis, Durham University, 1939, pp.446-449; M. Jungfleisch et J. Schwartz, 'Les Moules de Monnaies Impériales Romaines', in *Annales du Service des Antiquités*, Suppl.19, 1952; G. C. Boon and P. A. Rahtz, 'Third Century Counterfeiting at Whitchurch, Somerset', *Archaeological Journal* 122, 1965, pp.13-51; G. C. Boon, 'Lightweights and "Limesfalsa"', *The Numismatic Chronicle and Journal of the Royal Numismatic Society*, vol. 5, 1965, pp. 161-174; Hall, 'With Criminal Intent? Forgers at Work in Roman London', pp. 165-194.

³⁸ J. Hall and D. Goodburn Brown, 'Faking it – the evidence for counterfeiting coins in Roman London', *London Archaeologist*, Summer 2015, p.126.

³⁹ *Ibid.* pp.123-127.

⁴⁰ R. Thoresby, 'To Reverend Dr. Thomas Gale, Dean of York, and F.R.S., Dated Leeds, 6th November 1697', in *Philosophical Transactions of the Royal Society of London*, 234, November 1697, pp.739-740; R. Thoresby, *Ducatus Leodiensis*, 1715; W. Camden (E. Gibson ed.), *Britannia*, 1722.

The first period of intensive study of the site took place shortly after the antiquarian discovery of the majority of the moulds in the early-nineteenth century. In February 1831 John Hey, Curator of the Museum of the Leeds Philosophical and Literary Society, argued that the coin copying at Lingwell Gate was an illegal counterfeiting operation.⁴¹ In March of 1831, however, an opposing argument was set forth by William Knight, who argued that the moulds were made elsewhere and that the cast coins were so precise that they must have been officially produced.⁴² In 1836-9 Reverend Reade examined the moulds and soil samples from Lingwell Gate under a microscope, revealing ‘fossil infusoria’, microscopic fossilised organisms, in both, thereby demonstrating that the moulds were probably produced onsite.⁴³ He, too, argued that the coins were cast on the authority of the Roman emperors, and this viewpoint was supported by William Boyne in 1855.⁴⁴ A report of the discovery of coin moulds at Duston near Northampton in 1871, however, describes Reverend Reade’s opinion to be that the Lingwell Gate moulds were used by forgers, but that over time moulds began to be used by official moneyers, suggesting that Reade’s opinion may have changed slightly in the intervening decades.⁴⁵

The 1930s saw another brief peak of academic interest in Lingwell Gate. In 1930-1931 Arthur E. Robinson successfully traced many Lingwell Gate coin moulds in museum collections.⁴⁶ Robinson, too, argued that coins were copied to supplement official coinage, and that this process was undertaken with official sanction.⁴⁷ Walker’s 1939 *Wakefield: Its History and People* agreed, specifying that this additional coin production was required to meet the demands of military pay.⁴⁸ Also in 1939 Pedley argued that the debasement of the *denarius* would have made forgery unprofitable, and that instead copied coins were being produced to supplement the coinage supply with “semi-official cognisance, even if they had not the open approval of the authorities”.⁴⁹

A significant body of work was undertaken in the 1990s through correspondence between Mark Hall at Wakefield Museum and Bryan Sitch at Hull City Museums to trace Lingwell Gate moulds in other museums’ collections and collate relevant primary and secondary sources.⁵⁰ This correspondence is unpublished but remains on file in the

⁴¹ J. Hey, ‘18th February 1831, A Notice of Certain Roman Coin Moulds found at Lingwell-Gate near Wakefield in 1830’, in *Transactions of the Philosophical and Literary Society of Leeds*, Vol. 1, Part 1, 1937.

⁴² Knight, ‘Roman Coin-moulds of Clay, found near Wakefield, in Yorkshire’.

⁴³ Reade, ‘Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830’.

⁴⁴ Reade, ‘Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830’; Boyne, ‘On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.’.

⁴⁵ Rev. S. Sharp, ‘Earthen Coin Moulds, Found at Duston, Near Northampton’, in *The Numismatic Chronicle and Journal of the Numismatic Society*, New Series, Vol. 11, 1871, pp. 28-41.

⁴⁶ A. E. Robinson, ‘False and Imitation Roman Coins’.

⁴⁷ *Ibid.*, p.174.

⁴⁸ J. W. Walker, *Wakefield: Its History and People*, Vol 1, The West Yorkshire Printing Co. Limited, Wakefield, 1939.

⁴⁹ Pedley, ‘The Brigantes: A Study in the Early History of the North Pennines’.

⁵⁰ M. Hall to B. Sitch, Letter, 13th January 1992, in the Hull Museums and Leeds Museums archives; B. Sitch to M. Hall, Letter, 22nd January 1992, in the Hull Museums and Leeds Museums archives; R. Jackson to M. Hall, Letter, 24th January 1992, in the Hull Museums and Leeds Museums archives; M. Hall to B. Sitch, Letter, Late January 1992, in the Hull Museums and Leeds Museums archives; B. Sitch to M. Hall, Letter, 8th February 1992, in the Hull Museums archive; M. Hall to B. Sitch, Letter, 10th February 1992, in the Hull Museums archive; C. Longworth to M. Hall, Letter, 17th February 1992, in the Hull Museums and

archives of the Hull and East Riding Museum and Leeds Museums and Galleries, and proved to be an invaluable resource for this project.

To date twenty-first century sources have also for the most part listed Lingwell Gate moulds as comparative material, but have not discussed the assemblage in great depth. Nevertheless, Lingwell Gate has been repeatedly identified as a site of interest in recent years. They were the subject of a research project and display carried out by Lucy Ellis at the Society for Antiquaries of London and published in the December 2018 *Money and Medals Network Newsletter*, Issue 75.⁵¹ Richard Brickstock is also currently undertaking a research project assessing Lingwell Gate coin moulds as comparanda for coin moulds recently excavated from Fulford, York.⁵² Finally, the rediscovery of correspondence between Arthur E. Robinson and Dr. Walter E. Collinge in the Yorkshire Museum's paper archive brought to light the significance of the moulds the museum holds, prompting a 2017 blog and 2018 temporary display produced by the author of this report,⁵³ and resulting in the identification of the research potential of the Lingwell Gate moulds detailed by Vincent Drost in the 2018 "Old Collections, New Questions: Researching the Roman Collections of the Yorkshire Museum" document.⁵⁴

3.4 Summary

This literature review has sought to contextualise Lingwell Gate as a site of particular interest, as an example of an under-researched phenomenon of coin copying in Roman Britain, and as invaluable evidence for improving the understanding of a much-debated period of economic change, not just in Roman Britain but across the Roman Empire. The findings set out in this project are only the foundations of what could be learnt from the Lingwell Gate site, and the further research avenues set out in section 7.0 have potential to rewrite our understanding of late-second and early-third century Roman Britain.

Leeds Museums archives; E. Pirie to M. Hall, Letter, 18th February 1992, in the Hull Museums and Leeds Museums archives; M. Hall to M. Blackburn, Letter, 20th February 1992, in the Hull Museums archive; M. Hall to B. Sitch, Letter, 3rd March 1992, in the Hull Museums and Leeds Museums archives; K. Butcher to M. Hall, Letter, 12th March 1992, in the Hull Museums and Leeds Museums archives; B. Sitch to M. Hall, Letter, 20th March 1992, in the Hull Museums archive; M. Hall to B. Sitch, Letter, 26th August 1992, in the Hull Museums and Leeds Museums archives; M. Hall to B. Sitch, Letter, Unknown date, in the and Leeds Museums archive.

⁵¹ L. Ellis, 'Numismatics at the Society of Antiquaries of London', in *Money and Medals: The Newsletter for Numismatics in Britain*, 75, December 2018, p.3.

⁵² R. Brickstock to E. Tilley, Email, 24th January 2020, *pers. comm.*

⁵³ E. Tilley, 'Lingwell Gate Roman Coin Moulds', Blog, on York Museums Trust website, 2017.

⁵⁴ E. Tilley (ed.), *Old Collections, New Questions: Researching the Roman Collections of the Yorkshire Museum*, pp.103-104.

4.0 Methodology

This section will set out the research methodology followed in tracing, identifying, and assessing the Lingwell Gate coin moulds and associated finds.

The advent of the COVID-19 pandemic in early 2020 necessitated some changes to the research methodology. It had originally been an ambition of this project to undertake closer analysis of the fabric of Lingwell Gate coin moulds in the Yorkshire Museum collection, and discussions were underway regarding the potential for collaboration with the University of York. The pandemic rendered this work an impossibility within the scope of the project, although it remains a potential avenue of future research, as set out in section 7.0. The project was suspended for seven months while York Museums Trust resources were limited to operational necessities, before being resumed in November 2020 with a focus on writing up and sharing the findings.

4.1 Tracing the Moulds

The first step in beginning to assess the Lingwell Gate assemblage was to attempt to trace as many moulds in museum and private collections as possible. At the beginning of this project it was not known how many moulds existed elsewhere or in how many different collections.

The Yorkshire Museum's object history files contained 1931 correspondence between Arthur E. Robinson and Dr. Walter E. Collinge in which Robinson described his efforts and success in tracing Lingwell Gate moulds.⁵⁵ He went on to publish his findings in the *Journal of the Antiquarian Association of the British Isles*.⁵⁶ These records provided an invaluable starting point, listing Leeds, Carlisle, Hull, London, Liverpool, Oxford, and Cambridge as other collections containing material from Lingwell Gate.

The first step in tracing moulds was to contact these museums to request confirmation of Robinson's research, any provenance information, and photographs or, where images did not yet exist, to arrange research visits to see and digitise the moulds. The decision was taken to also contact Wakefield Museums, which had not yet been formed at the time of Robinson's research, to ask if any moulds had been retained in local collections.

There are undoubtedly many more Lingwell Gate moulds and associated objects which were not successfully traced by Robinson, in both private and public collections. In an effort to identify some of these collections a call for information was distributed via social media, in the Money and Medals Network January 2020 newsletter, and through the Society for Museum Archaeology.⁵⁷

Six research visits were undertaken over the course of this project. At Hull and East Riding Museum a process of sorting and identification was undertaken to separate Lingwell Gate moulds from Egyptian moulds in the collection, the moulds were photographed, and the paper archive was searched for relevant information. At Leeds

⁵⁵ A. E. Robinson to Dr. W. E. Collinge, Letters, 8th March 1931 to 19th November 1931, in the Yorkshire Museum archive.

⁵⁶ A. E. Robinson, 'False and Imitation Roman Coins'.

⁵⁷ E. Tilley, 'Researching the Lingwell Gate Roman Coin Moulds', in *Money and Medals: The Newsletter for Numismatics in Britain*, 78, January 2020, p.2.

Museums and Galleries the paper archive was searched and the moulds were viewed on display. At Wakefield Museums the moulds were photographed and the paper archive was searched. A meeting was held at the British Museum with Eleanor Ghey to view some of the Lingwell Gate moulds in the collection and to discuss the project. A visit to the Society of Antiquaries of London was undertaken to view and photograph the Lingwell Gate moulds on display in the foyer. A site visit was undertaken to the field in Lingwell Gate in which the assemblage was discovered, to obtain photographs and to better understand the location and topography.

Secondary sources provided an invaluable resource for learning about the discovery of the Lingwell Gate site, identifying named finders and collectors, and tracing the movements of moulds between collectors and, in some instances, into public collections. Paper archives at the Yorkshire Museum, Hull and East Riding Museum, Wakefield Museums, and Leeds Museums and Galleries contained an assortment of letters, articles, book extracts, donation records, and annual report extracts relating to the Lingwell Gate moulds. In addition to these records, a keyword search for 'Lingwell' was undertaken on the British Newspaper Archive, yielding results spanning from 1821 to 1906. Digital archives of *The Proceedings of the Numismatic Society*, *The Numismatic Journal* and *The Numismatic Chronicle* also contained many mentions of the site and assemblage. These sources are all listed in the bibliography, section 8.4.

4.2 Identifying the Moulds

Past attempts to identify the coins copied by Lingwell Gate moulds have been hampered by the small, often incomplete, and inverted impressions in the moulds. Previous identifications have relied upon close study and, in some cases, plaster casts or reversing glass plate slides. For this research project photographs were obtained of all of the identified coin moulds, which were digitally enlarged and flipped to facilitate identification.

Each mould impression represents only one side of each coin copied, and most moulds have since been separated from their counterparts which copied the second side. It has not, therefore, been possible to assign *Roman Imperial Coinage* (RIC) references to the moulds. Instead, mould impressions have been categorised according to their issuer, whenever this could be determined, and assigned the broad dates of that issuer's rule.

4.3 Assessing the Moulds

In order to better understand the assemblage as a whole and how it can be compared to coinage trends in the same period each coin mould was assigned to a Reece Period, the most widely used categorisation system for analysing numismatic trends in Roman Britain, to facilitate comparison with Portable Antiquities Scheme (PAS) data and records of contemporaneous coin hoards.⁵⁸ These results were plotted on a histogram.

PAS data is a useful measure of rates of coin loss and, by extension, of the amounts of specific coinage issues in circulation in England and Wales. It is not possible to determine when coin loss occurred, as coins, particularly *denarii*, could remain in circulation for hundreds of years. It is nevertheless a useful gauge of circulation patterns on a national and regional scale. For this reason it was decided that PAS data was invaluable for helping to characterise the Lingwell Gate assemblage. When the Reece

⁵⁸ See Moorhead, *A History of Roman Coinage in Britain*, pp.5-6.

Period range represented by the Lingwell Gate moulds had been determined searches were carried out using the PAS database to determine how many individual *denarii* dating to each Reece Period had been recorded on the database in total, and specifically in the Yorkshire and the Humber region. Bulk records for coin hoards were excluded from the dataset, as hoards were compared with the Lingwell Gate moulds as a separate phenomenon to coin loss. The Lingwell Gate Reece Period data, excluding 'uncertain' and 'unclear' mould impressions, and the PAS total and regional Reece Period data were converted into percentages of their totals so that the relative proportions of the Reece Periods represented in each dataset could be compared visually when plotted on a histogram. At the time of researching there were 11,399 individual *denarii* dating between Reece Periods 5 and 11 on the PAS database in total, and 1,436 from the Yorkshire and the Humber region.

A comparison was also undertaken against Walton's British Mean (WBM) and the North of the Fosse Way Mean (NFWM), which were compiled using PAS data as well as data from coin assemblages from archaeological excavations.⁵⁹ The NFWM maps very closely onto the PAS dataset, while the WBM differs from both the PAS and the Lingwell Gate data. Given that Lingwell Gate is a northern site the NFWM was deemed to be the most appropriate comparator. Its close correlation with the PAS dataset demonstrated the effectiveness of the PAS data for comparison and meant that no further in-depth comparison between the NFWM and the Lingwell Gate data was necessary.

In order to compare the assemblage with hoards of a similar period the date of the copied coin that was issued latest was used as an indication of the *terminus post quem*, the earliest date at which the assemblage could be considered to have been 'deposited', mimicking the methodology of dating the deposition of hoards according to their latest coin. This data was used to select hoards as comparanda, with similar denarius-only compositions, contemporaneous 'deposition' dates ranging from AD 224-238, and large enough (over 100 coins) to offer a dataset with a discernible pattern. Three hoards meeting these criteria were selected from Bland's Checklist of Hoards.⁶⁰ Their IARCH records were used to ascertain and plot their Reece Period distribution on a histogram alongside the Lingwell Gate data.⁶¹ The hoards selected were Shapwick, the largest *denarius* hoard found in Britain, numbering 9,238 *denarii*, and deposited after AD 224, Riddlesden, numbering 110 *denarii* and deposited after AD 235-236, and Darfield 1947, numbering 481 and deposited after AD 235-238.⁶² Given the disparate sizes of the assemblages Reece Periods numbers were converted into percentages to represent the proportional chronological spread. The large proportion of uncertain Lingwell Gate identifications distorted the histograms, so all uncertain identifications were excluded from the data to adjust for this.

⁵⁹ Walton, 'Rethinking Roman Britain: An Applied Numismatic Analysis of the Roman Coin Data Recorded by the Portable Antiquities Scheme', pp.38-62, pp.72-76, and pp.420-421.

⁶⁰ Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, pp.198-200.

⁶¹ *Ibid.*

⁶² *Ibid.*

5.0 Analysis

The information compiled over the course of the project can be used to begin to address the research questions identified at the outset of the work, as set out in section 2.0. These questions will be addressed in turn in this section, taking into consideration the data gathered as well as the context set out in section 3.0 and the advantages and limitations of the methodology explained in section 4.0.

5.1 Today

1. *Where are the Lingwell Gate coin moulds?*

In total, including the moulds in the Yorkshire Museum collection, the locations of 288 definite Lingwell Gate coin moulds and 1 Lingwell Gate funnel are now known, distributed between eight museum collections. In addition to these, there are four boxes of moulds and one or more crucibles thought to probably originate at Lingwell Gate in the British Museum collection. An unknown number of Lingwell Gate moulds and associated materials are also believed to be in three further collections. There are doubtless many more still to be traced.

The collections known to contain material from Lingwell Gate are as follows:

- British Museum: 72 moulds, four boxes of probable Lingwell Gate moulds, one or more crucibles possibly from Lingwell Gate
- Wakefield Museums: 67 moulds
- Yorkshire Museum: 54 moulds
- Society of Antiquaries of London: 45 mould fragments
- Leeds Museums and Galleries: 36 moulds and 1 funnel
- Hull and East Riding Museum: 6 moulds
- Norwich Castle Museum: 5 moulds
- Museum of Liverpool: 3 probable and 1 possible Lingwell Gate moulds

Collections believed to contain an unknown quantity of material from Lingwell Gate are as follows:

- Manchester Museum
- Ashmolean Museum in Oxford
- Fitzwilliam Museum in Cambridge

Collections recorded as containing Lingwell Gate material in 1931, but which current curators do not believe contains this material today, are as follows:

- Tullie House in Carlisle
- The Collection and Usher Gallery in Lincoln

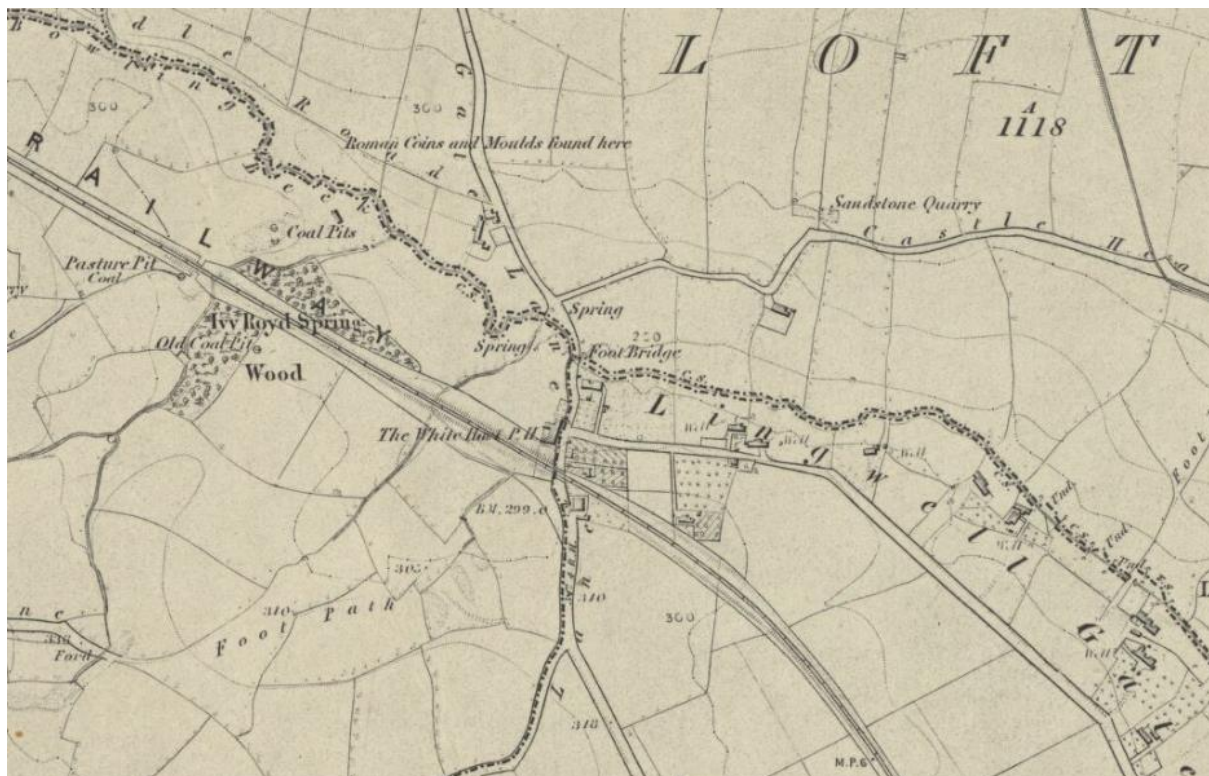
Hundreds, possibly thousands, of moulds have been found at Lingwell Gate, as well as an unknown number of cast coins, funnels, crucibles, and other production materials. This project has, to date, successfully traced over 300 moulds with further examples undoubtedly yet to be rediscovered, putting the site in contention with the 350 moulds found at Whitchurch, Somerset, for the claim of being the second-largest find of this type in Britain.⁶³ It is hoped that it will be possible to trace further examples in public and private collections in future.

⁶³ Hall, 'With Criminal Intent? Forgers at Work in Roman London', pp.169-171.

5.2 Discovery Period

2. *When and how were the moulds discovered?*
 - a. What is the precise findspot of the moulds?

In the course of this project it has been possible to refine the findspot of the Lingwell Gate coin moulds and associated production materials to one field on the outskirts of Wakefield, along Lingwell Gate Lane between Outwood and Thorpe-on-the-Hill, at National Grid Reference SE318257. Bowling Beck, a small watercourse, runs through the field. The findspot is marked on the 1854 Yorkshire 233 Ordnance Survey Map, surveyed between 1848 and 1851, with the line 'Roman Coins and Moulds found here'.⁶⁴



The antiquarian nature of the discovery has made it impossible to further refine the findspot. The moulds and associated production materials were found on at least 13 occasions over the course of over 150 years, with minimal information regarding the details of the discoveries recorded. The lengthy period of time and multiple incidences of discovery suggest that several individual findspots exist, and accounts variously record discoveries as occurring due to disturbance from a plough, due to the changing water levels of the Bowling Beck and in the waterlogged field itself, and when the field was drained for agriculture.⁶⁵ The many antiquarians who visited the site in the early nineteenth century also undertook more focussed searches, or digs, to uncover coin

⁶⁴ Ordnance Survey Six-inch England and Wales, Yorkshire 233 (includes: Lofthouse; Morley; Stanley.), 1854.

⁶⁵ Reade, 'Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830'; Boyne, 'On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.'

moulds to add to their collections, with great success.⁶⁶ Modern geophysical surveying and/or archaeological investigation would be invaluable in further refining one or more findspots and the distribution of the objects in the field.

The below photographs were taken on a visit to the findspot in early March 2020 and show a panoramic view of the site as well as views of Bowling Beck.



⁶⁶ *Morning Post*, 14th November 1822; *Hull Advertiser and Exchange Gazette*, 15th November 1822.

b. What record is there of the discovery and collection of the Lingwell Gate coin moulds?

Through study of records dating back to the late seventeenth century it is clear that hundreds if not thousands of objects were found at Lingwell Gate on at least 13 different occasions between 1697 and 1879. Finds from the site have passed through the hands of at least 33 known individuals, and have been traced in at least eight museum collections.

This information has been gathered from numerous antiquarian records of the discovery of the Lingwell Gate coin moulds, some offering very little detail and others providing lengthy analysis of the site and the finds, as well as museum acquisition records and modern research. Donations of Lingwell Gate objects to five public collections can be linked to one or more named individuals, and seven public collections have been identified as probably containing Lingwell Gate material from as yet unidentified acquisition sources. In many cases objects known to have been found at Lingwell Gate can no longer be traced. A Provenance Map, section 8.3, has been compiled to summarise the known discoveries and movements of Lingwell Gate finds.

The sources consulted in the course of this project have not only provided names and dates for the discovery and ownership of finds from Lingwell Gate, they have also proved to be invaluable records of the varying ways in which finds were uncovered, observations about the findspots, and how they came to change hands between finders, collectors, researchers, and museums. These records and the information they offer has been summarised in the table below.

Source	Information Type	Content Summary
Ralph Thoresby, 'To Reverend Dr. Thomas Gale, Dean of York, and F.R.S., Dated Leeds, 6 th November 1697', in <i>Philosophical Transactions of the Royal Society of London</i> , 234, November 1697, pp.739-740.	Discovery Ownership Object description	Letter from Mr. Thoresby to Dr. Martin Lister. Reverend Mr. Clark, the Lady Campden's Lecturer at Wakefield, had brought Thoresby a number of clay coin moulds which had been 'happily rescued from some Labourers, who in delving in the Fields near Thorpe on the Hill found a considerable number of them'. Thoresby describes the coin casting process, including that the moulds were coated in an outer layer of clay, although there is no mention of this outer layer being found.
Ralph Thoresby, <i>Ducatus Leodiensis</i> , 1715.	Discovery	Reference to the 1697 discovery.
W. Camden (E. Gibson ed.), <i>Britannia</i> , 1722.	Discovery	Reference to the 1697 discovery.

<p>'Appendix', <i>Archaeologia</i>, Vol.19, 1st April 1820, pp.412-413.</p>	<p>Discovery</p> <p>Ownership</p> <p>Object description</p> <p>Findspot</p>	<p>Thomas Pitt exhibited moulds from the site, together with a coin found between two moulds, 'in a field in the occupation of Mr. Matthew Spurr'.</p> <p>Pitt details that 'large quantities of these moulds have, at various times, been turned up by the plough'</p>
<p><i>Leeds Intelligencer</i>, 9th April 1821.</p> <p><i>Durham County Adviser</i>, 14th April 1821.</p> <p><i>Westmorland Advertiser and Kendal Chronicle</i>, 14th April 1821.</p> <p><i>Lancaster Gazette</i>, 21st April 1821.</p> <p><i>Hereford Journal</i>, 25th April 1821.</p>	<p>Discovery</p> <p>Ownership</p> <p>Museum acquisition</p>	<p>Reports of the discovery of 'a considerable quantity' of Lingwell Gate moulds, as well as crucibles and coins.</p> <p>These objects were donated to the Society of Antiquaries of London and the British Museum by 'a gentleman of Wakefield', Thomas Pitt.</p>
<p><i>British Museum Accession Register</i>, 12th May 1821.</p>	<p>Ownership</p> <p>Museum acquisition</p>	<p>Record of Thomas Pitt's donation of moulds, a funnel, a crucible, and a silver coin.</p>
<p><i>Yorkshire Gazette</i>, 12th May 1821.</p>	<p>Ownership</p> <p>Museum acquisition</p>	<p>Report of donation of Lingwell Gate finds to the Society of Antiquaries of London and the British Museum by Thomas Pitt.</p>
<p><i>Salisbury and Winchester Journal</i>, 11th November 1822.</p> <p><i>Public Ledger and Daily Advertiser</i>, 12th November 1822.</p> <p><i>Bury and Norwich Post</i>, 13th November 1822.</p> <p><i>Oxford University and City Herald</i>, 16th November 1822.</p>	<p>Discovery</p> <p>Ownership</p>	<p>Reports of the discovery of 'a quantity of coins and moulds' at Lingwell Gate made by Mr. Artis, a well-known Yorkshire antiquarian.</p>

<p><i>Morning Post</i>, 14th November 1822.</p> <p><i>Hull Advertiser and Exchange Gazette</i>, 15th November 1822.</p>	<p>Discovery</p> <p>Findspot</p> <p>Museum acquisition</p>	<p>A letter from ‘a respectable correspondent at Wakefield’ recounting the discovery of Lingwell Gate moulds.</p> <p>‘I was twice at the Roman station (or supposed one), at Lingwell-gate, when, after very little exertion each time, with the use of a spade, I soon turned up perfect and finely executed clay moulds’.</p> <p>The author of this letter sent some of his collection to the British Museum and the Society of Antiquaries of London, so can safely be assumed to be Thomas Pitt.</p>
<p><i>Annual Report of the Yorkshire Philosophical Society</i>, 1823.</p>	<p>Ownership</p> <p>Museum acquisition</p>	<p>Reverend W. V. Vernon donated ‘six moulds of ancient Roman coins found at Wakefield’ to the Yorkshire Philosophical Society.</p>
<p><i>Annual Report of the Yorkshire Philosophical Society</i>, July 1825.</p>	<p>Ownership</p> <p>Museum acquisition</p>	<p>Mrs. Davies donated ‘moulds of ancient coins, found near Wakefield’ to the Yorkshire Philosophical Society.</p>
<p><i>Leeds Intelligencer</i>, 13th April 1826.</p>	<p>Discovery</p> <p>Object description</p> <p>Ownership</p> <p>Museum acquisition</p>	<p>Report of the discovery of eight or ten coin moulds, about thirty mould fragments, and part of a crucible at Lingwell Gate.</p> <p>Description of a discovery made on 13th March 1821 of ‘a wheelbarrow-full’ of moulds as well as four crucibles, four of which had ‘lids or covers’.</p> <p>Record of Pitt’s donations to museum collections, but it is not clear whether these objects were found in the 13th March 1821 discovery described.</p>
<p>William Wansey, <i>Gentleman’s Magazine</i>, July 1829.</p>	<p>Object description</p> <p>Discovery</p> <p>Ownership</p> <p>Museum acquisition</p>	<p>An account and analysis of the Lingwell Gate moulds.</p> <p>Having heard about the site and the finds, he ‘went there and procured some’.</p> <p>Second-hand account of a discovery of the moulds made approximately eight years previously; ‘a large number’ of moulds were found ‘some arranged in layers, 12 or 14 one above another, with an interval, or floor of clay, between each, and all inclosed (<i>sic</i>) in a crust, or thick covering of clay, with holes from top to bottom’.</p>

		<p>Most of the moulds from the earlier find 'came into the possession of Mr. Thomas Pitt'.</p> <p>Pitt donated some examples to the Society of Antiquaries and Wakefield Library.</p>
<p><i>Leeds Mercury</i>, 8th May 1830.</p> <p><i>The Scotsman</i>, 12th May 1830.</p> <p><i>Lancaster Gazette</i>, 22nd May 1830.</p>	<p>Museum acquisition</p> <p>Ownership</p> <p>Discovery</p> <p>Findspot</p>	<p>Report of a donation of about twenty Lingwell Gate moulds, one with a coin <i>in situ</i>, and a funnel to the Museum of the Leeds Philosophical and Literary Society by Mr. John Peele Clapham.</p> <p>Notes that 'for some time past antiquities of this description have been turned up in the course of excavations made on the land for the purpose of trenching in a coal-pit', and that some moulds had been disposed of by the finders, while others had been collected by unnamed 'members of the Antiquarian Society from London and Manchester'.</p>
<p>John Hey, '18th February 1831, A Notice of Certain Roman Coin Moulds found at Lingwell-Gate near Wakefield in 1830', in <i>Transactions of the Philosophical and Literary Society of Leeds</i>, Vol. 1, Part 1, 1937.</p>	<p>Discovery</p> <p>Findspot</p> <p>Object description</p> <p>Ownership</p>	<p>Delivered by John Hey, Curator of the Museum of the Leeds Philosophical and Literary Society, at the February 1831 meeting of the society.</p> <p>Account of a large discovery of coin moulds found at Lingwell Gate in 1830. It is not clear whether this same discovery produced the moulds donated by Clapham.</p> <p>Hey describes the discovery as 'the largest deposit which has yet been known'.</p> <p>The moulds were initially disturbed by a plough and a 'further search' was carried out by 'some gentlemen at Wakefield' which also revealed four crucibles and several funnels.</p> <p>'The whole of these were formed of bluish white clay, which was very plentiful on the spot, about eighteen inches from the surface. It is worthy of remark that the colour of the soil is quite changed for some distance round, and as the ground it as present ploughed out, the extent of this change is very well defined. It is about ten yards in diameter; and within this space the soil consists almost entirely of decomposed vegetable matter, with pieces of wood, of various sizes, scattered amongst it; which renders it probable that there has been a forge erected here, in the midst of the forest, and that the surrounding wood has been cut down to afford fuel, as well as space, for the operations of the coiners.'</p>

		Reference to a discovery of coin moulds made by Thoresby in c.1706, which could be a conflation of Thoresby's 1697 discovery or could represent a second, previously unrecorded find.
William Knight, 'Roman Coin-moulds of Clay, found near Wakefield, in Yorkshire', in <i>Archaeologia</i> , Vol 24, 1831.	Ownership	William Knight exhibited coin moulds and a cast coin from Lingwell Gate.
Photograph of unknown documents, post-1834, in the Leeds Museums archive.	Discovery Object description Ownership	<p>Extract from a report of an 1812 discovery of coin hoard near Lingwell Gate.</p> <p>Clay coin moulds were 'discovered in large numbers at Lingwell Gate, March 25, 1820'</p> <p>'Communicated, May 4, 1820, by Mr. Thomas Pitt, of Wakefield. Minutes, vol. xxxiv. p. 337. A further discovery of clay moulds, sufficient to fill a wheelbarrow, was made in the same field in the following year; several moulds, with four crucibles, some of the moulds being so prepared as to be ready to receive the metal, with others in which spurious coins were found, were exhibited to the Society May 10, 1821. Minutes, vol. xxxiv, p. 424. Similar moulds, found at the same spot, were exhibited by William Knight, Esq. F.S.A. March 10, 1831, and by William Wansey, Esq. F.S.A. May 8, 1834. Minutes, vol. xxxvi, pp. 104, 395. Archaeol. vol. xxiv, p.349.'</p>
<i>Proceedings of the Numismatic Society, 1836-1839.</i>	Ownership	<p>Reverend J. B. Reade presented a paper on the Lingwell Gate moulds found in 1820 to the Numismatic Society 'accompanied by specimens of the moulds'.</p> <p>Report that Mr. Taylor Combe held a different opinion to Mr. Hey's regarding why the moulds were made. It is not clear whether Mr. Combe had any moulds in his possession.</p>

<p>Rev. J. B. Reade, ‘Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830’ in <i>Proceedings of the Numismatic Society</i>, 1836/1837- 1838/1839.</p>	<p>Ownership Object description Findspot</p>	<p>Examined moulds ‘under a magnifying power of 300’ and found ‘fossil infusoria, principally of species <i>Noviculae</i>, and an undescribed species of <i>Gaillonella</i>, which he proposes to name <i>G. Romana</i>’.</p> <p>Also examined sand samples from the site and found ‘that it is marked by the presence of the infusoria of the coin-moulds ; being those of which the substance named tripoli, which is used for polishing of metals, the cleansing of arms, and other purposes of practical utility, is composed : so that there can be little doubt that the moulds in question were the work of forgers on the spot’.</p> <p>Describes the Roman site as ‘in the heart of a forest, at a distance from the main road.’</p> <p>Records that several copper <i>denarii</i>, not silver, were found in the moulds.</p>
<p>Rev. S. Sharp, <i>Proceedings of the Numismatic Society</i>, 1836-1839.</p>	<p>Discovery Museum acquisition Ownership</p>	<p>Letter to Reverend J. B. Reade.</p> <p>Explains that four crucibles were found at Lingwell Gate. One was donated to the British Museum, one to the Society of Antiquaries of London, one to the Fitzwilliam Museum in Cambridge, and one was broken in Sharp’s drawer.</p> <p>‘I send two moulds for the purpose you mention. I am sorry I cannot spare more, as I have given nearly all I had away.’</p>
<p>William Wansey, <i>Proceedings of the Numismatic Society</i>, 1836-1839.</p>	<p>Ownership Object description</p>	<p>Letter to the President of the Numismatic Society.</p> <p>Sent ‘a few of my Roman moulds’ for exhibition to the Society.</p> <p>‘I found some of the moulds at a place called Lingwell-Gate...I got some from the farmer who lives there, and some from a Mr. Pitt of Huddersfield, who has a large quantity of them’.</p> <p>‘I procured at Lingwell a small vessel, or crucible, made of clay also, the bottom of which shewed evident marks of having been in the fire; and in one of the moulds a coin of Septimius Severus, exactly fitted to, and indubitably cast in it. I regret that I no longer possess these last-mentioned curiosities’.</p>

<p>Mr. W. (William Wansey), <i>The Numismatic Journal</i>, Vol. 2, June 1837-April 1838.</p>	<p>Ownership</p> <p>Object description</p> <p>Findspot</p>	<p>Owned several moulds from Lingwell Gate.</p> <p>Used to have, but has since lost, a mould with a miscast coin <i>in situ</i>.</p> <p>Had heard and from his own examination of the site agreed that the fabric of the moulds was different to the surrounding soil, 'that being sand, washed up in heavy rains, by a rivulet, over-flowing on the lower part of a ploughed field.'</p>
<p><i>Morning Chronicle</i>, 28th December 1838.</p> <p><i>Evening Chronicle</i>, 28th December 1838.</p> <p><i>Reading Mercury, Oxford Gazette and Berks. County Paper</i>, 29th December 1838.</p>	<p>Findspot</p>	<p>Account of William Wansey's letter describing the Lingwell Gate moulds 'which were often cast up after heavy rains from a small rivulet'.</p>
<p>Rev. J. B. Reade, <i>The Numismatic Chronicle</i> (1838-1842), June 1838 – April 1839, Vol. 1.</p>	<p>Object description</p> <p>Ownership</p> <p>Findspot</p>	<p>Description of how coin moulds functioned. 'It will be observed that a double and not a triple pile was used at Lingwell Gate, as appears from the drawing (fig. 5), which I have received from the Rev. S. Sharp, of Wakefield'.</p> <p>Detail of examination of Lingwell Gate moulds under a microscope and the discovery of 'fossil infusoria, of the genus <i>Navicula</i>' in the mould fabric as well as soil samples from the site.</p> <p>Describes the Roman site as 'in the heart of a forest, at a distance from the main road.'</p> <p>Records that several copper <i>denarii</i>, not silver, were found in the moulds.</p>

<p>William Boyne, 'On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.', in <i>Reliquiae Antiquae Eboracenses</i>, 1855.</p>	<p>Findspot</p> <p>Object description</p> <p>Discovery</p> <p>Ownership</p>	<p>Most Lingwell Gate mould discoveries had taken place 'in draining a flat meadow bordering on the stream, a short distance above the village'.</p> <p>Report that the 1820 discovery included 'several crucibles, remains of the outward coating of clay to hold a large number of the moulds together, some metal, and a few coins in a corroded state'.</p> <p>Report that the soil has been considerably raised where they were found' since 1830.</p> <p>Record that Mr. Spurr, who lived on the site, had one mould still in his possession in 1855 but it was worn due to frequent washing.</p> <p>One funnel, with two moulds adhering to it, was in the possession of a Mr. James Wardell in Leeds.</p> <p>The Leeds Literary and Philosophical Society Museum collection included 'a corroded fragment of a coin of Severus, of very base metal, still remaining in a mould'.</p> <p>Boyne had also acquired some moulds from Lingwell Gate.</p>
<p>G. Wilby to Mr. Fennell, Letter, 23rd March 1863, in the Hull and Leeds Museum archives.</p>	<p>Discovery</p> <p>Ownership</p> <p>Object description</p> <p>Findspot</p> <p>Museum acquisition</p>	<p>Letter from a G. Wilby to a Mr. Fennell. (N.B. At least one Lingwell Gate mould (ARC 946/3 part (n)) was later included in the Fennell Bequest of a Mr. Fennell's collection to the Wakefield Museums collection).</p> <p>Wilby had been 'hunting over old deposits for the moulds' and had 'found a few but they are simple pieces compared with what they were'.</p> <p>Wilby sent moulds to Fennell alongside the letter, gave nine moulds away to unknown recipients, and 'sold a fine collection to the late Earl Fitzwilliam', one of which had a coin <i>in situ</i>. A historian, Dr. Denham Whitaker, had previously offered to buy the <i>in situ</i> coin for 5d, but was presumably refused.</p> <p>Reference to the draining of the field and mention of a Mr Charlesworth, although it is not clear whether this man was a landowner, a finder, a collector, or merely involved in the draining process.</p> <p>The late Thomas Pitt still had many Lingwell Gate moulds in his collection when he was living in</p>

		<p>Huddersfield, and Wilby speculated as to whether they might have been passed down to his daughter, Mrs. Down.</p> <p>A handwritten 'Yorkshire Notes and Queries' extract details and sketches a funnel found in 1830 with the note 'Lent (or sent) by Capt. Armitage', although it is not clear whether Armitage sent the extract or the funnel itself</p>
<i>Huddersfield Chronicle</i> , 25 th January 1896.	Ownership	Moulds from Lingwell Gate were exhibited at a meeting of the Huddersfield Archaeological and Topographical Association, although the owner was not reported.
<i>Yorkshire Post and Leeds Intelligencer</i> , 26 th October 1871.	Ownership	Report of the death of Mr. Charles Forrest, including reference to 'some Roman coins, coin moulds, &c., found at Lingwell Gate' in his collection
Rev. S. Sharp, 'Earthen Coin Moulds, Found at Duston, Near Northampton', in <i>The Numismatic Chronicle and Journal of the Numismatic Society</i> , New Series, Vol. 11, 1871, pp. 28-41.	Object description	'Mr. Akerman's engraving shows the moulds arranged in a triple pile. A double pile, found at Lingwell Gate, also figured, as are a crucible found at the same and a piece of metal, which is a perfect casting funnel-like mouth and downward channel.'
'Miscellaneous Rural Notes 1879', <i>Yorkshire Post and Leeds Intelligencer</i> , 5 th April 1880.	Discovery	<p>General weather observations.</p> <p>On 14th February 'whilst looking for plants found a Roman coin-mould in a mole-hill near Lingwell Gate'.</p> <p>No information is given to reveal the identity of this finder or the subsequent location of the coin mould.</p>
G. Roberts, <i>Topography and Natural History of Lofthouse and Neighbourhood</i> , 1882.	<p>Discovery</p> <p>Findspot</p> <p>Object description</p>	<p>Details of many previously unpublished finds of Lingwell Gate moulds in the early nineteenth century and previous investigations of the findspot.</p> <p>'A girl named Sarah Waterhouse' found 'a considerable number of coins and moulds' in 1814 and 1815.</p> <p>A farmer named William Spurr found 'a large number' while ploughing 'some years later'.</p>

		<p>'A gardener named Bramley' found coins and moulds in 1840.</p> <p>'Others have been picked up at various times down to 1879'.</p> <p>'In 1815 a quantity of prostrate oaks were dug up from the soil, which is deep and very black'.</p> <p>In 1840, a gardener 'when trenching a piece of waste land at Lingwell Gate, came upon a quantity of half-burnt ironstone, cinders, and other refuse of ironworks. He found at the same time some coin moulds, some very thin bricks, a small rod of iron, and a brass weapon, described as a pistol, cast in one piece with the butt end tapered'.</p> <p>Roberts also describes the discovery of 'a number of clay moulds and about 40lbs. weight of copper coins' found in 1812 by a labourer named Thomas Bulmer at the Roman Station in Stanley. The presence of coin moulds in this find is not recorded elsewhere, and is probably a conflation of the two sites.</p>
A. E. Robinson to Dr. W. E. Collinge, Letters, 8 th March 1931 to 19 th November 1931, in the Yorkshire Museum archive.	<p>Museum acquisition</p> <p>Object description</p>	<p>Letters to Dr. Walter E. Collinge, Keeper of the Yorkshire Museum.</p> <p>Identifications of eight Lingwell Gate moulds in the Yorkshire Museum collection.</p>
A. E. Robinson, 'False and Imitation Roman Coins', <i>Journal of the Antiquarian Association of the British Isles</i> , II, 1931, pp. 97-112, 171-184 and III, 1932, pp. 3-28.	<p>Ownership</p> <p>Object description</p>	<p>Details of four moulds which were illustrated by Ackerman, which were in the possession of a Mr. Douce in 1834. Their location was no longer known. It is not clear how they came to be in the possession of Mr. Douce.</p> <p>Lists objects from Lingwell Gate as being in museum collections in Leeds, Carlisle, Hull, London, Liverpool, Oxford, and Cambridge.</p>
T. Sheppard, 'Roman Coinage: Fall of the Gold Standard and the Empire', <i>Pamphlets</i> , Vol. 33, from <i>Yorkshire Post</i> , 17 th December 1931.	<p>Discovery</p> <p>Museum acquisition</p>	<p>T. Sheppard, Curator at Hull, showed coin moulds from Lingwell Gate.</p> <p>Claims that no moulds were found between 1670 and 1803. It is not clear where this information originated.</p>

		Stated that 'Mr Roberts, of Sheffield' was writing a book on the subject.
'Debased Roman Coinage: New Light Thrown by Director of Hull Museum', <i>Leeds Mercury</i> , 17th December 1931.	Discovery Museum acquisition	Quotation from T. Sheppard, Curator at Hull. Claims that no moulds were found between 1670 and 1803. It is not clear where this information originated. He adds that 'some were sent to Hull and some to York'.
T. Sheppard, 'Record of Additions Hull Museums', <i>Numismatic Notes</i> , Publication 184, 1935.	Museum acquisition	Describes the discovery of a large number of Roman coin moulds during WW1, which were purchased by Hull Museum 'where already there existed some similar coin moulds found years ago at Wakefield.'
R. Pedley, 'The Brigantes: A Study in the Early History of the North Pennines', Thesis, Durham University, 1939, pp.446-449.	Museum acquisition	Lists the British, Yorkshire, Leeds, Wakefield, Norwich and Ashmolean Museums as collections containing Lingwell Gate material.
J. W. Walker, <i>Wakefield: Its History and People</i> , Vol 1, The West Yorkshire Printing Co. Limited, Wakefield, 1939.	Museum acquisition Ownership	Writes that Lingwell Gate moulds are in the collections of 'the British, York, Leeds, and Wakefield museums, as well as in the hands of collectors.'
J. W. Brailsford, <i>Antiquities of Roman Britain</i> , Trustees of the British Museum, 3rd Ed, 1964.	Object description Ownership Museum acquisition	Illustration of a crucible and moulds which are listed as 'probably from Lingwell Gate, Wakefield, Yorks.', and entered the British Museum collection as part of the Londesborough Collection.
<i>Wakefield Museums Accession Register</i> , c.1978.	Ownership Museum acquisition	Wakefield Museums acquired the Pontefract Castle collection, including three Lingwell Gate coin moulds (P1978.3.68a-c).

R. Jackson to M. Hall, Letter, 24 th January 1992, in the Hull Museums and Leeds Museums archives.	Ownership Museum acquisition	<p>A letter from Ralph Jackson, from the Department of Prehistoric and Romano-British Antiquities at the British Museum, sent to Mark Hall at Wakefield Museum.</p> <p>Confirms that the British Museum holds Lingwell Gate material from at least three sources: donated by Thomas Pitt, donated as part of the Londesborough Collection, and a probable Lingwell Gate object donated by a George Meyrick.</p>
E. Pirie to M. Hall, Letter, 18 th February 1992, in the Hull Museums and Leeds Museums archives.	Ownership Museum acquisition	<p>Letter from Elizabeth Pirie at Leeds Museums to Mark Hall at Wakefield Museum.</p> <p>States that the Leeds Philosophical Society received at least two donations of Lingwell Gate finds; one in 1829, which can be attributed to Clapham, but also one in 1852.</p>
Mark Hall, Note, 1992, in the Wakefield Museums archive.	Ownership Museum acquisition	<p>A note made by Mark Hall in the Wakefield Museums paper archive.</p> <p>Four Lingwell Gate moulds were donated in 1982 by a Mr. Baines (1982.38.3a-d). These were reportedly purchased by Baines from a publican called Mr. Hall in c.1950. Hall had kept a pub in Normanton, Wakefield, before retiring to Campsall Mount, Pontefract, at over 70 years old.</p>

5.3 Roman Period

1. Why were the coin moulds made?

a. How did the Lingwell Gate coin moulds function?

The Lingwell Gate coin moulds were created by pressing a *denarius* into a circle of clay to create an impression of one side of the coin in the clay. A second circle of clay would have then been pressed on top to create an impression of the other side of the coin, and coins and moulds would continue to be added to create a stack. When the moulds had air dried the coins would be removed and multiple stacks would have been packed in an outer layer of clay, leaving a central cavity with a clay funnel at the top. Molten metal would have then been poured into the moulds to create cast coins.

The finer details of the manufacturing process undertaken at Lingwell Gate are not yet fully understood. Dana Goodburn Brown's recreation of the coin mould and coin

production processes used at 85 London Wall gave many insights into the detailed and methodical approach used at this site.⁶⁷ Further investigation of the Lingwell Gate moulds would be necessary in order to uncover how many of techniques were shared or differed between the two production sites. For example, Goodburn Brown revealed that at the 85 London Wall site coins were coated in a fine powder before they were impressed into the clay disks, that cast copies were sometimes used to create the impressions, that before they were air dried the stacks were trimmed into smooth cylinders using a counter or disk as a guide, and that grooves were engraved into the outer edges of the stacks to allow for accurate reassembly after the coins had been removed.⁶⁸ An initial comparison of the Lingwell Gate moulds reveals that there is no sign of any markings in the outer edges of the stacks. The 85 London Wall moulds also each consistently bear one obverse and one reverse impression from two coins, suggesting a precise methodology to accurately replicate official coinage.⁶⁹ There is no such consistency found in the Lingwell Gate moulds, with many bearing two obverse or two reverse impressions. Research undertaken into coin moulds found at a site in Cologne, Germany, demonstrates that mould stacks were placed together in sets of three, and this is also believed to have been the case at 85 London Wall.⁷⁰ However, antiquarian sources suggest that at Lingwell Gate stacks of 12 or 14 moulds were packed together in twos.⁷¹ The metal alloy used to cast coins at Lingwell Gate is also as yet unknown and antiquarian sources are contradictory as to whether the coins found *in situ* were copper-alloy or silver.⁷² If the copies were a copper-alloy they may have then gone on to be plated in silver. However, if they contained a similar proportion of silver to the debased *denarii* in circulation they might have been ready to enter circulation as soon as any casting sprues had been filed away. Miscast *denarii* found within the 85 London Wall moulds were a silver alloy.⁷³

While it has been possible to gain an overview of the production process underway at Lingwell Gate there is still much to be learnt, and further investigation of the site, analysis of finds, and experimental reconstruction of possible production processes could greatly improve the understanding of the coin manufacturing activity taking place at Lingwell Gate in the early third century.

b. What types of coin were being copied?

Of 200 Lingwell Gate coin moulds catalogued there were 271 discernible coin impressions. 111 of these impressions could not be assigned to an issuer, leaving a dataset of 160 identified coin impressions. Details of these identifications can be found in section 8.1.

⁶⁷ Hall and Goodburn Brown, 'Faking it – the evidence for counterfeiting coins in Roman London'.

⁶⁸ *Ibid.*, p.123.

⁶⁹ Hall, 'With Criminal Intent? Forgers at Work in Roman London', p.174.

⁷⁰ Hall and Goodburn Brown, 'Faking it – the evidence for counterfeiting coins in Roman London', p.125.

⁷¹ W. Wansey, *Gentleman's Magazine*, July 1829; Rev. J. B. Reade, *The Numismatic Chronicle* (1838-1842), June 1838 – April 1839, Vol. 1.

⁷² *British Museum Accession Register*, 12th May 1821; Reade, 'Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830'; Reade, *The Numismatic Chronicle* (1838-1842); Boyne, 'On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.'

⁷³ Hall and Goodburn Brown, 'Faking it – the evidence for counterfeiting coins in Roman London', pp.125-126.

The earliest identified coin impression is of a *denarius* of Trajan, who ruled from AD 98-117, and the latest impression is of a *denarius* of Maximinus, AD 235-238. The most frequently occurring issuer whose *denarii* are represented is Septimius Severus, ruling AD 193-211, numbering 36 impressions. Impressions of coins issued by Caracalla, AD 198-217, are the second most common, numbering 26, followed by 23 impressions of coins issued in the name of Julia Domna, AD 193-217, and 22 issued by Severus Alexander, AD 222-235. Other issuers are represented by ten or fewer impressions.

The coin impressions range from Reece Periods 5 to 11, with the vast majority of impressions dating to Reece Periods 10 and 11. The distribution is set out in the table below.

Reece Period			Reece Period Count
5	AD 96-117	Trajanic	2
6	AD 117-138	Hadrianic	1
7	AD 138-161	Antonine I	0
8	AD 161-180	Antonine II	6
9	AD 180-193	Antonine III	10
10	AD 193-222	Severus to Elagabalus	111
11	AD 222-238	Later Severan	30
12	AD 238-260	Gordian III to Valerian	0

All the identified coin impressions were taken from *denarii*. In some collections, including the Yorkshire Museum, Hull and East Riding Museum, the Museum of Liverpool, and Wakefield Museums, Lingwell Gate moulds had become intermingled with moulds from other sites and, in some cases, countries.

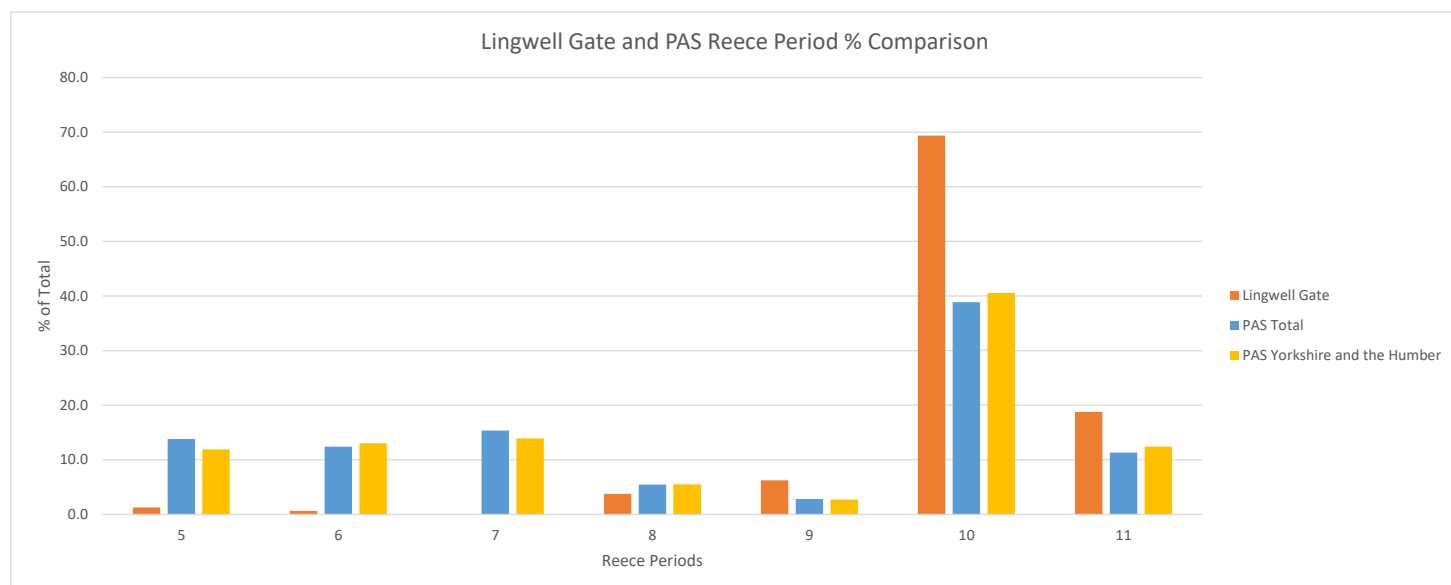
The coin moulds identified span eight museum collections and are from a large variety of acquisition sources. As such they are believed to be a representative sample of the unknown total number of moulds found at Lingwell Gate.

c. How does the assemblage compare to coin loss and coin hoard data?

In order to better interpret the data available through the identification of the Lingwell Gate moulds it is necessary to compare it against and assess it within the context of numismatic datasets from the same period. The best available data for such analysis is the casual coin loss data represented by individual coin finds recorded on the PAS database, and the composition of hoards with a similar *terminus post quem*.

In many ways the phenomena of casual coin loss and hoarding are very different from the phenomenon of coin mould production. Casual loss data represents the number and proportions of coins lost at any time between being issued and being found, and for the most part do not represent intentional deposition. Hoard data represents the intentional collection of coins over a relatively short period of time, removing them from circulation for long-term storage or permanent deposition, and can result from a number of different possible motivations. Coin copying also represents the intentional collection of coins over a short period of time for a variety of possible motives, but differs in that these coins

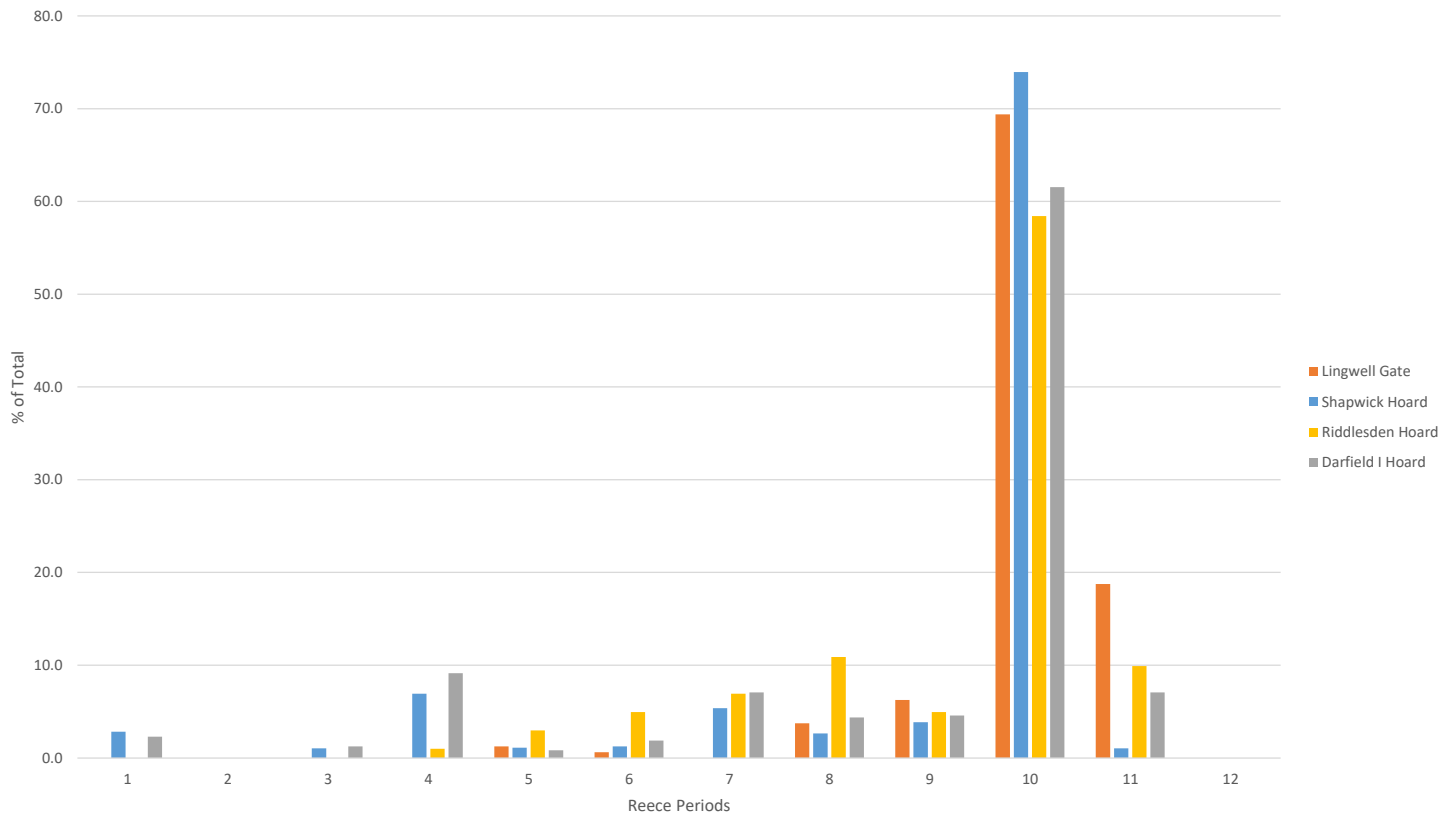
were selected for the purpose of creating new coins to be added into circulation, with deposition of the moulds and miscasts an unintentional by-product of the production process. The similarities and differences that emerge through comparison of these datasets can improve our understanding of the production of and possible motivations for the use of coin moulds in early third century Roman Britain.



By plotting the Reece Periods represented by the identifiable Lingwell Gate moulds against the relative proportions of the same Reece Periods represented by casual losses on the PAS database, both as a whole and in the Yorkshire and the Humber region, it is immediately clear that there are proportionally far more of the later Reece Periods represented in the Lingwell Gate moulds than in the PAS data. Reece Periods 5 to 8 represent only 5.8% of the identifiable Lingwell Gate impressions compared to 47% of the total PAS records and 44.3% of coins recorded from the Yorkshire and the Humber region within the same time period. There were no identifiable impressions dating to Reece Period 7 in the Lingwell Gate catalogue. Reece Periods 9 to 11 show a different trend. There are marginally more Reece Period 9 impressions from Lingwell Gate, representing 6.3%, compared to 2.8% of the PAS total and 2.7% of PAS regional comparative data. Reece Period 10 forms a much larger proportion of the Lingwell Gate moulds, at 69.4%, than of the PAS total, at 38.9%, and the PAS regional data, at 40.5%. Reece Period 11 is also higher, although not to the extent of Period 10, forming 18.8% of the Lingwell Gate data compared to 11.3% of the PAS total and 12.4% of the PAS regional statistics for these same periods.

The Lingwell Gate proportions are far more closely aligned with proportions found in contemporaneous hoards, although the trend towards later issues remains. Impressions of coins from Reece Periods 1-4 are entirely absent from the Lingwell Gate dataset. Reece Period 7 is also absent from the Lingwell Gate moulds, although the reason for this is unclear. The proportions of coins from Reece Periods 5, 6, and 8 are similar. Lingwell Gate's trend towards later Reece Periods emerges strongly in Periods 9 to 11. Reece Period 10 by far the highest proportion of Lingwell Gate moulds, at 69.4%, lower only than the Shapwick Hoard, which dates to just after the end of this Reece Period and consists of 73.9% Reece Period 10 coins. Lingwell Gate contains almost twice as many impressions from Reece Period 11 as the next highest proportion in the comparable hoards, with 18.8% of Lingwell Gate impressions dating to this period compared to 9.9%

Lingwell Gate and Hoards Reece Period % Comparison



in the Riddlesden Hoard. Overall, it is clear from comparing these datasets that Lingwell Gate is broadly similar to contemporaneous hoards, mapping most closely onto the trend found in the Darfield I hoard which, like Lingwell Gate, has its latest coin dating to AD 235-238, but that there is a notable absence of the earliest Reece Periods and a disproportionately large presence of coin impressions from later Reece Periods.

The distinct trend could be an indication of a process of intentional selection when the *denarii* were removed from circulation to be used to create moulds or melted down for their silver content. Earlier issues would have been more worn through hundreds of years of circulation and would have had a higher silver content than later debased issues, so could have been melted down for recasting rather than used for mould-making. Later issues of *denarii* had been in circulation for a shorter period of time and would have been less worn, leaving clearer impressions in the clay moulds and creating more detailed cast copies. By a similar logic, cast copies with a low silver content might have created more convincing copies of later debased *denarii*, which also had a low silver content, meaning that it was preferable to copy later issues than earlier issues as the deception was less likely to be detected. It is also possible, although somewhat less likely, that if the cast coins were being created with official sanction to supplement an insufficient supply of struck *denarii* there might have been an official preference for newer, more recent issues.

The number of coin moulds produced does not necessarily represent the number of coins in the manufacturer's possession, as each coin could be used to create multiple moulds. Further study could reveal how many extant impressions were created from the same coins, and the maximum number of coins a manufacturers must have had access to in order to create the range of impressions represented.

Comparison of these datasets demonstrate that the phenomenon of coin copying is far more closely aligned to the data represented by hoarding than to the PAS data representing casual loss, showing that, like a hoard, the Lingwell Gate moulds provide an insight into a brief period of time in the years leading up to their *terminus post quem* of AD 238.

d. What was the production period for the Lingwell Gate moulds?

What is not suggested by the presence of coin impressions dating between AD 98 and AD 238 is a production period of the same duration.

The *denarius* was the predominant Roman denomination for 400 years, and remained in circulation in Britain from before the Roman invasion until they fell out of use shortly after the reintroduction of the radiate in AD 238. The longevity of this denomination means that early issues of coinage, such as the *denarius* of Trajan copied by a Lingwell Gate mould, often remained in circulation hundreds of years later, and due to the high silver content of earlier *denarii* might have been more highly prized than later issues.

The date range of coins copied at Lingwell Gate is consistent with the variety of coins in circulation in the early third century, as revealed through comparison with PAS and third century hoard data. The date of the latest impression in the moulds, AD 235-238, is therefore a better indicator of a probable production date than the earliest coin, in that coin copying at Lingwell Gate must have been taking place during or shortly after this period, but cannot have continued much later than AD 238 as no later coins are represented.

AD 238 marks the reintroduction of the radiate coinage, after which the *denarius* soon ceased to be officially produced. Although *denarii* were issued by Balbinus, Pupienus, and Gordian III the lack of their presence within the Lingwell Gate extant moulds could be more of an indicator of the short reigns of Balbinus and Pupienus and the predominance of the radiate under Gordian III than an indicator that coin mould production did not take place or continue into this period. Instead, the use of coin moulds could have been a direct response to the reintroduction of the radiate, making use of whatever *denarii* remained in circulation around AD 238 to unofficially maintain the denomination.

This economic context, the close alignment of the data with contemporaneous hoards, and the *terminus post quem* of AD 238 suggests a production date range of the late AD 230s for the objects found at Lingwell Gate.

e. How can the findspot inform our understanding of the Lingwell Gate coin moulds?

The site at Lingwell Gate is rural, lending some support to the theory that coin mould production at Lingwell Gate was an illicit undertaking, carried out away from onlookers and out of sight of Roman officials. There are records of only 14 Roman finds on the PAS database within a 5km (3 mile) radius of Lingwell Gate, four of which are hoards.⁷⁴ The close proximity of these hoards seems potentially significant; however their deposition

⁷⁴ As of 13/11/2020.

spans hundreds of years, suggesting there is little or connection between them.⁷⁵ Antiquarian records refer to a nearby site known as the Roman Station, which was thought to have been the site of a short-term Roman camp.⁷⁶ This site was excavated in 1969 and was discovered to be Medieval.⁷⁷ Overall there seems to have been little to no early third century activity in the immediate vicinity of the Lingwell Gate site.

However, data from slightly further afield suggests that the coin copying activity at Lingwell Gate might have been taking place as part of a broader regional trend in the late AD 230s. Four of the five hoards listed in Bland's 'Checklist of Hoards' as containing latest coins issued by Maximinus, between AD 235 and AD 238, were found in South and West Yorkshire, all ranging between 12 and 20 miles of Lingwell Gate.⁷⁸ Another contemporaneous hoard, with a latest coin issued by Pupienus in AD 238, was found at Bingley (Keighley) in West Yorkshire, only around 15 miles from Lingwell Gate.⁷⁹ Further study into localised Roman activity around AD 238 would be required in order to draw any conclusions, but the predominance of hoarding in the region in a short span of a few years possibly indicates a local trend.

The proximity of the findspot to Bowling Beck could offer an important insight into why coin mould manufacture and coin casting took place specifically on this site. Easy access to water could have been crucial for the process of moistening, shaping, and moulding clay and for smelting the metals used to create the copied coins. The discovery of moulds at Lingwell Gate is described by antiquarian sources as having occurred in several ways; through ploughing, by being washed up in heavy rains, in draining the field, and through archaeological digging.⁸⁰ It is clear, then, that prior to Victorian agricultural draining the changing levels of Bowling Beck made the field in which the moulds were found a damper environment than is now apparent upon visiting the site. Closer analysis of the coin mould fabric and findspot soil conditions and surrounding geology would be necessary in order to confirm whether the clay used to make the moulds was sourced at the findspot, in the local area, or from further afield, although antiquarian investigations have suggested that clay sourced at the findspot is consistent with the coin mould fabric.⁸¹

Another significant factor in understanding the site is that, despite its rural location, Lingwell Gate was not isolated. The field in which the coin moulds were found lies 7 miles to the west of *Lagentium* (Castleford), a first century fort which was later

⁷⁵ IARCH-3B5D03, IARCH-26625B, IARCH-11A6E6, and IARCH-1A2533.

⁷⁶ G. Roberts, *Topography and Natural History of Lofthouse and Neighbourhood*, 1882, pp.2-3.

⁷⁷ PastScape Monument Number 1134306.

⁷⁸ Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, p.200; IARCH-BD112B, IARCH-E07304, IARCH-B15CCA, IARCH-896710.

⁷⁹ Bland, *Coin Hoards and Hoarding in Roman Britain AD 43-c.498*, p.200; IARCH-622BF4.

⁸⁰ 'Appendix', *Archaeologia*, Vol.19, 1st April 1820, pp.412-413; *Morning Post*, 14th November 1822; *Hull Advertiser and Exchange Gazette*, 15th November 1822; *Leeds Mercury*, 8th May 1830; *The Scotsman*, 12th May 1830; *Lancaster Gazette*, 22nd May 1830; W. Wansey, *The Numismatic Journal*, Vol. 2, June 1837-April 1838; Boyne, 'On the Roman Coin Moulds found at Lingwellgate, in the Parish of Rothwell, and an attempt to shew that they were made for the casting of Coins by authority.', 'Miscellaneous Rural Notes 1879', *Yorkshire Post and Leeds Intelligencer*, 5th April 1880; Roberts, *Topography and Natural History of Lofthouse and Neighbourhood*.

⁸¹ Reade, 'Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830'.

abandoned and then reoccupied as a civilian settlement in the mid-third century AD.⁸² A short stretch of Roman road (RR283(x)) has been identified, running westwards from *Lagentium*, which, if continued in a relatively straight line, would have passed very close to the Lingwell Gate site.⁸³ Just 3 miles further east from *Lagentium* is Ermine Street, the primary transport route to the civilian and military settlements in the northernmost outpost of the Roman Empire, along which anyone and anything travelling from *Londinium* (London) in the south-east to the newly-appointed *civitas* of *Eboracum* (York), the capital of *Britannia Inferior*, and further north, to Hadrian's Wall, would have passed. The location was secluded but well connected, providing ample opportunity for the copied coins to enter into circulation.

⁸² Wakefield Council, *Roman Castleford*.

⁸³ Roads of Roman Britain website.

6.0 Conclusions

Hundreds of Roman coin moulds, and possibly thousands of cast Roman *denarii*, were produced at Lingwell Gate, a rural site on the outskirts of modern day Wakefield, in the early third century AD. This project has set out to trace as many of these finds as possible, to compile information about the site, the objects, their antiquarian discovery, and their subsequent interpretation into one resource, and to begin to assess what insights this information can give into the intriguing and fascinating third century activity at the site. It is hoped that this report can serve as a valuable resource for better understanding Lingwell Gate, and as a starting point for many avenues of future research.

Of the three overarching research questions set out at the beginning of this report the first two, *Where are the Lingwell Gate coin moulds?* and *When and how were the moulds discovered?* have definitive answers, which have been addressed in section 5.0. The third remains unclear, and will be the focus of this conclusion.

6.1 Why were the coin moulds made?

Production of coin moulds at Lingwell Gate took place at a turning point in the Roman economy. The late-second and early-third century economy was a time when army pay, in *denarii*, was vastly increased while silver supplies were insufficient, leading to heavy debasement of the *denarius*. The need to transport large quantities of debased *denarii* to provinces with a large military presence meant that silver coinage was given priority over lower denominations, leading to a shortage of small change in circulation and the phenomenon of the casting of illegal but officially tolerated copper-alloy *limesfalsa* to meet this demand. In AD 215 Caracalla introduced a new coin, the radiate, with an official value of two *denarii* but with a silver content equivalent to only 1.5 *denarii*. This new denomination lasted only four years before falling out of use, only to be successfully reintroduced in AD 238. After this point the *denarius*, the predominant denomination in the Roman Empire for four centuries, fell out of use.

It is within this economic context that the Lingwell Gate moulds should be understood. There are several possible explanations for why coins were cast in such large quantities at Lingwell Gate. One suggestion, favoured by many antiquarians, is that *denarii* were cast at Lingwell Gate on the orders of Roman officials in order to supply pay for the Roman army in the north of *Britannia*. Another, simpler suggestion is that the *denarius* had become so debased that there was an appealing and easy profit to be made in melting down older issues, with higher silver content, and casting copies of the newer debased *denarii*, creating up to twice as many coins with the same official value, and that this opportunity was taken by enterprising criminals. More recently the suggestion has emerged, based on the *limesfalsa* phenomenon on the continent, that cast copies of *denarii* were recognised as lower value than officially produced coinage, and were used in place of copper-alloy denominations which were in limited supply.

There is one more possible explanation for coin copying at Lingwell Gate. By identifying the coins being copied at Lingwell Gate, giving a *terminus post quem* of AD 238, and by comparing this dataset with data from contemporaneous hoards, it has been demonstrated that coin production took place at Lingwell Gate in the late AD 230s. This period coincides with a significant economic transition, at the watershed between the centuries-long dominance of the *denarius* and the rise of the radiate. It is possible that

Lingwell Gate represents localised resistance to this change. The debasement of the *denarius* along with the introduction, failure, and reintroduction of the new radiate denomination may have caused public trust in officially produced currency to falter, meaning that cast copies of *denarii* may have been more readily accepted, and were perhaps even preferred to the newly circulating radiate coinage. The coin producers at Lingwell Gate were perhaps, supplementing a dwindling supply of an older, more reliable denomination at a time when official coinage was drastically changing.

It may never be possible to fully understand the reasons for the coin mould and cast coin production taking place at Lingwell Gate in the early third century. Nevertheless, there is enormous potential to discover more about the site and the finds it produced, and modern research approaches can shed light on activity at the site in numerous ways which have never before been possible. What is clear is that the objects and site discovered at Lingwell Gate have the potential to offer invaluable insights into a little-understood period of economic change in Roman Britain, representing the real-life impact of Empire-wide economic policy.

7.0 Future Research

It has not been possible to explore all avenues of potential research into the Lingwell Gate coin moulds over the course of this Regional Research Fellowship. This section will detail a number of research approaches which were identified as being of potential interest, but which were ultimately beyond the scope of the current project. These have been broadly divided into the categories of Numismatic Research, Scientific Analysis, and Archaeological Intervention. It is hoped that this list might serve as the foundation for future work.

7.1 Numismatic Research

1. Refining date ranges

Date ranges were assigned to the identified copied coins based on the dates of emperors' reigns. These date ranges could be refined further through research into the duration of each issue of different obverse and reverse types.

2. Uniting reverse types and obverse types

Once all the copied types have been identified it may be possible to match obverses with reverses, which in some cases might allow Roman Imperial Coinage reference numbers to be assigned.

3. Reconstructing original mould stacks

Some Lingwell Gate coin moulds were found still stacked. It might be possible to reconstruct some of these stacks using mould measurements, obverse and reverse identifications and pairings, and fabric similarities. This might be particularly effective with museum collections which only contain a handful of moulds from a single acquisition source.

4. Identifying how many moulds were made per coin

It is clear from very close similarities between some mould impressions that the same official coin could be used to create multiple moulds. It would be possible to identify these matching moulds and quantify how many examples of reuse are present in the traced moulds.

5. Identifying how many different coins were used to make the moulds

By identifying matched pairs of obverses and reverses and by quantifying the instances of reuse in the manufacture of moulds it would be possible to estimate the number of official coins needed to produce the traced moulds.

6. Matching cast coins in museum collections with moulds

Some of the moulds were found with cast copies still in situ within them. At least two of these entered into museum collections. These copies have not yet been identified within the collections. However, by comparing cast copies with the moulds it might be possible to reunite some moulds with the coins they produced.

7. Tracing moulds in private collections

Many named antiquarians who collected Lingwell Gate moulds, crucibles, funnels, and coins have been identified over the course of this project. Only some of these objects have been traced to museum collections. It might be possible to research these individuals further and follow the movement of their collections to trace more examples of finds from Lingwell Gate.

8. Comparison with other assemblages of coin moulds

Several other sites in Britain and France have produced Roman coin moulds, some of which are of similar date to the Lingwell Gate moulds. Comparing the Lingwell Gate moulds with these assemblages would contribute to a more thorough understanding of the site and objects, as well as the use of coin moulds across Roman Britain and Gaul.

7.2 Scientific Analysis

9. Fabric analysis

Antiquarian sources describe seeing ‘fossil infusoria’, microscopic fossilised organisms, in the fabric of coin moulds from Lingwell Gate.⁸⁴ There is potential to undertake further analysis of the Lingwell Gate moulds in museum collections to discover if there are uniquely identifiable characteristics to the clay used at this site. This could be undertaken through microscopic analysis and/or chemical analysis. This analysis could be used to support the positive identification of Lingwell Gate moulds in museum collections where moulds from multiple sites have become intermingled. There is also potential to try to identify a clay source close to the production site through comparison with locally produced Roman ceramics or clay samples from the site. Discussions are underway between York Museums Trust and the University of York to explore the potential of these research approaches.

10. pXRF of coins produced by the moulds

Some of the moulds were found with cast copies still *in situ* within them. At least two of these entered into museum collections. These copies have not yet been identified within the collections. If copied coins produced at Lingwell Gate can be traced pXRF analysis could provide valuable insights into the production process and metal composition of the copies produced.

11. pXRF of coin moulds to detect residues

pXRF of the interiors of coin moulds has been successfully undertaken to detect metal residues and determine metallic composition of the copies produced using the coin moulds found at 85 London Wall.⁸⁵ Similar analysis of the Lingwell Gate moulds could be undertaken in conjunction with pXRF of coins found in moulds or, if no copied coins can be traced, in its stead to reveal similar insights into coin copy production methods.

7.3 Archaeological Investigation

12. Geophysical survey and/or excavation of the site

Conducting a geophysical survey of the site has the potential to provide invaluable insights into the nature of the Roman activity at Lingwell Gate, the scale of the site, the exact location of areas of production, and the technologies involved in coin mould production and use. Subsequent excavation has the potential to uncover more moulds and traces of their production and use, which could be recorded and analysed according to modern archaeological best practice.

⁸⁴ Reade, ‘Roman Coin-Moulds found at Lingwell Gate, near Wakefield, in the years 1697, 1706, 1820, and 1830’.

⁸⁵ Hall, ‘With Criminal Intent? Forgers at Work in Roman London’, p.178.

13. Experimental archaeology

There is potential to replicate and build upon the experimental archaeology undertaken by Dana Goodburn Brown in her research into the production of the Roman coin moulds found at 85 London Wall.⁸⁶ Recreating these experiments and adapting them to emulate the conditions and production methodology suggested by the available evidence from Lingwell Gate could reveal important similarities and differences between production conditions and methodologies at the two sites, giving invaluable insights into the phenomenon of coin copying not only at these two sites but across Britain and the Roman Empire.

⁸⁶ Hall, 'With Criminal Intent? Forgers at Work in Roman London'; Hall and Goodburn Brown, 'Faking it – the evidence for counterfeiting coins in Roman London'.

8.0 Appendices

8.1 Catalogue

This catalogue lists the locations, accession numbers, and identifications of the Lingwell Gate moulds that have been successfully traced in museum collections over the course of this project. The catalogue is arranged chronologically by the earliest known issuer on each mould, and then by the issuer of the second impression on each mould where this could be determined.

A number of certain and probable Lingwell Gate coin moulds have been traced but could not yet be included in this catalogue. It is an ambition to add these to the catalogue in the future, although in some cases large-scale documentation projects must be undertaken before this is possible. These moulds are:

- 74 Lingwell Gate moulds, four boxes probably containing additional Lingwell Gate moulds, and one or more crucible possibly from Lingwell Gate in the British Museum collections
- 45 Lingwell Gate mould fragments held by the Society for Antiquaries of London
- An unknown number of probable Lingwell Gate moulds in the collection of Manchester Museum.

Running Number	Collection	Accession Number	Single or Double Sided?	Obverse or Reverse?	Inscription	Description	Emperor(s) or Empress	Date (early)	Date (late)	Reece Period
1	York Museums Trust	YORYM : H2402.19.1	Single	Obverse	[IMP] CAES NER TRAI[...]	Laureate bust right.	Trajan	98	117	5
2	York Museums Trust	YORYM : H2402.45	Double	Obverse	[] M AVR []	Laureate ?bust right	Marcus Aurelius	161	180	8
				Reverse	[P] M TR P [...] SPQR	Mars advancing right holding spear and trophy	Trajan	98	117	5
3	Hull Museums	Hull 6	Double	Obverse	IMP [...] AR TRAIAN H[...]	Bust right	Hadrian	117	138	6
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
4	Hull Museums	Hull 1	Double	Obverse	FAVSTINA AVGVSTA	Diademed draped bust right	Faustina II	147	175	8
				Reverse	[] OS	Unclear	Uncertain	Unclear	Unclear	Unclear
5	Leeds Museums and Galleries	LEEDM.N.2014.0012.004	Single	Obverse	L VERVS AVG ARM PARTH MAX	Bare head right	Lucius Verus	161	169	8
6	York Museums Trust	YORYM : H2402.50	Double	Obverse	Illegible	? Head right	Marcus Aurelius	161	180	8
				Reverse	[...] IMP [...] COS V [...]	Archway, Janus within, holding scepter.	Commodus	177	192	9
7	York Museums Trust	YORYM : H2402.40	Double	Obverse	[...] AVG [...]	Laureate head right	Marcus Aurelius	161	180	8
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
8	Norwich Museums	1845.37.5	Double	Obverse	LVCILLA AVGVSTA	Draped bust right.	Lucilla	164	169	8
				Obverse or Reverse	[...] CO [...]	Draped bust right, young emperor.	Uncertain. Possibly Elagabalus, Caracalla, Geta.	Unclear	Unclear	Unclear
9	York Museums Trust	YORYM : H2402.57	Single	Obverse	M COMM ANT P [FEL AVG] BRIT PP	Laureate head right	Commodus	177	192	9
10	Leeds Museums and Galleries	LEEDM.N.2014.0012.003	Single	Reverse	[LIB] AVG PM [TR P X] V COS VI] V COS VI	Libertas standing left, holding pileus and scepter.	Commodus	177	192	9
11	Wakefield Museums	tn599	Single	Obverse	[COM] MODVS [ANTONINVS AVG]	Laureate head right	Commodus	177	192	9
12	York Museums Trust	YORYM : H2402.20	Double	Obverse	L AVREL COMMODVS AVG	Laureate, cuirassed, bust right	Commodus	177	192	9
				Reverse	TR P VI IMP [...] COS [...]	Female figure standing left holding (?) and cornucopia	Uncertain	Unclear	Unclear	Unclear
13	Wakefield Museums	tn607	Double	Obverse	L AVR[EL] COMMODVS AVG	Laureate cuirassed bust right	Commodus	177	192	9
				Reverse	Illegible	Venus standing right, leaning on column and with legs crossed, holding apple and palm	Septimius Severus. Possibly Julia Domna.	193	211	10
14	Wakefield Museums	ARC.1074	Double	Obverse	M COMMA[.] AVG []	Laureate head right.	Commodus	177	192	9
				Reverse	PM TR P XVI [...] S XIII PP	Lion advancing left, holding thunderbolt in mouth	Caracalla	197	217	10
15	Wakefield Museums	tn602	Double	Obverse	[...] MM [...]	Laureate head right	Commodus	177	192	9
				Reverse	Illegible	Lion advancing left, holding thunderbolt in mouth	Caracalla	197	217	10
16	Wakefield Museums	tn617	Double	Obverse	P SEPT GETA CAES [PONT]	Draped bust right.	Geta	198	212	10
				Reverse	LIB AVG PM TR P XV COS VI	Libertas standing left, holding pileus and scepter.	Commodus	177	192	9
17	Wakefield Museums	1982.38.3b	Double	Obverse	[...] MA[NT] ONI [...]	Draped bust right.	Commodus	177	192	9
				Reverse	PM TR P COS PP	Salus seated left, feeding snake on altar.	Severus Alexander. Possibly Maximinus I.	222	235	11
18	Wakefield Museums	tn608	Double	Obverse	[D] CLOD SEPT [AL] BIN [CAES]	Head right	Clodius Albinus	195	196	10
				Reverse	Illegible	Possibly female figure (Faustina II?) riding biga right	Uncertain	Unclear	Unclear	Unclear
19	York Museums Trust	YORYM : H2402.16.1	Single	Obverse	[] C L SEP SEV PIVS AVG	Laureate head right.	Septimius Severus	193	211	10
20	York Museums Trust	YORYM : H2402.27	Single	Reverse	[P] ERPETVITATI [AV] G	Perpetuitas standing left, leaning on column, holding globe and scepter.	Septimius Severus	193	211	10
21	York Museums Trust	YORYM : H2402.35	Single	Obverse	L SEPT SEV AVG IM[P XI PART MAX]	Laureate bust right.	Septimius Severus	193	211	10
22	Leeds Museums and Galleries	LEEDM.N.2014.0012.001	Single	Obverse	SEVERVS PIVS AVG	Laureate head right	Septimius Severus	193	211	10
23	Leeds Museums and Galleries	LEEDM.N.2014.0012.016	Single	Obverse	[S] EVERVS PIVS AVG	Laureate bust right.	Septimius Severus	193	211	10
24	Wakefield Museums	ARC.1078	Single	Reverse	[VICTOR] IAE AVGG FEL	Victory advancing left, holding opened wreath over shield	Septimius Severus	193	211	10
25	Wakefield Museums	tn596.11	Single	Obverse	[L] SEPT SEV PER[T...]	Laureate head right	Septimius Severus	193	211	10

26	Wakefield Museums	tn598	Single	Obverse	[]SEVER[]	Laureate head right	Septimius Severus	193	211	10
27	Wakefield Museums	tn609	Single	Obverse	[L] SEPT SEV [...]	Laureate head right	Septimius Severus	193	211	10
28	York Museums Trust	YORYM : H2402.46	Double	Obverse	SEVERVS PIVS AVG	Laureate head right	Septimius Severus	193	211	10
				Obverse	Illegible	Head right	Septimius Severus	193	211	10
29	Hull Museums	Hull 4	Double	Reverse	PM TR P IIII [...]	Minerva standing left, holding spear and shield.	Septimius Severus	193	211	10
				Reverse	[...] COS II [...]	Minerva standing left, holding spear and shield.	Septimius Severus	193	211	10
30	Wakefield Museums	tn596.6	Double	Obverse	[...]SEVER[...]	Laureate head right	Septimius Severus	193	211	10
				Reverse	[] IIII COS []	Minerva standing left, holding spear and shield.	Septimius Severus	193	211	10
31	York Museums Trust	YORYM : H2402.9.1	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	PER[PE]TVITATI AVG	Perpetuitas standing left, leaning on column, holding globe and scepter.	Septimius Severus	193	211	10
32	York Museums Trust	YORYM : H2402.10.1	Double	Obverse	[L SEPT SEV PERT] AVG IMP VIII	Laureate head right.	Septimius Severus	193	211	10
				Reverse	HILARITAS	Hilaritas standing left, holding palm and cornucopia; child to either side.	Julia Domna	193	217	10
33	York Museums Trust	YORYM : H2402.33	Double	Obverse	Illegible	Laureate bust right.	Septimius Severus	193	211	10
				Reverse	MA[T] AVGG MA[T SEN] M PATR	Julia Domna standing left, holding branch and scepter.	Julia Domna	193	217	10
34	Wakefield Museums	tn614	Double	Obverse	SEVERVS PIVS AVG	Laureate head right	Septimius Severus	193	211	10
				Reverse	PM TR P XVIII COS IIII PP	Lion advancing left, holding thunderbolt in mouth	Caracalla	197	217	10
35	York Museums Trust	YORYM : H2402.34	Double	Obverse	[...]SEV PERT[...]	Laureate bust right.	Septimius Severus	193	211	10
				Reverse	[PONT/PONTIF] MAX TR P COS P[P]	Felicitas standing left, holding caduceus and cornucopia.	Macrinus	217	218	10
36	York Museums Trust	YORYM : H2402.3.1	Double	Obverse	[]SEV PERT []	Laureate bust right.	Septimius Severus	193	211	10
				Reverse	PM TR P IIII COS II[...]	Probably Victory standing left, holding opened wreath; shield on either side by feet	Elagabalus	218	222	10
37	York Museums Trust	YORYM : H2402.7.1	Double	Obverse	IMP ANTONINVS PIVS AVG	Laureate, ?draped and/or ?cuiassed bust right	Elagabalus	218	222	10
				Reverse	FELICIT TEMPOR	Cornucopiae (2) crossed, corn ear in between.	Septimius Severus	193	211	10
38	York Museums Trust	YORYM : H2402.8.1	Double	Obverse	[SEVE]RVS P[IVS AVG]	Laureate head right	Septimius Severus	193	211	10
				Reverse	[S]ECVRITA[S PVBICA]	Securitas seated left, holding globe	Uncertain. Possibly Septimius Severus, Caracalla	Unclear	Unclear	Unclear
39	York Museums Trust	YORYM : H2402.13.1	Double	Obverse	[] SEVERVS []	Laureate head right.	Septimius Severus	193	211	10
				Reverse	PI[...]A[...]ITA	Figure standing left holding ? and cornucopia	Uncertain	Unclear	Unclear	Unclear
40	York Museums Trust	YORYM : H2402.23	Double	Obverse	SEVERVS [...]	Laureate head right	Septimius Severus	193	211	10
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
41	York Museums Trust	YORYM : H2402.42	Double	Obverse	L SEP SEV []R []	Laureate head right	Septimius Severus	193	211	10
				Reverse	Illegible	Victory advancing left holding wreath and palm	Uncertain	Unclear	Unclear	Unclear
42	York Museums Trust	YORYM : H2402.53	Double	Reverse	Illegible	Possibly a horse advancing/rearing left	Uncertain	Unclear	Unclear	Unclear
				Obverse	L SEP SEV []	Laureate head right	Septimius Severus	193	211	10
43	Norwich Museums	1845.37.2	Double	Obverse	[] AVG	Laureate head right	Septimius Severus	193	211	10
				Reverse	[] COS II	Figure standing left holding sceptre and unclear object	Uncertain	Unclear	Unclear	Unclear
44	Wakefield Museums	1982.38.3a	Double	Obverse	SEVERVS [...] AVG	Laureate head right	Septimius Severus	193	211	10
				Reverse	PM TR P [...] COS [...]	Victory advancing left, holding wreath and palm.	Uncertain	Unclear	Unclear	Unclear
45	Wakefield Museums	tn603	Double	Obverse	[...]ERT[...]	Laureate cuirassed bust right	Septimius Severus. Possibly Pertinax.	193	211	10
				Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
			Double	Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
				Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
46	Wakefield Museums	tn604	Double	Obverse	Illegible	Laureate bust right.	Septimius Severus	193	211	10
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
47	Wakefield Museums	tn627	Double	Obverse	[...]VS AVG	Laureate head right	Septimius Severus	193	211	10
				Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
48	York Museums Trust	YORYM : H2402.32.1	Double	Obverse	IMP CAE L SEP SEV PERT AV[G...]	Laureate bust right.	Septimius Severus	193	211	10
				Reverse	FECVND AVGVSTAE	Fecunditas standing left, raising hand and holding cornucopia; child to left	Julia Mamaea	221	235	11
49	Norwich Museums	1845.37.1	Double	Obverse	IMP C M AVR SEV ALEXAND AVG	Laureate draped bust right	Severus Alexander	222	235	11
				Reverse	COS II PP	Victory advancing left, holding wreath and palm.	Septimius Severus. Possibly Philip I.	193	211	10
50	Norwich Museums	1845.37.4	Double	Obverse	IMP CAE L SEP SEV []	Laureate head right	Septimius Severus	193	211	10
				Reverse	PM TR P VIII COS III PP	Mars standing right, holding spear and resting hand on shield.	Severus Alexander	222	235	11
51	Leeds Museums and Galleries	LEEDM.N.2014.0012.008	Single	Obverse or Reverse	[I]VLIA PIA FELIX AVG	Draped bust right.	Julia Domna	170	217	10
52	Leeds Museums and Galleries	LEEDM.N.2014.0012.028	Single	Obverse	Illegible	Bust right	Julia Domna	193	217	10
53	Wakefield Museums	1982.38.3c	Single	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
54	Wakefield Museums	ARC.1076	Single	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
55	Wakefield Museums	ARC.1081	Single	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10

56	York Museums Trust	YORYM : H2402.37	Double	Obverse	IV[LIA] AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	PIETAS AVGG	Pietas standing left, sacrificing over altar and holding incense box.	Julia Domna. Possibly Otacilia Severa.	193	217	10
57	Wakefield Museums	tn596.5	Double	Obverse	IMP C M AVR []	Laureate draped bust right	Caracalla. Possibly Elagabalus.	197	217	10
				Reverse	HILARITA[S]	Hilaritas standing left, holding palm and cornucopia; child to either side.	Julia Domna	193	217	10
58	York Museums Trust	YORYM : H2402.2.1	Double	Obverse	IMP ANTONINVS PIVS AVG	Laureate, ?draped and/or ?cuirassed bust right	Elagabalus	218	222	10
				Reverse	[VES]TA MATER	Vesta seated left	Julia Domna	193	217	10
59	York Museums Trust	YORYM : H2402.59	Double	Obverse	[I]MP ANTONI[NVS ...]	Draped bust right.	Elagabalus	218	222	10
				Reverse	[H]IL[A]RITAS	Hilaritas standing left, holding palm and cornucopia.	Julia Domna. Possibly Plautilla.	193	217	10
60	York Museums Trust	YORYM : H2402.5.1	Double	Obverse or Reverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	[...]ND [?FL...III]	Standing male figure	Uncertain	Unclear	Unclear	Unclear
61	York Museums Trust	YORYM : H2402.11	Double	Obverse	IVLIA [AVGVSTA]	Draped bust right.	Julia Domna	193	217	10
				Reverse	COS II[I PP]	Victory advancing left holding wreath and palm	Uncertain	Unclear	Unclear	Unclear
62	York Museums Trust	YORYM : H2402.39	Double	Obverse	[I]VLIA AVGVS[TA]	Draped bust right.	Julia Domna	193	217	10
				Reverse	PAX AVGVSTI	Pax standing left, holding branch and scepter.	Uncertain. Possibly Severus Alexander, Maximinus I, Gordian III, Philip I, Trajan Decius.	Unclear	Unclear	Unclear
63	York Museums Trust	YORYM : H2402.51	Double	Reverse	TR P [...] M COS II PP	Female figure seated left holding cornucopia.	Uncertain	Unclear	Unclear	Unclear
				Reverse	HIL[AR]ITAS	Hilaritas standing left, holding palm and cornucopia.	Julia Domna. Possibly Plautilla.	193	217	10
64	Wakefield Museums	tn605	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
65	Wakefield Museums	tn611	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
66	Wakefield Museums	tn621	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	PART MAX PM TR P VIII	Trophy; seated captive on either side	Uncertain. Possibly Septimius Severus, Caracalla.	Unclear	Unclear	Unclear
67	Wakefield Museums	tn622	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	PM TR P VI COS II PP	Female figure standing left holding patera over altar	Uncertain	Unclear	Unclear	Unclear
68	Wakefield Museums	tn624	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
69	Wakefield Museums	tn623	Double	Obverse	IVLIA AVGVSTA	Draped bust right.	Julia Domna	193	217	10
				Reverse	PM TR P III COS PP	Mars standing left, holding branch and spear	Severus Alexander	222	235	11
70	York Museums Trust	YORYM : H2402.21.1	Single	Obverse	ANTONINVS PIVS AVG BRIT	Leaureate head right	Caracalla	197	217	10
71	York Museums Trust	YORYM : H2402.36	Single	Reverse	PM TR P X [...] COS IIII PP	Mars standing, facing, holding branch and spear with shield.	Caracalla	197	217	10
72	York Museums Trust	YORYM : H2402.58	Single	Obverse	ANTONINVS PIVS AVG BRIT	Laureate head right	Caracalla	197	217	10
73	Leeds Museums and Galleries	LEEDM.N.2014.0012.005	Single	Reverse	MARTI PACATORI	Mars standing, facing, holding branch and spear with shield.	Caracalla	197	217	10
74	Leeds Museums and Galleries	LEEDM.N.2014.0012.007	Single	Reverse	PROVIDENTIAE DEORVM	Providentia standing left, holding wand over globe and holding scepter.	Caracalla	197	217	10
75	Leeds Museums and Galleries	LEEDM.N.2014.0012.014	Single	Obverse	[] AVG P TR P	Laureate draped bust right from behind	Caracalla	197	217	10
76	Leeds Museums and Galleries	LEEDM.N.2014.0012.017	Single	Obverse	M AVREL AN[]	Draped bust right.	Caracalla	197	217	10
77	Leeds Museums and Galleries	LEEDM.N.2014.0012.018	Single	Obverse	ANTONINV[S PL...] AVG BRIT	Laureate head right.	Caracalla	197	217	10
78	Leeds Museums and Galleries	LEEDM.N.2014.0012.020	Single	Reverse	[] III COS []	Lion advancing left, holding thunderbolt in mouth	Caracalla	197	217	10
79	Leeds Museums and Galleries	LEEDM.N.2014.0012.022	Single	Reverse	PM TR P XVIII COS IIII PP	Lion advancing left, holding thunderbolt in mouth	Caracalla	197	217	10
80	Leeds Museums and Galleries	LEEDM.N.2014.0012.024	Single	Reverse	[P]ONTIF TRP XIII CO[S III]	Probably Concordia seated left holding patera and double cornucopiae	Caracalla	197	217	10
81	Leeds Museums and Galleries	LEEDM.N.2015.0002.126	Single	Obverse	[] INVVS AVG	Bust right	Caracalla. Possibly Elagabalus.	197	217	10
82	Wakefield Museums	1982.38.3d	Single	Obverse	[] VR ANTON[I] NVS [...]	Draped bust right.	Caracalla. Possibly Elagabalus.	197	217	10
83	Wakefield Museums	tn606	Double	Obverse	ANTONINVS PIVS AVG GERM	Laureate head right	Caracalla	197	217	10
				Reverse	[PONT]IF MAX TR P COS PP	Felicitas standing left, holding caduceus and cornucopia	Macrinus	217	218	10
84	York Museums Trust	YORYM : H2402.18	Double	Obverse	ANTONINVS [PIVS AVG] GERM?	Laureate head right	Caracalla	197	217	10
				Reverse	TR P [...] COS II[...]	Probably Fortuna seated left, holding rudder on globe and cornucopia; wheel under chair	Uncertain. Possibly Septimius Severus, Elagabalus.	Unclear	Unclear	Unclear
85	York Museums Trust	YORYM : H2402.47	Double	Obverse	ANTONINVS PIVS AVG	Laureate head right	Caracalla	197	217	10
				Reverse	Illegible	Victory advancing left holding wreath and palm	Uncertain	Unclear	Unclear	Unclear
86	Hull Museums	Hull 3	Double	Obverse	IMP CAES M AVR ANTONINVS AVG	Diademed draped cuirassed bust right	Caracalla	197	217	10
				Reverse	[P]M TR P [...] COS [...]	Mars advancing right, holding spear and trophy.	Uncertain	Unclear	Unclear	Unclear
87	Hull Museums	Hull 5	Double	Reverse	PONTI[F] TR P XI [...]	Virtus standing right, stepping on helmet, holding spear and parazonium.	Caracalla	197	217	10
				Reverse	[P]RO[VIDENTIA A]VG	Providentia standing left, holding wand over globe and holding scepter.	Uncertain	Unclear	Unclear	Unclear

88	Wakefield Museums	tn596.7	Double	Obverse	ANTONINVS PIVS AVG	Laureate head right	Caracalla. Possibly Elagabalus.	197	217	10
				Reverse	Illegible	Victory advancing left, holding wreath	Uncertain	Unclear	Unclear	Unclear
89	Wakefield Museums	tn618	Double	Obverse	ANTONINVS PIVS AVG	Laureate head right	Caracalla	197	217	10
				Reverse	PROVIDEN[T]IAE DEORVM	Providentia standing left, holding wand over globe and scepter.	Uncertain. Possibly Antoninus Pius, Caracalla.	Unclear	Unclear	Unclear
90	Wakefield Museums	ARC.1075	Double	Obverse	MAVRANTO[...]	Draped bust right.	Caracalla	197	217	10
				Reverse	VENVS VICTRIX	Venus standing left, holding helmet and scepter; shield to left	Julia Mamaea	221	235	11
91	Wakefield Museums	tn615	Double	Obverse	IVLIA MAMAEA AVG	Laureate deaped bust right	Julia Mamaea	221	235	11
				Reverse	SEVERI AVG P II FIL	Sacrificial implements: simpulum, cruet, lituus, etc.	Caracalla	197	217	10
92	Wakefield Museums	tn625	Single	Obverse	[P SEPT GE]TA CAES PONT	Draped bust right.	Geta	198	212	10
93	Wakefield Museums	tn628	Single	Obverse	P SEPT GETA CAES PONT	Draped bust right.	Geta	198	212	10
94	Leeds Museums and Galleries	LEEDM.N.2014.0012.026	Single	Obverse	P SEPT GETA []	Draped bust right.	Geta	198	212	10
95	York Museums Trust	YORYM : H2402.69	Double	Obverse	M OPEL ANT DIADV MENIAN CAES	Bare head draped bust right.	Diadumenian	218	218	10
				Reverse	[CAST]OR	Castor standing left, holding horse by rein and spear.	Geta	198	212	10
96	York Museums Trust	YORYM : H2402.29	Double	Obverse	P SEPT GETA CAES PON[T]	Bare-headed, draped bust right	Geta	198	212	10
				Reverse	PM TR P COS PP	Possibly Concordia standing left, holding patera and cornucopia.	Uncertain	Unclear	Unclear	Unclear
97	York Museums Trust	YORYM : H2402.41	Double	Reverse	PONTIF COS	Minerva standing left, resting hand on shield and holding spear.	Geta	198	212	10
				Reverse	Illegible	Victory advancing left, holding opened wreath over shield	Uncertain	Unclear	Unclear	Unclear
98	Wakefield Museums	tn596.10	Double	Obverse	P SEPTIMIVS GETA [CAES]	Draped bust right.	Geta	198	212	10
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
99	York Museums Trust	YORYM : H2402.43	Double	Obverse	[] O []	Bare head, draped, right	Geta	198	212	10
				Reverse	PM TR P COS PP	Mars standing left, holding branch and spear	Severus Alexander	222	235	11
100	Leeds Museums and Galleries	LEEDM.N.2014.0012.012	Single	Obverse	IMP C OPEL SEV MACRINVS AVG	Laureate draped bust right	Macrinus	217	218	10
101	Hull Museums	Hull 2	Double	Obverse	IMP C M OPEL SEV MACRINVS AVG	Diademed draped cuirassed bust right	Macrinus	217	218	10
				Reverse	PM TR P VII [...]	Figure standing left holding ?spear with object at feet	Uncertain	Unclear	Unclear	Unclear
102	Wakefield Museums	ARC.1079	Double	Obverse	IMP C M OPEL SEV MACRINVS AVG	Laureate cuirassed bust right	Macrinus	217	218	10
				Reverse	RESTITVTOR VRBIS	Roma seated left on a shield, holding Palladium or Victory and scepter or spear	Uncertain. Possibly Septimius Severus, Caracalla, Geta.	Unclear	Unclear	Unclear
103	Wakefield Museums	tn601	Double	Obverse	IMP C M OPEL SEV MACRINVS AVG	Laureate cuirassed bust right	Macrinus	217	218	10
				Reverse	RESTITVTOR VRBIS	Roma seated left on a shield, holding Palladium or Victory and scepter or spear	Uncertain. Possibly Septimius Severus, Caracalla, Geta.	Unclear	Unclear	Unclear
104	Wakefield Museums	tn626	Double	Obverse	[IMP C] M OPEL SEV MACRINVS [AVG]	Laureate cuirassed bust right	Macrinus	217	218	10
				Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
105	Leeds Museums and Galleries	LEEDM.N.2014.0012.011	Single	Obverse	IMP ANTONINVS AVG	Laureate draped bust right	Elagabalus	218	222	10
106	Norwich Museums	1845.37.3	Single	Obverse	IMP AN[TO]NINVS AVG	Laureate draped bust right	Elagabalus	218	222	10
107	York Museums Trust	YORYM : H2402.24	Double	Obverse	IMP ANTONINVS AVG	Laureate draped bust right	Elagabalus	218	222	10
				Reverse	PONTIF TR P [...] II COS III	Probably Concordia seated left, holding patera and two cornucopiae	Uncertain	Unclear	Unclear	Unclear
108	York Museums Trust	YORYM : H2402.44.1	Double	Obverse	ANTONINVS PIVS AVG	Laureate head right	Elagabalus. Possibly Caracalla.	193	222	10
				Reverse	ANNONA AVG	Annona standing left holding grain ears over modius and cornucopia.	Uncertain	Unclear	Unclear	Unclear
109	York Museums Trust	YORYM : H2402.4.1	Single	Reverse	FECVND AVGVST[AE]	Fecunditas seated left, raising hand; child to left	Julia Mamaea. Possibly Severus Alexander.	221	235	11
110	Leeds Museums and Galleries	LEEDM.N.2014.0012.002	Single	Obverse	IVLIA MA[MMAEA] AVG	Draped bust right.	Julia Mamaea	221	235	11
				Obverse	[IVLI]A MAM[MAEA] AVG	Draped bust right.	Julia Mamaea	221	235	11
111	York Museums Trust	YORYM : H2402.26	Double	Reverse	SEVER[I] AVG P II FIL	Sacrificial implements: simpulum, cruet, lituus, etc. (variously arranged)	Uncertain. Possibly Septimius Severus, Caracalla.	Unclear	Unclear	Unclear
112	York Museums Trust	YORYM : H2402.38	Double	Obverse	IVLIA MA[MMAEA] AVG	Draped bust right.	Julia Mamaea	221	235	11
				Reverse	PM TR P [...]	Figure standing left.	Uncertain	Unclear	Unclear	Unclear
113	York Museums Trust	YORYM : H2402.48.1	Single	Obverse	IMP C MAVR SEV ALEXAND AVG	Laureate, draped bust right	Severus Alexander	222	235	11
114	Leeds Museums and Galleries	LEEDM.N.2014.0012.006	Single	Obverse	IMP C MAVR S[EV ALEXAN]D AVG	Laureate draped bust right	Severus Alexander	222	235	11
115	Leeds Museums and Galleries	LEEDM.N.2014.0012.009	Single	Obverse	IMP C MAVR SEV ALEXAND AVG	Laureate draped bust right	Severus Alexander	222	235	11
116	Leeds Museums and Galleries	LEEDM.N.2014.0012.010	Single	Obverse	IMP C MAVR S[EV ALEXAN]D AVG	Laureate cuirassed draped bust right.	Severus Alexander	222	235	11
117	Leeds Museums and Galleries	LEEDM.N.2014.0012.021	Single	Obverse	IMP C [MAVR]SEV ALEXAND AVG	Laureate draped bust right	Severus Alexander	222	235	11
118	Liverpool Museums	25.9.76.1.74 (possibly incorrect)	Single	Obverse	IMP C MAVR SEV ALEXAND AVG	Laureate head right	Severus Alexander	222	235	11
119	Wakefield Museums	tn616	Single	Reverse	PAX AETERNA AVG	Pax standing left, holding branch and scepter	Severus Alexander. Possibly Julia Mamaea.	222	235	11
120	York Museums Trust	YORYM : H2402.15	Double	Obverse	IMP C MAVR SEV ALEXAND AVG	Laureate, draped bust right	Severus Alexander	222	235	11
				Reverse	[F]ORTVNAE	Fortuna seated left, holding rudder on globe and cornucopia; wheel under chair	Uncertain. Possibly Septimius Severus, Elagabalus.	Unclear	Unclear	Unclear

121	York Museums Trust	YORYM : H2402.25.1	Double	Reverse	PM[...]	Standing figure	Uncertain	Unclear	Unclear	Unclear
				Obverse	IM[P...] ALEXAND AVG	Laureate draped bust right	Severus Alexander	222	235	11
122	York Museums Trust	YORYM : H2402.54	Double	Obverse	[] D AVG	Draped bust right.	Severus Alexander	222	235	11
				Reverse	PONTIF [...]	Figure standing right, holding spear.	Uncertain	Unclear	Unclear	Unclear
123	York Museums Trust	YORYM : H2402.56	Double	Obverse	IMP C M AV[]	Laureate draped bust right	Severus Alexander	222	235	11
				Reverse	[C]ERERI [FRVG...]	Ceres seated left, holding grain ears and torch	Uncertain	Unclear	Unclear	Unclear
124	Wakefield Museums	ARC.1080	Double	Obverse	IMP C M AVR SEV ALEXAND AVG	Laureate, draped bust right	Severus Alexander	222	235	11
				Reverse	[...]V[...]	Female figure standing left	Uncertain	Unclear	Unclear	Unclear
125	Wakefield Museums	P.1978.3.68b	Double	Obverse	IMP C M AVR [SEV] ALEX[...]	Laureate draped bust right	Severus Alexander	222	235	11
				Reverse	RESTITVTOR VRBIS	Roma seated left on a shield, holding Palladium or Victory and scepter or spear	Uncertain. Possibly Septimius Severus, Caracalla, Geta.	Unclear	Unclear	Unclear
126	Wakefield Museums	tn596.1	Double	Reverse	FELICITAS TEMPORVM	Felicitas standing left, holding caduceus and cornucopia.	Severus Alexander. Possibly Gordian III, Tranquillina.	222	235	11
				Reverse	PM [...]	Male figure standing left, holding branch and scepter.	Uncertain. Possibly Caracalla.	Unclear	Unclear	Unclear
127	Wakefield Museums	tn596.8	Double	Obverse	IMP ALEXAN[DER PIVS AVG]	Laureate draped cuirassed bust right	Severus Alexander	222	235	11
				Reverse	Illegible	Female figure seated left, holding Victory or Palladium and sceptre	Uncertain	Unclear	Unclear	Unclear
128	Wakefield Museums	tn596.14	Double	Obverse	[...]ALEXAND [AVG]	Laureate head right	Severus Alexander	222	235	11
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
129	Wakefield Museums	tn612	Double	Obverse	IMP SEV ALEXAN AVG	Laureate head right	Severus Alexander	222	235	11
				Reverse	[RE]STITVTOR VRBIS	Roma seated left on a shield, holding Palladium or Victory and scepter or spear	Uncertain. Possibly Septimius Severus, Caracalla, Geta.	Unclear	Unclear	Unclear
130	Wakefield Museums	P.1978.3.68a	Double	Obverse	IMP MAXIMINVS PIVS AVG	Laureate draped bust right	Maximinus	235	238	11
				Reverse	LIBERA[...] AVG	Liberalitas standing left, holding coin counter and cornucopia	Uncertain	Unclear	Unclear	Unclear
131	York Museums Trust	YORYM : H2402.6	Double	Reverse	PONT[...] TR P [...] COS	Figure standing right	Uncertain	Unclear	Unclear	Unclear
				Reverse	PM TR P VII IMP VIII COS [...]	Female figure standing left holding baton or wreath and cornucopia	Uncertain	Unclear	Unclear	Unclear
132	York Museums Trust	YORYM : H2402.12	Double	Reverse	[...]P II[...]	Figure standing left	Uncertain	Unclear	Unclear	Unclear
				Reverse	PM TR P V [...]S[...]	Victory advancing left, holding opened wreath over shield	Uncertain. Possibly Septimius Severus, Caracalla, Geta.	Unclear	Unclear	Unclear
133	York Museums Trust	YORYM : H2402.30	Double	Obverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
				Reverse	[...]O[...]	Figure standing left holding (?)	Uncertain	Unclear	Unclear	Unclear
134	York Museums Trust	YORYM : H2402.31	Double	Obverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
135	York Museums Trust	YORYM : H2402.55	Double	Reverse	Illegible	Figure standing left	Uncertain	Unclear	Unclear	Unclear
				Reverse	[P]ROV[IDEN]TI[A] [...]	Providentia standing left, holding wand over globe and scepter.	Uncertain	Unclear	Unclear	Unclear
136	York Museums Trust	YORYM : H2402.60	Single	Reverse	PONT[...]	Figure standing left	Uncertain	Unclear	Unclear	Unclear
137	Leeds Museums and Galleries	LEEDM.N.2014.0012.013	Single	Reverse	CERER[I...RV...]	Ceres seated left, holding grain ears and torch.	Uncertain	Unclear	Unclear	Unclear
138	Leeds Museums and Galleries	LEEDM.N.2014.0012.015	Single	Reverse	ANNO[NA] AVG	Annona standing left, holding grain ears (possibly over modius)	Uncertain	Unclear	Unclear	Unclear
139	Leeds Museums and Galleries	LEEDM.N.2014.0012.019	Single	Reverse	[] D[]	Victory advancing left, holding wreath	Uncertain	Unclear	Unclear	Unclear
140	Leeds Museums and Galleries	LEEDM.N.2014.0012.023	Single	Reverse	PM TR P I[]	Female figure standing left	Uncertain	Unclear	Unclear	Unclear
141	Leeds Museums and Galleries	LEEDM.N.2014.0012.025	Single	Reverse	[I]VNO []	Juno standing left, holding patera and scepter; peacock to left	Uncertain	Unclear	Unclear	Unclear
142	Leeds Museums and Galleries	LEEDM.N.2014.0012.027	Single	Obverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
143	Leeds Museums and Galleries	LEEDM.N.2014.0012.029	Single	Reverse	PONTIF TRP [...XI...] COS	Funnel with one mould impression.Male figure standing left.	Uncertain	Unclear	Unclear	Unclear
144	Leeds Museums and Galleries	LEEDM.N.2015.0002.119	Single	Reverse	IOV[]	Jupiter standing left, holding thunderbolt and scepter; eagle to left.	Uncertain. Possibly Commodus, Antoninus Pius, Septimius Severus, Gordian III.	Unclear	Unclear	Unclear
145	Leeds Museums and Galleries	LEEDM.N.2015.0002.120	Single	Reverse	Illegible	Possibly Annona standing left, holding grain ears over modius and	Uncertain	Unclear	Unclear	Unclear
146	Leeds Museums and Galleries	LEEDM.N.2015.0002.121	Single	Reverse	[] POT XX[] IIII	Female figure standing facing	Uncertain. Possibly Antoninus Pius, Marcus Aurelius.	Unclear	Unclear	Unclear
147	Leeds Museums and Galleries	LEEDM.N.2015.0002.122	Single	Reverse	[VE]S[TA]	Vesta standing left, holding Palladium and scepter	Uncertain. Possibly Faustina I,	Unclear	Unclear	Unclear
148	Leeds Museums and Galleries	LEEDM.N.2015.0002.123	Single	Reverse	Illegible	Figure standing	Uncertain	Unclear	Unclear	Unclear
149	Leeds Museums and Galleries	LEEDM.N.2015.0002.124	Single	Reverse	[] OS III[]	Unclear	Uncertain	Unclear	Unclear	Unclear
150	Leeds Museums and Galleries	LEEDM.N.2015.0002.125	Single	Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear

151	Liverpool Museums	Unknown (possibly the underside of 25.9.76.1.74)	Single	Reverse	[...AE...SA...]	Female figure seated left holding cornucopia in left hand.	Uncertain	Unclear	Unclear	Unclear
152	Liverpool Museums	25.9.76.1.71 (possibly incorrect)	Single	Reverse	Illegible	Figure standing left	Uncertain	Unclear	Unclear	Unclear
153	Wakefield Museums	ARC.946.3n	Double	Reverse	ANNONA AVG	Annona standing left, holding grain ears over modius and anchor	Uncertain. Possibly Antoninus Pius, Severus Alexander .	Unclear	Unclear	Unclear
				Reverse	Illegible	Male figure advancing right	Uncertain	Unclear	Unclear	Unclear
154	Wakefield Museums	ARC.1077	Single	Reverse	ANNONA AVG	Annona standing left, holding grain ears over modius and anchor	Uncertain. Possibly Antoninus Pius, Severus Alexander .	Unclear	Unclear	Unclear
155	Wakefield Museums	tn596.2	Double	Obverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
156	Wakefield Museums	tn596.3	Single	Reverse	Illegible	Probably Concordia seated left, holding patera and cornucopia.	Uncertain	Unclear	Unclear	Unclear
157	Wakefield Museums	tn596.4	Single	Reverse	Illegible	Standing figure	Uncertain	Unclear	Unclear	Unclear
158	Wakefield Museums	tn596.9	Double	Obverse	Illegible	Unclear	Unclear	Unclear	Unclear	Unclear
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
159	Wakefield Museums	tn596.12	Double	Obverse	[...]TONINVS[...]	Head right	Unclear. Possibly Antoninus Pius, Commodus, Marcus Aurelius, Caracalla, Elagabalus.	Unclear	Unclear	Unclear
				Reverse	Illegible	Female figure standing left	Uncertain	Unclear	Unclear	Unclear
160	Wakefield Museums	tn596.13	Single	Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
161	Wakefield Museums	tn597	Single	Reverse	PIETAS AVG	Pietas standing left, raising hands over altar	Uncertain	Unclear	Unclear	Unclear
162	Wakefield Museums	tn600	Double	Obverse	[...]M[...]	Laureate head right	Unclear	Unclear	Unclear	Unclear
				Reverse	[...]COS[...]	Figure standing left holding spear or sceptre	Uncertain	Unclear	Unclear	Unclear
163	Wakefield Museums	tn610	Double	Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
				Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
164	Wakefield Museums	tn613	Double	Obverse	Illegible	Bust right	Unclear. Possibly Severus	Unclear	Unclear	Unclear
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
165	Wakefield Museums	tn619	Single	Reverse	[...] PVBLICA	Female figure standing left holding grains or cornucopia	Uncertain	Unclear	Unclear	Unclear

A small number of moulds originally believed to have originated from Lingwell Gate were identified over the course of this project and were eliminated from the dataset because their fabric or identification is inconsistent with the Lingwell Gate assemblage. These are listed below.

It should be noted that coin mould 166 (Museum of Liverpool, M12752), copying a radiate of Gordian III, was eliminated from the dataset due to its late date and inconsistent fabric and coin mould 171 (Wakefield Museums, P.1978.3.68c) was eliminated from the dataset because the impression was small in diameter and copied a radiate bust. Given that the latest identified impression dates to AD 235-238, on the cusp of the end of the *denarius* and beginning of the radiate period, there may be some merit in reassessing these moulds to more conclusively include or eliminate them as Lingwell Gate finds.

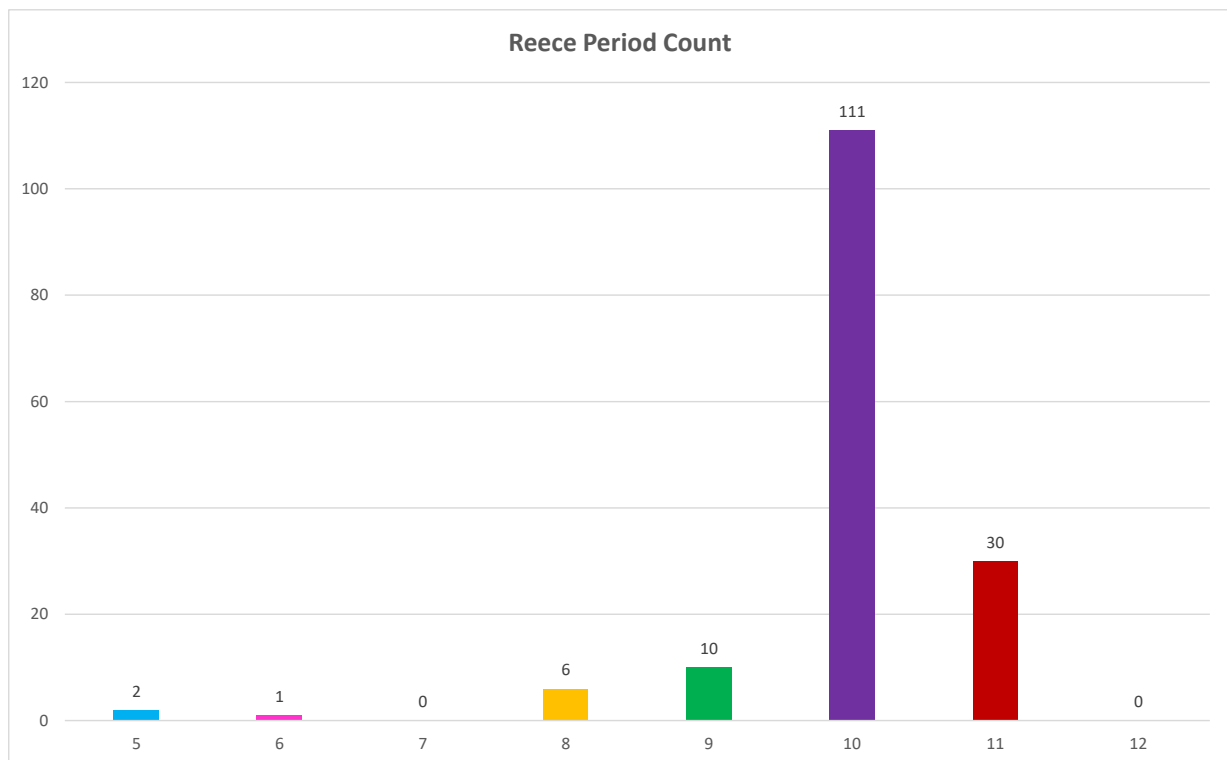
Running Number	Collection	Accession Number	Single or Double Sided?	Obverse or Reverse?	Inscription	Description	Emperor(s) or Empress	Date (early)	Date (late)	Reece Period(s)
166	Liverpool Museums	M12752 (possibly incorrect)	Double	Obverse	IMP CAES M ANT GORD[...]	Radiate bust right	Gordian III	238	244	12
				Reverse	?[...V...CVIII...SEO]	Figure standing left holding branch in right hand.	Uncertain	Unclear	Unclear	Unclear
167	Wakefield Museums	tn596.15	Double	Obverse	[]C VICTORINVS [...]	Radiate cuirassed bust right	Victorinus	268	271	13
				Reverse	Illegible	Standing figure	Uncertain	Unclear	Unclear	Unclear
168	York Museums Trust	YORYM : H2402.14.1	Single	Reverse	[IOVI C]ONSERVATORI AVGG	Jupiter standing with Victory on globe, eagle with wreath at feet, K to left, wreath over X B to right	Probably Licinius, probably Egyptian	308	324	16
169	York Museums Trust	YORYM : H2402.61	Single	Obverse	IMP C VAL LICIN LICINIVS [P] F AVG	Laureate head right	Licinius	308	324	16
170	York Museums Trust	YORYM : H2402.62	Single	Reverse	IOVI CONSERVATORI	Jupiter standing left, holding Victory on globe, leaning on sceptre, eagle to left; N-Γ/ ALE	Uncertain	Unclear	Unclear	Unclear
171	Wakefield Museums	P.1978.3.68c	Double	Obverse	Illegible	Radiate bust right	Uncertain	Unclear	Unclear	Unclear
				Reverse	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
172	Wakefield Museums	tn620a	Single	Obverse	Illegible	Bust right	Unclear	Unclear	Unclear	Unclear
173	Wakefield Museums	tn620b	Single	Uncertain	Illegible	Unclear	Uncertain	Unclear	Unclear	Unclear
174	Wakefield Museums	tn620c	Single	Reverse	Illegible	Figure standing right	Uncertain	Unclear	Unclear	Unclear
175	Wakefield Museums	tn620d	Single	Reverse	[...]NS[...]	Standing figure	Uncertain	Unclear	Unclear	Unclear

8.2 Data

Lingwell Gate Issuers

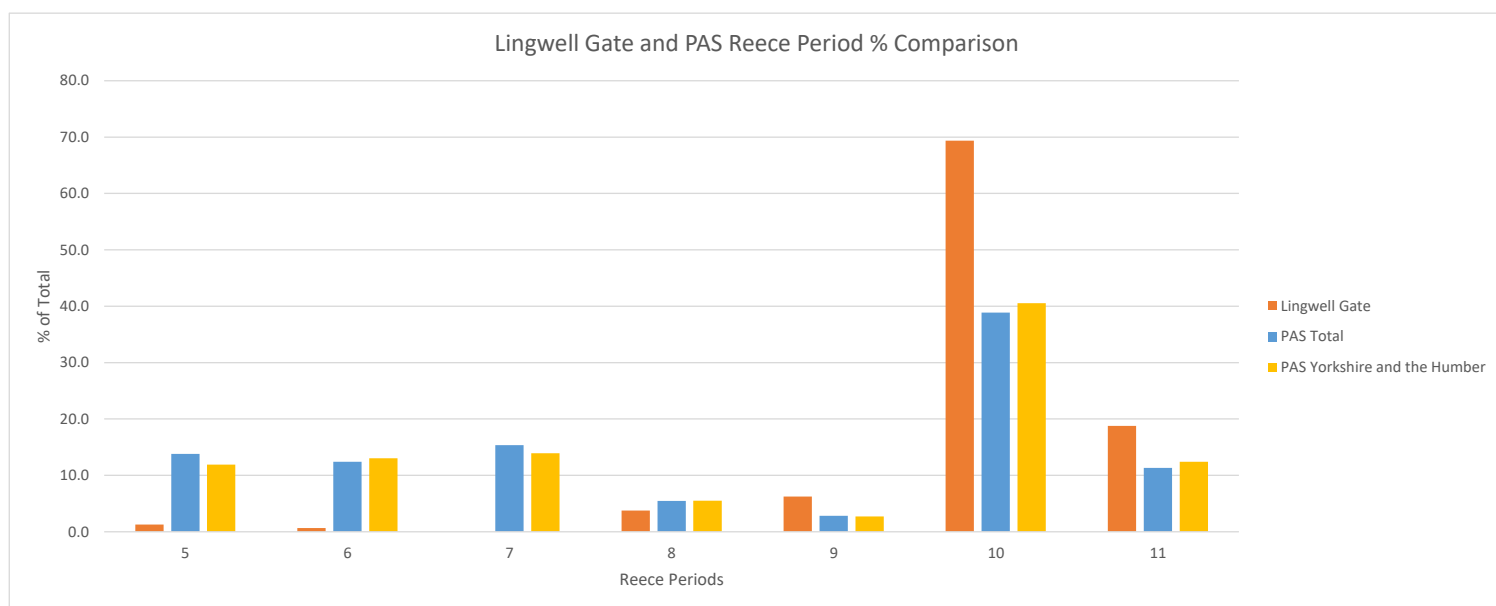
Reece	Emperor or Empress	Start Date	End Date	Count
5	Nerva	96	98	0
	Trajan	98	117	2
	Ulpia Marciana	112	113	0
	Salonina Matidia	112	120	0
	Pompeia Plotina	112	117	0
6	Hadrian	117	138	1
	Vibia Sabina	128	137	0
	Lucius Aelius	136	138	0
7	Antoninus Pius	138	161	0
	Faustina I	138	161	0
8	Faustina II	147	175	1
	Lucius Verus	161	169	1
	Marcus Aurelius	161	180	3
	Lucilla	164	169	1
9	Commodus	175	192	10
	Bruttia Crispina	178	187	0
10	Pertinax	193	193	0
	Didius Julianus	193	193	0
	Clodius Albinus	193	197	1
	Didia Clara	193	193	0
	Manlia Scantilla	193	193	0
	Pescennius Niger	193	194	0
	Septimius Severus	193	211	36
	Julia Domna	193	217	23
	Caracalla	198	217	26
	Fulvia Plautilla	202	205	0
	Geta	209	212	9
	Macrinus	217	218	7
	Diadumenian	217	218	1
	Elagabalus	218	222	8
	Julia Soaemias	218	222	0
	Julia Maesa	218	222	0
	Julia Paula	219	220	0
	Julia Aquilia Severa	220	220	0
	Annia Faustina	220	221	0
11	Julia Mamaea	221	235	7
	Severus Alexander	222	235	22
	Sallustia Orbiana	225	227	0
	Maximinus	235	238	1
	Unclear	Obverse.		10
	Uncertain	Reverse or unrecognisable.		101
			TOTAL:	271

Lingwell Gate Reece Periods



Reece Period			Reece Period Count
5	AD 96-117	Trajanic	2
6	AD 117-138	Hadrianic	1
7	AD 138-161	Antonine I	0
8	AD 161-180	Antonine II	6
9	AD 180-193	Antonine III	10
10	AD 193-222	Severus to Elagabalus	111
11	AD 222-238	Later Severan	30
12	AD 238-260	Gordian III to Valerian	0

Lingwell Gate Reece Periods with Comparative PAS Data

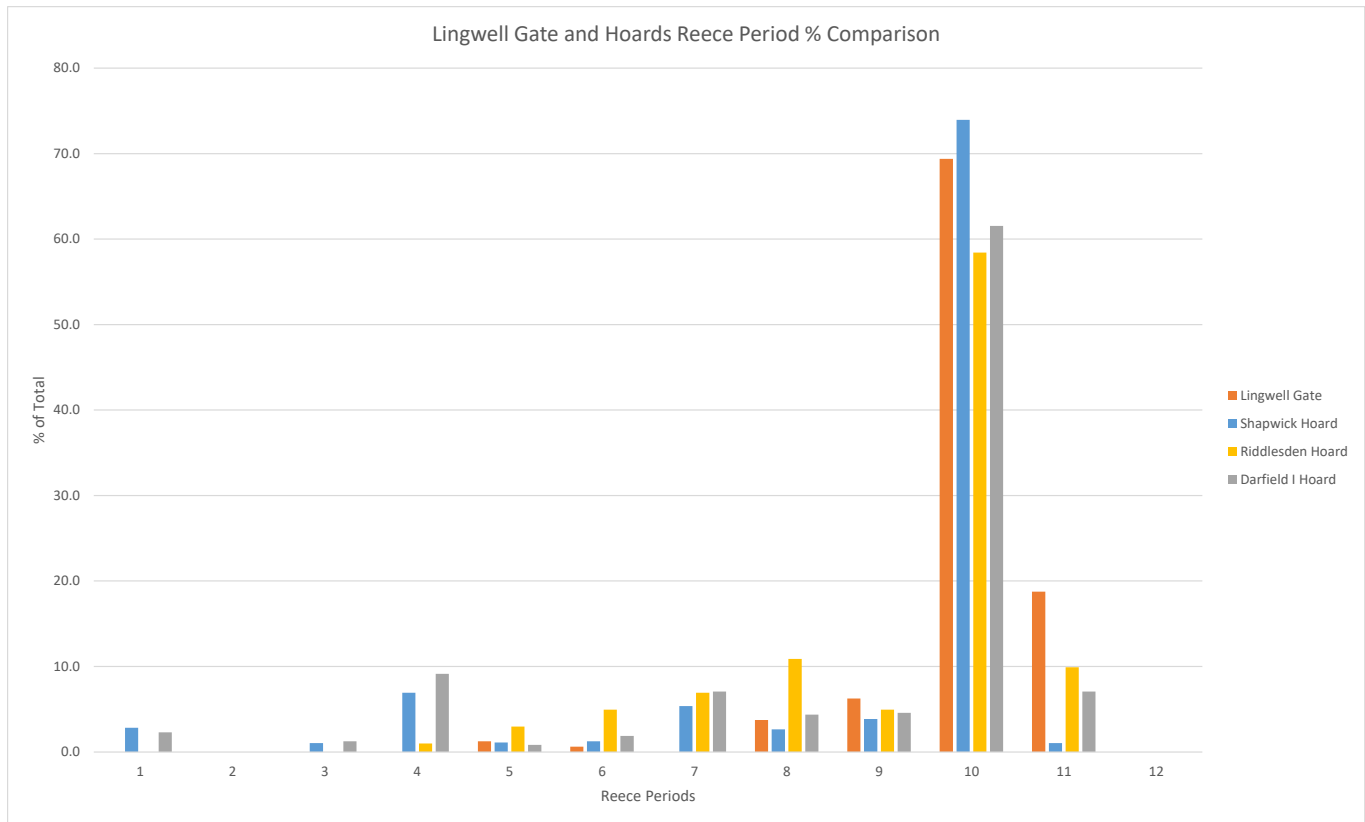


Lingwell Gate (as of 16/06/2020)				
Reece Period			Reece Period Count	% of Total
5	AD 96-117	Trajanic	2	1.3
6	AD 117-138	Hadrianic	1	0.6
7	AD 138-161	Antonine I	0	0.0
8	AD 161-180	Antonine II	6	3.8
9	AD 180-193	Antonine III	10	6.3
10	AD 193-222	Severus to Elagabalus	111	69.4
11	AD 222-238	Later Severan	30	18.8
Uncertain	N/A	111 DISCOUNTED	N/A	N/A
TOTAL			160	100.0

PAS Total Reece Periods 12/11/2020				
Reece Period			Reece Period Count	% of Total
5	AD 96-117	Trajanic	1,575	13.8
6	AD 117-138	Hadrianic	1,412	12.4
7	AD 138-161	Antonine I	1,748	15.3
8	AD 161-180	Antonine II	622	5.5
9	AD 180-193	Antonine III	319	2.8
10	AD 193-222	Severus to Elagabalus	4,431	38.9
11	AD 222-238	Later Severan	1,292	11.3
TOTAL			11399	100.0

PAS Yorkshire and the Humber Reece Periods 12/11/2020				
Reece Period			Reece Period Count	% of Total
5	AD 96-117	Trajanic	171	11.9
6	AD 117-138	Hadrianic	187	13.0
7	AD 138-161	Antonine I	200	13.9
8	AD 161-180	Antonine II	79	5.5
9	AD 180-193	Antonine III	39	2.7
10	AD 193-222	Severus to Elagabalus	582	40.5
11	AD 222-238	Later Severan	178	12.4
TOTAL			1436	100.0

Lingwell Gate Reece Periods with Comparative Hoard Data



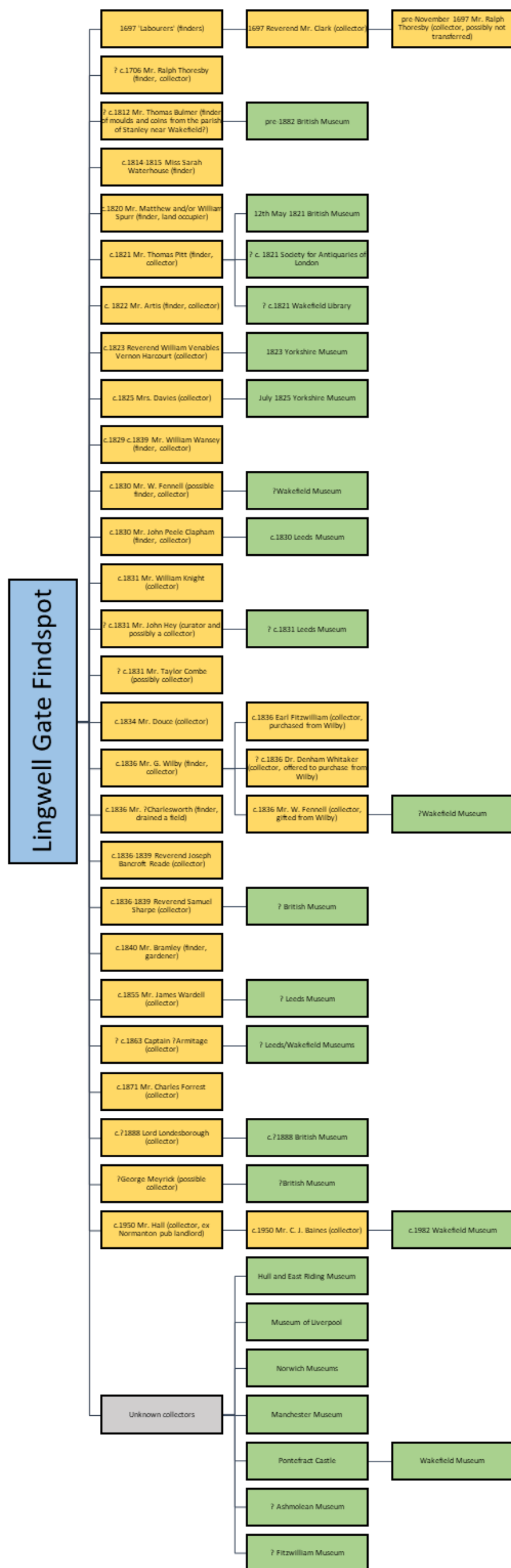
Lingwell Gate (as of 16/06/2020)				
Reece Period			Reece Period Count	% of Total
1	pre-AD 41	Pre-Claudian & Iron Age	0	0.0
2	AD 41-54	Claudian	0	0.0
3	AD 54-68	Neronian & Civil War	0	0.0
4	AD 69-96	Flavian	0	0.0
5	AD 96-117	Trajanic	2	1.3
6	AD 117-138	Hadrianic	1	0.6
7	AD 138-161	Antonine I	0	0.0
8	AD 161-180	Antonine II	6	3.8
9	AD 180-193	Antonine III	10	6.3
10	AD 193-222	Severus to Elagabalus	111	69.4
11	AD 222-238	Later Severan	30	18.8
12	AD 238-260	Gordian III to Valerian	0	0.0
Uncertain	N/A	111 DISCOUNTED	N/A	N/A
TOTAL			160	100.0

Shapwick (latest coin AD 224)				
Reece Period			Reece Period Count	% of Total
1	pre-AD 41	Pre-Claudian & Iron Age	260	2.8
2	AD 41-54	Claudian	0	0.0
3	AD 54-68	Neronian & Civil War	95	1.0
4	AD 69-96	Flavian	638	6.9
5	AD 96-117	Trajanic	103	1.1
6	AD 117-138	Hadrianic	116	1.3
7	AD 138-161	Antonine I	494	5.4
8	AD 161-180	Antonine II	243	2.6
9	AD 180-193	Antonine III	355	3.9
10	AD 193-222	Severus to Elagabalus	6813	73.9
11	AD 222-238	Later Severan	96	1.0
12	AD 238-260	Gordian III to Valerian	0	0.0
Irregular	N/A	25 DISCOUNTED	N/A	N/A
TOTAL			9213	100.0

Riddlesden (latest coin AD 235-236)				
Reece Period			Reece Period Count	% of Total
1	pre-AD 41	Pre-Claudian & Iron Age	0	0.0
2	AD 41-54	Claudian	0	0.0
3	AD 54-68	Neronian & Civil War	0	0.0
4	AD 69-96	Flavian	1	1.0
5	AD 96-117	Trajanic	3	3.0
6	AD 117-138	Hadrianic	5	5.0
7	AD 138-161	Antonine I	7	6.9
8	AD 161-180	Antonine II	11	10.9
9	AD 180-193	Antonine III	5	5.0
10	AD 193-222	Severus to Elagabalus	59	58.4
11	AD 222-238	Later Severan	10	9.9
12	AD 238-260	Gordian III to Valerian	0	0.0
Uncertain	N/A	N/A	0	0.0
TOTAL			101	100.0

Darfield I (latest coin AD 235-238)				
Reece Period			Reece Period Count	% of Total
1	pre-AD 41	Pre-Claudian & Iron Age	11	2.3
2	AD 41-54	Claudian	0	0.0
3	AD 54-68	Neronian & Civil War	6	1.2
4	AD 69-96	Flavian	44	9.1
5	AD 96-117	Trajanic	4	0.8
6	AD 117-138	Hadrianic	9	1.9
7	AD 138-161	Antonine I	34	7.1
8	AD 161-180	Antonine II	21	4.4
9	AD 180-193	Antonine III	22	4.6
10	AD 193-222	Severus to Elagabalus	296	61.5
11	AD 222-238	Later Severan	34	7.1
12	AD 238-260	Gordian III to Valerian	0	0.0
Uncertain	N/A	N/A	0	0.0
TOTAL			481	100.0

8.3 ProvenanceMap



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