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Elkington & C^o. and the Art of Electro-Metallurgy, *circa* 1840-1900.

Alistair Grant.

A Thesis Submitted to the University of Sussex for
Examination for the Degree of Doctor of Philosophy.

September 2014.

I hereby declare that this thesis is solely my own work, and has not been, and will not be submitted in whole, or in part, to another University for the award of any other degree.

Signature:.....

This PhD thesis is dedicated to my wife Lucy and my daughter Agnes.

I would like to thank my wife, Dr. Lucy Grant, without whose love, encouragement, and financial support my doctoral studies could not have happened. Her fortitude, especially during the difficult early months of 2013 when our daughter Agnes was ill, anchored our family and home, and enabled me to continue my research and complete this PhD thesis.

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UNIVERSITY OF SUSSEX.

Alistair Grant.

Doctor of Philosophy.

SUMMARY.

Elkington & C^o. and the Art of Electro-Metallurgy, *circa* 1840-1900.

This is the first major art historical study of Elkington & C^o., the British art-metalwork company that from c.1840 invented and patented methods of electro-depositing gold and silver, which they developed artistically and commercially into the modern industrial art of electro-metallurgy. It analyses how Elkington's syntheses of science and art into industrial manufacturing processes revolutionized the design and production, replication and reproduction of precious metalwork, metal sculpture, and ornamental art-metalwork, and why the art of electro-metallurgy, the world's first electrical art, exemplifies the social, and cultural change of the mid-Victorian era.

This PhD thesis studies Elkington's technical development from c.1840-1900, analyzing how they developed new methods of gilding and plating, and important collateral technologies. It identifies key people in the company, and analyses the chronology of scientific discoveries that shaped the industrial processes and artistic practices at their manufactories in Birmingham. It then analyses the development of the company's creative strategy, and identifies key people whose artistic contributions collectively shaped the evolution of the art of electro-metallurgy. It provides the first study of Elkington as non-precious metals manufacturers, identifying and analyzing the key artworks that they produced in copper and copper alloys as 'bronzists,' and examines how Elkington applied the art of electro-metallurgy to the manufacture of monumental statues. By critically analyzing key sculptures it demonstrates how Elkington became the preeminent British bronze foundry of the mid-Victorian era.

It concludes with a study of Elkington & C^o's œuvre from 1851-1878, and analyzes how their art of electro-metallurgy was influenced by the technical and stylistic eclecticism of *l'orfèvrerie française* of the French 2nd Empire. It describes how, from 1853-1899, Elkington employed three Frenchmen as their chief artists: Pierre-Emile Jeannest, Auguste Willms, and Léonard Morel-Ladeuil, who further elevated the company's artistic reputation. It concludes with a detailed analysis of Elkington's masterpiece, *The Milton Shield* (1867) and analyses how its publication as electrotype reproductions in America exemplified the art of electro-metallurgy.

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PREFACE

1. Introduction.

This is the first major art historical study of Elkington & C^o., the British art-metalwork company that from c.1840 invented and patented methods of electro-depositing gold and silver, which, during the early-Victorian era, they developed commercially and artistically into the new industrial art of electro-metallurgy. It demonstrates how Elkington's syntheses of science and art into industrial manufacturing processes revolutionized the design and production, replication and reproduction of precious metalwork, metal sculpture, and ornamental art-metalwork, and explains why the art of electro-metallurgy, the world's first electrical art form, exemplifies the social, cultural, and industrial change of the early-Victorian era.

Chapter I examines the establishment of Elkington & C^o. and analyses how a small team of talented artisans and scientists developed new methods of gilding and plating, and important collateral technologies, which, between c.1836-1851, transformed the Birmingham gilt-toymaking trade of the late-Georgian period into the modern Victorian industrial art of electro-metallurgy. It introduces the key people in the company, notably G.R. [George Richards] Elkington and Josiah Mason, and analyses the chronology of technical discoveries made under their leadership, which shaped the development of new artistic metalwork practices and industrial manufacturing processes at their Newhall Street and Brearley Street manufactories in Birmingham.

Chapter II analyses the development of the firm's creative strategy and resources, and identifies the key people whose contributions collectively shaped the development of the art of electro-metallurgy, notably Henry Elkington, and his nephew Frederick Elkington, who successively conceived and implemented Elkington's creative strategy. The chapter traces the early development of Elkington's creative reputation before the Great Exhibition of 1851, and provides the first critical study of Elkington's artists of the

1840s; Benjamin Smith III, Benjamin Schlick, Emil Braun, George Clark Stanton, and Charles Grant. It explores the dual strands of classicism and naturalism practiced by these artists, which it places in the European-wide trend for late-neoclassicism and ‘modern French’ style of the Rococo Revival. It also introduces the two key genre-characteristics of the art of electro-metallurgy, which I have defined and termed as ‘Compositional Historicism’ and ‘Narrative Plate’. It explains how these two key genre-characteristics emerged from a general European pattern of historical revivalism in the styles, materials and techniques of art and ornamental design.

Chapter III is the first study to examine Elkington & C^o., not simply as silversmiths, but also as non-precious metals manufacturers. It identifies and describes the artworks they produced in copper and copper-alloys under the self-designation ‘bronzists,’ and examines how Elkington & C^o. applied the art of electro-metallurgy to the manufacture of monumental sculpture. The chapter identifies and critically analyses Elkington’s major sculptures, including: *The Death of Tewdric Manr* at the Great Exhibition of 1851; the *Magna Carta barons and prelates* for the Lords’ Chamber of the Palace of Westminster, installed in phases during the 1850s; William Theed’s *Scenes from Tudor History* for the Prince’s Chamber at the Palace of Westminster, and *Statues and Busts of British and Allied Commanders of the Napoleonic Wars* at Wellington College, and Joseph Durham’s *Memorial to the Great Exhibition of 1851*. My critical study of these artworks shows how Elkington & C^o. became the preeminent British bronze foundry of the mid-Victorian period.

Chapter IV explores the development of Elkington’s ornamental precious metalwork and enamelwork after 1851, and shows how, after the Great Exhibition, Elkington & C^o. predominantly took its aesthetic inspiration from *l’orfèvrerie française* of the French 2nd Empire. Under the leadership of Frederick Elkington, the company became increasingly influenced by the technical and stylistic eclecticism of French Romantic

Historicism as applied to art-metalwork. The chapter studies how from 1853-1899, Elkington & C^o. employed three French artists: Pierre-Emile Jeannest (1813-1857), Auguste Willms (1827-1899), and Léonard Morel-Ladeuil (1820-1888), who transformed the company's artistic reputation. The chapter examines the early careers and influences of Elkington's French artists, and identifies and critically analyses their key artworks, subjects and source materials, before assessing their respective contributions to Elkington's œuvre. I believe that the lack of literature on these three French artists working in Britain is a glaring omission from 19th-century art history.

Chapter IV also provides the first critical study of Elkington's *champlevé* and *cloisonné* enamels, which has never been studied before. It concludes with a detailed analysis of *The Milton Shield*, the *repoussé* masterpiece by Léonard Morel-Ladeuil, which was shown at the Paris Exposition Universelle in 1867, and then purchased by the South Kensington Museum (V&A) in 1868. It studies why, almost a decade later, following the Philadelphia Centennial of 1876, electrotypes of *The Milton Shield* became so popular in postbellum America, making it a truly global phenomenon, and one of the greatest artworks of the 19th-century. My thesis concludes by summarizing how *The Milton Shield* and its electrotypes exemplify the art of electro-metallurgy, representing both the apogee of the genre, but also signaling the beginning of Elkington & C^o.’s long decline.

2. Literature Review.

There has never been a major publication about Elkington & C^o. In 1971, Shirley Bury provided an informative chronicle of the company's 'Beginnings,' 'Struggle and Success,' and 'Consolidation and Decline,' in her slim 'Collectors' Guide' on *Victorian Electroplate*, but it has long been out of print.¹ In her 'Acknowledgements' she confirmed that her research was based extensively on the Elkington & C^o. records deposited with the V&A's Metalwork Dept., where she was Assistant Keeper, in 1968. In 1913-1914, at the request of the company's directors, Herbert Frederick Elkington, Gerald Bartlett Elkington, and Hyla Garrett Elkington, a selection of the company's historic papers were compiled in bound volumes and collectively titled *History of Elkington*, by R.E. [Robert Eadon] Leader. He arranged the papers chronologically in thematic groupings of administrative papers, correspondence, patents, deeds, ledgers, press cuttings, drawings and photographs, pattern books, etc. Leader effectively ordered them in a manner that 'officially' chronicled the company's historical development from c.1836-1914. In 1979, the papers were transferred within the V&A from the Metalwork Dept. to the Archive of Art and Design (AAD).² Since then there have been three subsequent accruals to the records.³

Bury's book was further honed in the libraries and archives of the Goldsmiths' Company in London, the Sheffield Assay Office, and the company records of James Dixon & Sons and W.G. Sissons of Sheffield. Accordingly, her story steadfastly followed (the aptly named) Leader's account of Elkington & C^o.s early struggle to establish and consolidate their patent rights against the defensive antagonism of the fused-plate trade in Sheffield, but, like Leader, she did not study the company records, or research laterally, to

¹ Bury, 1971.

² Elkington and Company Records, AAD/1979/3, Victoria and Albert Museum, Archive of Art and Design.

³ AAD/1998/6, AAD/2003/4, and AAD/2014/7.

explain how Elkington & C^o. acquired and developed all of the scientific, artistic, and industrial elements that gave rise to the art of electro-metallurgy.

Where Bury's study was at its most original was in her discursive curatorial views and astute object analyses, which reveal how Elkington applied elements of the art of electro-metallurgy to meet the Victorian market-demand for organic naturalism and historicism, citing the "strong bias towards **classically derived design**" (she bolds it for emphasis)⁴ that emerged from their early use, in the mid-1840s, of electrotyping to manufacture classically-derived articles using casts supplied by Benjamin Schlick and Dr. Emil Braun. However, she considered Elkington's designs exclusively in the context of the early designs and patterns supplied via the partnership with Benjamin Smith III, and never attempted to see them in the far broader European context of late-neoclassicism and the French Rococo revival. This led her to cast Elkington & C^o. and the art of electro-metallurgy solely within the long shadow of Rundell, Bridge, & Rundell and their illustrious successors in the silver, gold, and fused-plate trades, which was an explicitly British tradition that she had written about so eloquently in her finest essays.⁵

Like Bury, John Culme, in his survey of *Nineteenth-Century Silver*, which dealt extensively with Elkington & C^o., also attempted to shoehorn them uncomfortably into the styles, trade and retail practices of "The London makers, by whom traditionally the best items were made," thereby casting them in the shadow of "the best-known and certainly most influential firm of manufacturing retail jewelers and silversmiths, Rundell, Bridge & Rundell."⁶ In surveying the long 19th-century, Culme astutely began with Boulsover's discovery of fused-plate in 1743, and the development of rolling mills and die-stamps as the mechanized tools of mass-production and early industrialization. Where Culme's study was outstanding was in the wealth of original material he collated from

⁴ Bury, 1971, p.48.

⁵ Bury, 1966, pp.79–85, pp.152–8, pp.218–22.

⁶ Culme, 1977, p.57.

reform-minded trade and government reports on industry, which provided fascinating historical glimpses into Elkington's working environment and practices. However, whilst Culme included an account of Jean-Valentin Morel's sojourn in London,⁷ and quick critical sketches of Elkington's Frenchmen, Pierre-Emile Jeannest,⁸ Léonard Morel-Ladeuil,⁹ and Auguste Willms,¹⁰ including Willms's addition of enamelling to Elkington's technical and artistic repertoire,¹¹ he did not explore the impact that this inside-influence of *l'orfèvrerie française* had on the silver trade in Britain. Compared to the broader French concept of *l'orfèvrerie*, the English terms 'goldsmiths' and 'silver trade,' which set the research framework for Leader, Bury, and Culme's studies, was always in-and-for-itself a far too self-limiting term to provide adequate historiographical and methodological parameters for what happened to art-metalwork during the Industrial Revolution in early-Victorian Britain. This is why Elkington & C^o. and the art of electro-metallurgy have been inadequately researched and undocumented until now.

In chronicling the Elkington story, neither Bury nor Culme looked back at the Georgian gilt-toymaking trade of Birmingham from which G.R. Elkington emerged. I believe that the historiography of 18th- and 19th-century art-metalwork, especially precious metalwork, needs to be radically rewritten in terms of the social relations specific to particular modes of production to show how the development of mercury-gilding, fused-plate, close-plating, and electro-metallurgy established an industrialized mass-market for imitation luxury and high-technology products in late-18th and 19th-century Britain. The cultural and social implications of this paradigm shift, not only in Britain, but also across the world, were profound and lasting. My thesis will show that in the process of making aristocratic tastes more affordable to the middle-classes, Elkington & C^o. also made

⁷ Culme, 1977, p.201-203.

⁸ Culme, 1977, pp.118-120

⁹ Culme, 1977, p.204

¹⁰ Culme, pp.205-206

¹¹ *Ibid.*

imitative technology respectable to the aristocracy, and by blurring the boundaries between what was deemed original and unique and valuable and real, and what was not, the art of electro-metallurgy irrevocably fragmented the high and low discourses encompassing art and luxury goods.

Equally importantly, in chronicling the Elkington story, neither Bury nor Culme looked across the Channel at the artisanal practices of the Parisian gilding ateliers with which, as I will demonstrate in my first chapter, G.R. Elkington developed such a strong early affinity and business relations. Nor did they consider the styles and artistic practices of *l'orfèvrerie française*, which had such an eye-opening and comprehensive influence on Elkington & C^o. at the Great Exhibition of 1851 and *Exposition Universelle* of 1855 that, from 1853 onwards, the partners recruited three Frenchmen to direct their artistic staff and make showpieces for the International Exhibitions, and to whom the company owed so much of its creative reputation. As G.M. Young wrote in his *Victorian Essays*: "...may I remind you of something which we are all apt to forget – I mean that the Victorian age, as we call it, is the insular phase of a movement common to the whole of western Europe and its offshoots beyond the seas. When we lift our eyes from our own country, our own ancestors, and look across the Channel, or across the Atlantic, constantly we find that ways and habits, fashions and prejudices, doctrines, ideas, and even phrases which we think of as typically Victorian, are really part of a general European pattern."¹²

As well as the Elkington & C^o. records, my research is based on a great deal of primary source material that has never been collated before, including archival documents; technical handbooks; press articles, features, reviews, and adverts; trade cards and trade directories. The digitization and online cataloguing of libraries and archives in recent years has only recently made much of this material available for comparative study, not only in Britain, but globally. My interdisciplinary study of these primary source materials reveals

¹² Young, 1962, p.110-111.

how Elkington applied new scientific research to develop new artistic materials, tools, and techniques, which they incorporated into an evolving industrial process and institutional infrastructure in a commercial business. In so doing, Elkington technically transformed metalwork into a modern industrial art, the world's first electrical art, which revolutionized the manufacture of utilitarian metal articles, transforming the socio-cultural perception of inferior goods, like plated flatware, cutlery, hollowware, imitation jewellery and personal accessories, into superior goods.

The application of electro-metallurgy to the mass-manufacture of electro-plated flatware and hollowware gave Elkington & C^o. the commercial success, and thereby the technical and financial resources for their subsequent artistic achievements. A full study of the development of Elkington's commercial flatware is beyond the scope of my art historical thesis, but is the subject of my published essay, "Elkington & C^o. and the Rapture of Travel, 1841-1961."¹³ Within a decade of its discovery, Elkington's commercial development of electro-metallurgy had completely supplanted the existing methods of gilding and silvering: mercury-gilding and fused-plating. What emerged was an industrial art organization and manufactory that was the iconic story of the 1830s and 1840s. In my first chapter I will describe the key technical discoveries of that early developmental period, which made it possible to electro-deposit almost anything from intricate ornamental motifs and mountings to monumental metal statues. I will show how, just as Boulton and Watt's steam-engine effectuated a mechanical Industrial Revolution,¹⁴ Elkington's artistic application of electro-metallurgy to the imitation of precious metals, and the manufacture, reproduction, replication, and rescaling of art-metalwork into the world's first electrical art was paradigm-shattering research, which in David S. Landes's terms must be seen as the beginning of the 2nd Industrial Revolution.¹⁵

¹³ Grant, June 2014, pp.2-31.

¹⁴ Grant, June 2012, pp.42-55.

¹⁵ Landes, 1969.

Chapter I.

Elkington & C^o. and the Application of Electro-Metallurgy to the Arts.

1. George Richards Elkington's Early Career. (Fig.1.)

G.R. Elkington's early career has never been researched before, and the suppositions that have been repeated verbatim in the scant existing literature are very misleading. Historians have seen G.R. Elkington solely in the context of the British silver and plated trade, whose traditional practices his eponymous company revolutionized from c.1840 onwards. However, the exclusive focus of his early business activities was the "Brummagem" gilt-toy and spectacle-making trade of the late-Georgian era, in which he learnt to utilize a wide variety of real and imitative materials using traditional tools and techniques, long before he made the revolutionary discovery of immersion-gilding that led directly to his career-defining development of electro-gilding and electro-plating. In 1840, G.R. Elkington was approaching 40-years old when he was granted the patent that specified "the application of a galvanic current,"¹⁶ and the commercial and cultural preoccupations of his early career, and unique social milieu of the artisanal and industrial community in Birmingham from which he emerged, were fundamental to that scientific invention, and the subsequent shaping of Elkington & C^o.'s art of electro-metallurgy.

Among the business announcements in *The London Gazette* of 5th May 1840 was a notification that G.R. Elkington had dissolved by mutual consent a long-standing partnership with his uncle, George Richards, as "Toy Manufacturers."¹⁷ A few months earlier, on 28th January 1840, there had been an announcement that another partnership, with Joseph Taylor,¹⁸ another gilt-toymaker, had been dissolved on 24th July 1839. For G.R. Elkington, the dissolution of these two partnerships with Birmingham gilt-toymakers of the previous, older generation was a conscious break with his own formative years in that trade, which freed all his energy and resources for his new electro-

¹⁶ G.R. and H. Elkington, 1840/1904.

¹⁷ *The London Gazette*, 5th May 1840, Issue 19853, p.1132.

¹⁸ *The London Gazette*, 28th January 1840, Issue 19818, p.178.

plating and electro-gilding business, which he established in partnership with his cousin Henry Elkington, and which he styled simply, Elkington & C^o.

George Elkington was born on 17th October 1801. When the Napoleonic Wars ended in 1815 he was aged 14, and was apprenticed to his maternal uncles, George and Josiah Richards. The two brothers were gilt-toymakers and jewellers at 43 St. Paul's Square in Birmingham, with sales premises in London. *Wrightson's Directory* of 1818 lists them rather exotically as "...patentees of the oriental amulets, jewellers, glass cutters, and toy makers, dealers in corals, and cornelian beads, &c."¹⁹ His father, James Elkington (1770-1843), had married George and Josiah's sister, Lydia Richards (1772-1830). He was an optician and spectacle-maker, with premises at 60 St. Paul's Square and 76 Bishopsgate Street, Birmingham.²⁰ George and Josiah Richards introduced their young nephew to gilt-toy manufacturing in Birmingham, and the London retail trade, and on 25th December 1824 George Elkington became George Richards business partner.²¹ As was customary at the time he adopted his uncle's surname, thereby signifying that George Richards Elkington was heir to his uncles' reputation in the gilt-toy trade.

The two unhyphenated surnames have often confused historians, and Richards is still commonly mistaken for the middle name Richard. This arose because during his lifetime he often used his initials, styling himself G.R. Elkington. In 1834, when he registered his first silver hallmark at the Birmingham Assay Office, he chose his initials, GRE. (Fig.2.) It was re-registered in 1840 in a rectangular punch, which he used to distinguish articles made in silver from the makers' marks used by his electro-plating firm. After he died, his eldest son, Frederick Elkington, re-registered GRE, in three conjoined circles, primarily to prevent other metalwork manufacturers from adopting it, but also so that the company could continue using it's founder's silver assay mark alongside his own

¹⁹ *Wrightson's*, 1818, p.108.

²⁰ Prior to 1812, various trade directories list him as a 'tortoiseshell, spectacle and toy-maker,' and then from c.1818-1831, he is listed as 'optician and spectacle maker'. See: A.D. Morrison-Low, 2007, Appendix, p.304.

²¹ G.R. Elkington's first business partnership was styled Richards & Elkington.

FE in two conjoined circles.²² Family firms ensured a degree of trust with money, valuable stocks of precious metals, tools and trade secrets, and gave continuity to the skills, experience, and reputation of metalwork manufacturers. A good family name was also an important signifier of reliability in business dealings, and offered an assurance of quality workmanship. This was cardinal to Birmingham's toymakers, who were often vilified with the "Brummagem" reproach of making shoddy or sham articles.²³

After five years as his uncle's junior partner, the manufacturing partnership in Birmingham was dissolved on 1st June 1829, and 'George Richards and Elkington' was restyled 'Richards & Elkington.' Elkington took sole control of the business at 43-44 St. Paul's Square in Birmingham, whilst his uncle leased premises at 24 Bartlett's Buildings, Holborn, where he managed of the retail end of the business in London. (Fig.3.) The association with Bartlett's Buildings, near Hatton Garden in London's jewellery quarter, belies Elkington's formative years in the late-Georgian era. In 1720, Strype described Bartlett's [*sic*] Buildings as "...a very handsome place, graced with good buildings of brick, with gardens behind the houses, ...very well inhabited by gentry, and persons of good repute."²⁴ However, by the time Richards & Elkington moved into Bartlett's Buildings it had, since 1811, become vividly lodged in the public imagination through Jane Austen's *Sense and Sensibility*, as the place where the manipulative social-climber Lucy Steele lodged with her cousin when in London. They were "a quaint alley of dark brick houses with pedimented doorways and white window-frames," where a few attorneys, and provincial silver and gold merchants, like Richards & Elkington, had showrooms.²⁵ To highly discriminative late-Georgian sensibilities, the name Lucy Steele evoked a showy base metal, redolent of close-plated articles. These were made by the heat fusion of silver-foil and tin onto steel articles using a soldering iron. A cast or stamped steel article was

²² See: Elkington & Co. Ltd., 1923, pp.16-17 and Mappin, 2006, pp.39-42.

²³ Smiles, 1865, p.170.

²⁴ Strype, *Survey*, p.252.

²⁵ Hill, 1922, p.208.

dipped into a flux of *sal ammoniac*, then immersed in molten tin, covered in silver-foil cut to shape, and then rubbed with a heated soldering iron, causing the tin to melt, and fusing the silver to the steel.²⁶ A cheap imitation of sterling silver, the method was used to make durable articles, like flatware and cutlery, scissors, nutcrackers, candlesnuffers buckles, and spurs. Close-plated goods were closely affiliated with “Brummagem” gilt-toys, and, like the uncultivated, conniving Lucy Steele, were thought by polite society to flatter in order to deceive; the thin silver-foil was a base and sham imitation.

Wrightson's Directory of 1835 lists Elkington as a manufacturer of “real and imitation pearl, black and gilt ornaments.”²⁷ Black ornaments were mourning jewellery and hair accessories, comprising brooches, rings, and bracelets. Wearing black during the distinctly prescribed phases of mourning was *de rigueur* in Georgian and Victorian Britain. Aside from mourning-wear, black ornaments were fashionable in Britain and France throughout the 19th-century, so it was a sizeable trade. They were usually made from Whitby Jet (lignite) or its imitations, ebonite or Vulcanite (patented by Charles Goodyear in 1846), French Jet, and Vauxhall glass. No surviving black ornaments are marked or otherwise firmly attributable to Richards & Elkington, but he and his uncles were listed in directories as dealers in such articles, in both real and imitation materials.

A Memorandum of Agreement survives that indicates G.R. Elkington ran the manufacturing operations in Birmingham, whilst his uncle sold the articles to the lucrative retail market in London.²⁸ Elkington agreed to supply his uncle with gilt-toys manufactured at his shop in St. Paul's Square in Birmingham at a preferential rate. This arrangement, linking provincial manufacturing operations to retail outlets in London, the main market for gilt-toys and plated wares, is notable, because, six months after Richards & Elkington was dissolved, Elkington signed a similar partnership agreement to supply

²⁶ *Sal ammoniac* is a mineral composed of ammonium chloride (NH₄Cl). R. Morton and M. Hallett, 1989, pp.41-44.

²⁷ Wrightson and Webb, 1835.

²⁸ Elkington, AAD/1979/3/1/1, p.7.

electro-plated articles at a preferential price to the silversmith Benjamin Smith III of Duke Street, Lincolns Inn Fields. Elkington gave Smith the exclusive right to market electro-plate in London, agreeing not to supply other retailers in the capital. Correspondence with Smith, from August 1839 until the first agreement was signed on 29th October 1840,²⁹ reveals that the dissolution of Elkington's early partnerships made way for a far more extensive arrangement with Smith. The break with his roots in the gilt-toy trade, and the association with Smith, linked him to the prestigious London silver trade. The important proviso in the arrangement with Smith was that in return for the exclusive supply of electro-plated articles, Smith furnished Elkington with patterns and designs from his sales catalogues, by the designers he employed at Duke Street.

Although various Birmingham directories of the 1830s list Elkington as a manufacturer of "real and imitation... gilt ornaments," apart from spectacles manufactured to his patented design there are almost no articles marked or otherwise attributable to his manufacture until he began making electro-plated flatware and cutlery c.1841. The lack of any surviving marked articles prior to this date suggests that Elkington was primarily a gilder of toys designed and manufactured by others. Until March 1842, when Josiah Mason invested in the business, Elkington's main activity was not manufacturing but gilding for the trade.

His early focus on gilding is confirmed by another important early partnership, which he formed in 1837 with John Hardman Snr., John Hardman Jr., and Jeremiah Iliffe, of Hardman & Iliffe, and William, James, and Henry Turner of the button-makers Hammond, Turner & Sons. Styled G.R. Elkington & C^o., the partnership was founded to exploit Elkington's Patent No. 7134 of 24th June 1836, for an improved method of "Gilding Copper and Other Metals." Elkington's ledgers reveal that this gilding

²⁹ Elkington, AAD/1979/3/1/6, p.17-19.

partnership was an important and profitable business venture from 1836-41.³⁰ After the discovery of electro-plating and electro-gilding c.1840 it made diminishing returns, and on 20th October 1843, *The London Gazette*, which described the firm simply as ‘Gilders,’ announced the partnership had been formally dissolved after six years of profitable business.³¹

³⁰ Elkington, AAD/1979/3/12. Ledgers.

³¹ *The London Gazette*, 20th October 1843, Issue 20271, p.3415.

2. *L'âge du mercure.*

Until 1836, the commonest method of gilding used an amalgam of ground-gold and mercury applied to copper-alloys. It was commonly known as gilt-bronze, after the French term *bronze doré*, and its products were termed ormolu, also from the French, *or moulu*, meaning 'ground-gold.' The process was extensively used in Birmingham to mass-manufacture gilt-buttons and other toys. Articles were also manufactured in silver-gilt, which was often called by the French term *vermeil*. This used the same method to apply the amalgam of ground-gold and mercury to the surface of silver. When fired, the mercury in the amalgam was volatilized, leaving behind a thin film of gold. Using silver or copper-alloy as the foundation metal for an ornamental object was cheaper than manufacturing it in solid gold. Mercury-gilding greatly reduced the frequency of polishing required, which risked erosion on intricately detailed articles like centerpieces, trophies, and monstrances.

Mercury was heated in a crucible to just below its boiling point (356.73 °C) then the gold was stirred-in and heated until a ratio of one-sixth gold to mercury was amalgamated. After cooling, it was slightly softened and diluted with saltwater and then squeezed through chamois leather. This removed any excess mercury, and gave the amalgamated paste a spreadable consistency like butter. The amalgam was then gently warmed and spread over the copper-alloy article using a brass wire-brush. Due to its affinity with mercury, silver gave a more permanent adhesion, but was more expensive than copper as a foundation metal. Copper-based articles first needed to be cleaned and prepared using a process known as *quicking* or *quickenning*, which involved immersing it in nitrate of mercury.³² The article was then heated over charcoal until the mercury was volatilized from the amalgam, leaving behind a firmly adhered coating of gold. This

³² 'Nitrate of mercury' is mercury (II) nitrate, $\text{Hg}(\text{NO}_3)_2$, a solution of mercury saturated with nitric acid. Milliners used it in the felt-making process.

occurs because during the preparatory process when the copper-alloy article is plunged into the mercurial solution, the nitric acid and oxygen in the salt have a greater affinity with the copper than the mercury, so the nitrate is decomposed by the copper and the mercury precipitated, attaching as a thin film on the copper. When the gold amalgam is fired the mercury amalgamates with both metals, effectively alloying their surfaces by acting as a stratum of solder between the two surfaces.³³

The obvious drawback with the process was that mercury vapours were extremely harmful to the gilder, or indeed anyone living in the immediate vicinity of a gilding-shop. In 1801, Collard and Fraser raised the alarm in the British scientific and medical communities by describing the detrimental effect of volatilized mercury on the health of gilders in Birmingham in the *Philosophical Magazine*: “Thus a principal part of the mercury ascends the chimneys, is deposited on the tops of houses and about the adjacent neighbourhood, and great quantities are inhaled and absorbed by the operator, keeping him nearly in a state of salivation till disease obliges him to desist.”³⁴ The article warned that the scale of mercury volatilization in Birmingham was damaging the environment of the whole town: “Considerable quantities of mercury thus volatilized are found united and collected in small pools in the spouts and gutters on the tops of the buildings. Thus many tons of mercury have [*sic*.] been dissipated about the town and neighbourhood of Birmingham, to the great injury of the inhabitants. The poor sweep who has ascended the chimneys has been salivated, and the manufacturer has sustained considerable loss.”³⁵

From c.1780-1830, the consumption of mercury in the gilding quarters of Birmingham and Paris was extensive, and Collard and Fraser’s essay was reported in the *Annales des Arts et Manufactures*.³⁶ André Guillerme has called the period *l’âge du mercure*: “From 1780, fifty tons were consumed each year in Paris, half of which was volatilized

³³ Shaw, 1844, pp.88-100.

³⁴ Collard and Fraser, 1801, p.18.

³⁵ *Ibid.*

³⁶ *Annales des Arts et Manufactures*, 1801, pp.46-53.

and then dissolved into the surface or groundwater and washed into the Seine. Two to three hundred tons in the boom years of the Restoration, from 1822-25, went up in smoke, was diluted into the nearby atmosphere and then into the Seine. Let us venture that 5000 tons were volatilized with the ‘cap and pan’ from 1780-1830, two kilos for each Parisian life, fifty grams per square metre in fifty years.”³⁷

Cheaper than gold and silver, copper-alloys were strong and easy to cast, and easily ennobled by mercury-gilding. In Paris, *bronze doré* was used to make large highly ornate showpiece articles, like mantel clocks, candelabra, or elaborate furniture mounts to create the opulent illusion of pure gold. In an essay on mercury-gilding techniques in the 18th-century, Martin Chapman described how, “Mercurial gilt bronze became an essential and conspicuous part of Parisian interior decoration from the early eighteenth century,” which “...led to manufacturing methods that became more sophisticated as the century progressed...” until, by the 1780s, “...the final stages of mercury gilding were refined to a degree that ensured the surface color and richness of fine gold and the most subtle contrasts of light and texture.”³⁸ Writing about French Empire mantel clocks, Catherine Vignon has described how the freedom of trade after the 1789-99 Revolution transformed some of the small, specialized ateliers of the *ancien régime* into large-scale art manufacturers. “At the end of the eighteenth century, the production of gilded-bronze works considerably increased as working conditions became easier. The freedom of trade initiated after the French Revolution allowed many casters, who, during the *ancien régime* had worked in shops strictly limited to making bronze, to develop large bronze factories. They took advantage of this opportunity to execute all stages of bronze making within one factory and drew, cast, gilded, assembled, and sold objects of their own workshops. For a time, a blessed period in the history of gilded bronze, craftsmanship and manufacturing complemented one another. Contractors and artisans still benefited from

³⁷ Guillerme, 2004, p.14.

³⁸ Chapman, 1994, pp.229-230.

pre-Revolution training and worked according to the standards of a luxury art from the *ancien régime*, but they had access to modern organization and better means of production. Thus they brought their expertise to the highly specialized processes of important factories that each employed up to 800 workers during the economic boom of 1797.”³⁹ The transformation of small Parisian *ateliers des doreurs* into large manufacturing retailers, which united every stage in the production of *bronze doré* articles under one roof and corporate entity, from design, casting, assembling, mounting, and gilding to a retail showroom fronting the factory, exerted a strong formative influence on Elkington and his generation of toymakers in Birmingham, who entered the trade after the Napoleonic Wars.

Despite its cultural and commercial importance, concerns over the health of gilders, and pollution of the neighbourhoods in which they worked, prompted various restrictions in Britain and France regulating where gilding shops could be located, the equipment they should use, and the provision of mechanical ventilation. Despite efforts by various reformers in both countries, such as the French industrial chemist Jean-Pierre-Joseph d’Arcet, to improve the methods and apparatus used, and impose mechanical ventilation in ateliers, the health-warnings went largely unheeded, and legal measures were often ignored. Although reforms did bring about some improvement in working conditions, only the largest gilding firms operated with permits, and the sheer size of the trade in Birmingham and Paris, mostly comprising small family firms, partnerships, or sole traders, made implementing health regulations impossible. “Mercury contributed to make Paris the capital of luxury... but also the most polluted city.”⁴⁰ Eventually, in 1830, the government of the July Monarchy finally implemented legislation restricting the use of mercury. The impact on the Parisian ateliers was profound. Although, according to Vignon, *l’âge du mercure* was already in decline because the ‘golden’ generation of gilders

³⁹ Vignon, 2003, p.170.

⁴⁰ Guillerme, 2007, p.79.

that refined the art of *ormolu* during the decadent demise of the *ancien régime*, late neoclassical pomp of the Empire Style, and opulent Bourbon Restoration, had all died; many of them still young. “The golden age ended in the 1820s when this generation of craftsmen, contractors, and labourers died out.”⁴¹

In 1821, the remarkable Birmingham physician Dr. John Darwall (1796–1833),⁴² a pioneer of early medical studies into public health issues associated with gilt-toymaking in Birmingham, presented a paper to the University of Edinburgh (in Latin as was the custom) titled, “Diseases of Artisans with Particular Reference to the Inhabitants of Birmingham.” It was one of the first British studies to describe work-related illnesses in medical terms, and gives a particularly graphic account of the health-hazards of volatilized mercury: “Of the diseases which are caused by poisonous metals,” he wrote, “paralysis and shaking palsy caused by mercury are the most noteworthy.”⁴³

The reforming zeal of the late-1820s in Britain promoted greater awareness of industrial working conditions, and sustained efforts by health-campaigners like Darwall brought improvements. By the end of the decade, Darwall was able to write in the *Midland Medical and Surgical Reporter*: “The only other disease which it appears necessary to mention, as depending on the trades in this place, is what is called among the common people, the Shakes, or the Gilders’ Palsy. The improved modes of button-gilding have made this a much rarer complaint than formerly, and even in toy-gilding, which is still executed with the cap and pan, the improved construction has diminished the evil.”⁴⁴ However, it was only in 1878 that legislation, specifically relating to the silvering of mirrors, regulating the use of mercury was introduced in Britain, and mercurial-poisoning

⁴¹ *Ibid.*

⁴² See: Conolly, 1834, and A. Meikeljohn, 1956, pp.142–51.

⁴³ Meikeljohn, 1956, p.148.

⁴⁴ Darwall, 1828-29, p.152.

was not made a notifiable disease under the Factories Act until 1899, by which time less than a 1,000 workers in Britain were still exposed to its dangers.⁴⁵

The fact that G.R. Elkington invested so much time, energy, and money during the early years of his career to finding gilding methods that did not ruin the lives of gilders, and those that lived and worked nearby, is unsurprising considering both his parent's families were in gilding trades. The rapidly growing middle-class market wanted gold articles, but could not afford the real thing, so there was an insatiable demand for cheaper imitations in gilt-bronze. Some idea of the number of artisans at risk in the heyday of Birmingham's 'mercurial age' can be found by studying Pigot's *Commercial Directory for 1818-19-20*, which lists 187 distinct businesses in Birmingham directly involved with gilding: 25 gilders, 79 gilt-toymakers, and 83 (gilt and plated) button-makers. He also lists 96 jewelers, 13 goldsmiths, and 16 spectacle-makers, which also probably used gilding.⁴⁶ In the first two decades of his career, from 1815-36, apprenticed to his uncles, learning every aspect of the gilt-toy trade, and working in his father's spectacle-making shop, Elkington must have witnessed firsthand the life-limiting symptoms of 'the Gilders' Palsy,' because finding a commercially-viable, technological alternative to mercury-gilding became the primary aim of his early working life.

⁴⁵ Lee, 1968, pp.52-62.

⁴⁶ Pigot, 1918, pp.24-74.

3. The Discovery of Immersion-Gilding in 1836.

In 1836, G.R. Elkington discovered and patented a process of gilding without mercury, which involved the immersion of copper and its alloys in an aqueous alkaline gold solution.⁴⁷ The diluted alkaline solution ensured greater adhesion of the gold to the non-precious metal object by reducing the corrosive chemical reaction caused by acidic gold solutions. According to Alfred Smee, Elkington's process of was commonly termed *water gilding* in Britain,⁴⁸ but is now termed immersion-gilding. In France it was known as *le voie humide*, or *le procédé Elkington*, and, more colloquially, *la liqueur Elkington*. Its use was quickly eclipsed by Elkington's invention of electro-gilding and electro-plating but, by removing the life-limiting risks associated with mercury, it transformed the art of gilding.

Previously, the best-known method of dissolving ground-gold was in a highly corrosive mixture of concentrated nitro-hydrochloric acid, in the ratio of one part hydrochloric acid (HCl) to three parts nitric acid (HNO₃), commonly known as *aqua regia*. The name, derived from the Latin, meant 'royal water,' because it dissolved the noble metals gold and platinum. Various recipes using the salts of gold dissolved in *aqua regia* to gild metal surfaces can be found in 18th-century technical literature. According to Willem van Laer,⁴⁹ the cold-gilding *aqua regia* method was mainly used for repairing areas of mercury gilding, because rubbing *aqua regia* solution onto bare or thinly-coated areas was quick, and obviated further exposure to mercury vapours.

G.R. Elkington's great innovation was to saturate *aqua regia* with potassium bicarbonate, which neutralized the acidic solution into an alkaline one. The mixture was then boiled for several hours before the articles to be gilded were hung from wires and dipped into the boiling alkaline gold solution for around a minute. The gilt articles were

⁴⁷ George Richards Elkington, No. 7134, 24th June 1836, 1957.

⁴⁸ Smee, 1843, p.212.

⁴⁹ Laer, 1721. Willem van Laer (1674-1722) was a master-silversmith from Zwolle, Netherlands.

then allowed to cool, washed in water, and then polished. In *Elements de électro-chimie* of 1843, Antoine César Becquerel (1788-1878) wrote, “In Elkington’s process, there is one great innovation, it is the substitution of an alkaline gold bath for the acid bath, which, by acting with too much energy on the copper, determines a tumultuous precipitation of the gold, whereas with the first deposit being made regularly the molecules obey the force of aggregation and form a layer of gold, which can be obtained by dissolving the copper slowly in dilute nitric acid.”⁵⁰

Elkington’s patent specification lists the array of articles that may be gilded by the process, and reveal his early preoccupations as a Birmingham gilt-toymaker, and that scalability and production-rate for the gilt brass and copper trade were his commercial priorities: “Supposing the articles desired to be gilded to be brass or copper buttons, or small articles for gilt-toys or ornaments of dress, such as carriages or bracelets, a considerable number of which may be strung on a hoop or bended piece of copper or brass wire... and the requisite gilding will be generally obtained in from a few seconds to a minute...”⁵¹ He even claimed his process was an improvement on mercury-gilding in appearance and durability: “...the articles operated on having a very beautiful appearance, and in most instances are considered to be gilded far better than when similar articles have been submitted to the gilding process where quicksilver is used.”⁵² This solitary, oblique reference to ‘quicksilver’ simply served to stress that his new process did not use mercury. What his specification repeatedly emphasized was that the method was entirely different because it was a modern chemical process without any life-limiting health risks.

The following year, Henry Elkington registered two further patents for improvements to his cousin’s immersion-gilding method: Patent No. 7304 of 17th February 1837 and Patent No. 7496 of 4th December 1837. The first introduced

⁵⁰ Becquerel, 1843, p.325.

⁵¹ Patent No. 7134, p.3.

⁵² Patent No. 7134, p.2.

improvements to the patina of finished articles but did not commercially add to the 1836 process. The second attempted to extend the method to silvering non-precious metal articles, but was never widely adopted because silver did not adhere as durably as gold in the immersion process. More importantly, there was no real imperative to change because the existing methods of silvering non-precious metal objects, fused-plating and close-plating, were not ruining the operatives' health, or polluting whole cities. Nevertheless, Henry's auxiliary patents reveal a sustained effort by both cousins to research, patent, and develop scientifically new methods of gilding and silvering.

G.R. Elkington's half share of the profits from the immersion-gilding business rose in the first two years of trading from £1250 in Britain and from £667 in France in 1837, to £2000 in Britain and to £3896 in France in 1838.⁵³ In 1843, Becquerel wrote in *Elements de électro-chimie*, "... M. Elkington discovered a process of gilding on copper by immersion, which gives a great extension to this branch of industry."⁵⁴ Elkington filed for a patent in France on 10th October 1836, and by the time the patent came into force on 15th December, Elkingtons had effectively agreed a cartel of licensing agreements with three large *ateliers des doreurs*, Moulé frères, Élamberg, and Bonnet et Villermé. The business relations Elkington established in Paris in 1837 to secure and exploit the rights to their French immersion-gilding patent, were the beginning of a sustained dialogue with the trade in Paris that in the 1850s encouraged them to employ a large staff of French artists and artisans that profoundly influenced the design of their metalwork until the 1880s.

This was ensured by a succession of taxing legal cases that demanded the attention of Elkington and their various French associates until the mid-1850s. Initial challenges to Elkington's 1836 and 1840 patents were dispensed with in 1843, when *Aris's Birmingham Gazette* reported. "We have much pleasure in observing from the French

⁵³ Elkington, AAD/1979/3/12. Ledgers.

⁵⁴ Becquerel, 1843, p.325.

journals, that the Cour Royale of France has, during the last week, confirmed the Patents taken out in that country by Mr. Elkington of this town, for gilding metals. We understand the cause has been several years before the different Courts, and the patents have been most severely tested, and at great expense, by the combination of numerous parties in Paris interested in their repeal. ...It appears to have been regarded as one of the most important patent cases ever brought before the French Courts; and the present decision (from which there is no appeal) proves what has been held to be problematical by many, that it is possible for a foreigner to obtain justice in France.”⁵⁵ However, Elkington and their associate Charles Christofle were to encounter further legal challenges when Christofle acquired the exclusive French rights to their 1840 electro-plating patent, battling against numerous infringements of their rights that lasted into the 1850s.

From c.1835, the London-based Nathan Mayer Rothschild & Sons acquired an effective monopoly over the production, pricing, and supply of mercury from the Almaden mines in Spain, which lasted until the 1920s.⁵⁶ The triple whammy of government restrictions on mercury after 1830, Rothschild’s control over supplies, and Elkington’s introduction of immersion-gilding, was so devastating to the mercury-gilding trade in Paris that a great many of the smaller *ateliers des doreurs* and *bijoutiers* were ruined, almost overnight. The impact was so profound that in 1841 the *Revue Scientifique et Industrielle* claimed, perhaps rather exaggeratedly: “However, from 23rd December 1836, Elkington had formed with MM. Moulé brothers, jewellers, of 1 rue Chapon, a company to exploit this process, and six months later, the company was in full activity, so in 1837 all the ancient jewellery gilders were forced to close their ateliers and find a new livelihood, some of them hitherto long-established saw themselves reduced to offering canes and watch chains to passers-by on the boulevards.”⁵⁷ Inevitably, there were patent infringements by

⁵⁵ *Aris’s Birmingham Gazette*, Monday 21st August 1843, p.3.

⁵⁶ Platt, 2011.

⁵⁷ *Revue Scientifique et Industrielle*, 1841, pp.461-462.

Parisian gilders, which led to protracted French lawsuits by Elkington, supported by Moulé and Élambert, from 1841-43.⁵⁸

Gradually more ateliers began using *la liqueur Elkington* legitimately. In a report on the Parisian gilding-trade in 1842, the industrialist and health-reformer, Jean-Pierre-Joseph d’Arcet, quoted Elkington’s associate Élambert as saying: “The process of immersion-gilding has greatly developed over the last two years; the ateliers where it is practiced and the artisans that use it are multiplying; this new process improves each day, and everything indicates that its products, their variety, their beautiful appearance, and their low prices will compete with great advantage against those workshops that gild using mercury. The introduction of the process of immersion-gilding in the practice of the art of gilding metal, has brought about a genuine revolution in this industry, and, as it is certain now that this new process will prevail...”⁵⁹ Elkington’s ledgers reveal that 1838 was the most profitable year for the immersion-gilding method,⁶⁰ and gave G.R. Elkington the confidence to invest in a new purpose-built gilding works and retail showroom on Newhall Street in Birmingham.

⁵⁸ *Revue Scientifique et Industrielle*, 1841, pp.461-532.

⁵⁹ Arcet, 1843, p. 96.

⁶⁰ Elkington AAD/1979/3/3.

4. Elkington's Newhall Street Manufactory and Showroom.

The most enduring legacy of the immersion-gilding partnership with the Hardman family was the construction of a new gilding works and showroom in 1838. It fronted onto the lowest point of Newhall Street (now No. 144), between the towpath of the Birmingham and Fazeley Canal and Charlotte Street. In just over a decade the original façade and showroom expanded to become a world-famous Birmingham landmark. The tradition of aristocratic factory tours, beginning and ending in a retail showroom, which began at Boulton's Soho and Wedgwood's Etruria in the 1760s, reached its apotheosis at Newhall Street. In 1851-1852, Elkington's showroom was vastly expanded and refurbished into a large exhibition space designed to recreate a sense of their successful display at the Great Exhibition. Over the next two decades, numerous reports in the popular press portrayed Newhall Street as an aesthetic and technological fantasia of a retail gallery and modern factory, which shaped the company's reputation in the public imagination.

Acquired at auction on 20th October 1837, the land comprised three separate leaseholds amounting to 8392yd² (1.73-acres or 7017m²).⁶¹ The architect of the new building was Joseph Plevins (1784-1846), of 8 Waterloo Street, Birmingham, who a year earlier had designed the elegant Grecian-style baths at Leamington for John Goold, which replaced William Abbot's Original Spa.⁶² The builder Eli Buckler (1877-1860) was contracted to erect the gilding-works and showroom to Plevins' specifications.⁶³ Construction began on 20th May 1838. Buckler estimated £2307, but the final cost was £2,658.3.10.⁶⁴ According to a note of 18th March 1838, the cost of fitting-out the

⁶¹ Elkington, AAD/1979/3/1/1, p.46-47.

⁶² Reeve's *New Guide*, 1839, p.22

⁶³ Elkington, AAD/1979/3/1/1, p.55.

⁶⁴ Elkington, AAD/1979/3/1/1, p.95.

showroom's wooden display cabinets was £60 including French Polishing, plus £24 for fitting *Chance Brothers'* new 'Patent Plate' cut and polished blown glass.⁶⁵

The factory opened on 28th November 1838. An advertisement for G.R. Elkington & C^o. depicting the original "PATENT GILDING WORKS, NEWHALL-STREET, BIRMINGHAM" appeared in *Osborne's London & Birmingham Railway Guide* of January 1840.⁶⁶ (Fig.4.) A year into Victoria's reign, its design was typically late-Georgian Greek revival in its simple symmetry and mathematical ratios. The scale of the factory was conspicuous in Birmingham at a time when gilding was mostly done in small workshops.⁶⁷ By 1838, Elkington's gilding operations employed a sizeable workforce, and the move from 43-44 St. Paul's Square to the new purpose-built factory on Newhall Street was a confident statement of ambition. The advertisement also reveals that Elkington had moved his London retail premises from Bartlett's Buildings to 6 Hatton Gardens. Notably, what it does not mention is the manufacture or sale of gilded articles, and the business offering is categorically simple, "...to gild articles of every description, in silver, steel, iron, copper, brass, German silver, &c." using the newly patented process.

From the mid-1840s, as the frontage expanded along Newhall Street, the plain symmetry of Plevins' austere neoclassical brick façade of 1838, with a simple aedicule framing a recessed double entrance and plain trapezoidal window lintels, was given the addition of a grand palazzo-style stucco façade, dominated by a tetrastyle portico with fluted Doric columns, and Doric entablature. The most striking feature of the façade after 1851 is the large Royal Coat Of Arms of Queen Victoria crowning the parapet directly above the portico, proclaiming the firm's royal warrant. (Fig.5.)

In 1950, a century after the Great Exhibition, Elkington ceased operations at Newhall Street and the manufactory, now 2.3-acres, was converted into Birmingham's

⁶⁵ Elkington, AAD/1979/3/1/1, p.55.

⁶⁶ *Osborne's*, 1840. Advertisement.

⁶⁷ See: Barnwell, Palmer, and Airs, 2004.

Museum of Science & Industry. In 1966, it was described in Pevsner's *Warwickshire*: "Originally the electro-plating factory of Messrs. Elkington beside the Birmingham and Fazeley Canal, over which it is carried on arches. In a plain palazzo style. It probably dates from the 1840s and was clearly designed as a prestige showroom as well as a factory. The stucco façade is long, with a projecting porch of four fluted Doric columns, and a central window flanked by a couple of pilasters which support a pediment. The brick side elevation has two tiers of segment-headed windows. The interior must have been considerably reconstructed, but there is still an impressive gallery with an arched roof supported by heavy brackets on buttresses and a central skylight."⁶⁸

Correspondence suggests that Plevins was involved in the expansion of Newhall Street until he died on 23rd July 1846. When it was extended again at the end of 1851, the showroom occupied the whole of the top floor of the palazzo-style building. A 35mm slide photograph taken in 1960 by Phyllis Nicklin, shows it dwarfed by Telephone House (the central telephone exchange) built in 1936, and reveals there were blind windows on the second floor, stucco indentations with lintels and sills that preserved the symmetry and proportion of the façade. (Fig.6.) Writing on the portico confirms that by 1960 the building was the Museum of Science and Industry. Engravings of the interior of the showroom from the 1850s confirm that there were no windows, and that the interior walls of the showroom were lined with tall display cases. The central skylight described by Pevsner comprised clerestory windows above brackets on buttresses, below a paneled ceiling with ornate rosettes. In respect of lighting, the showroom was remarkably advanced, and it is striking how similar the design of South Kensington Museum's picture galleries were a decade later.⁶⁹

On 29th June 1846, the stonemason William Smith of Cumberland Street, Birmingham submitted estimates to install the stone staircase that directed patrons up to

⁶⁸ Pevsner, 1966, p.140.

⁶⁹ See: Kerr, 1865, p.191.

the showroom from the portico, which projected over the pavement to greet carriages on Newhall Street. Smith's estimates quote for both a high-quality Hoptonwood limestone costing £66, with matching vases to adorn the staircase costing £6 each, or Painswick stone at £40, with vases at £3.15s. "If Painswick Stone is adopted I will undertake to have the whole completed in Six Weeks from the day the contract is signed but if Hoptonwood is used I could not fix a positive time."⁷⁰ The reason Smith could not guarantee the supply of Hoptonwood was because in 1846 the quarries at Middleton-by-Wirksworth, Derbyshire were struggling to supply the rebuilding of the New Palace of Westminster. No document survives to confirm which stone was chosen, but it is unlikely that Elkington settled for anything less than the best.

One of Elkington's surviving ledgers reveals that Newhall Street remained in the co-ownership of the immersion-gilding partnership for five years, until 25th March 1842, when Elkington acquired sole ownership, paying his partners £2,500 for their share of the property, before the partnership was formally dissolved on 20th October 1843. However, the ledgers also reveal that the transfer of ownership was not finalized until 6th August 1844, when John Hardman Jnr. loaned Elkington £4000 to complete the purchase. Hardman Jnr. had left his father's firm to start on his own account as a manufacturer and factor of ecclesiastical metalwork in 1838. Correspondence suggests that Elkington and Hardman Jnr. were close associates, and the loan was only fully repaid in September 1857.⁷¹ Almost exactly a year after G.R. Elkington acquired sole ownership of Newhall Street, he and Henry entered into a new partnership with the successful steel-pen manufacturer Josiah Mason (1795-1881). (Fig.7.)

⁷⁰ Elkington, AAD/1979/3/1/1, p.11.

⁷¹ Elkington, AAD/1979/3/12. Ledgers.

5. The Partnership with Josiah Mason.

Mason joined the partnership on 29th March 1842. Elkington's ledgers show that he paid £3,000 to George and £2,000 to Henry for an equal share of the business, plus £5,000 into the firm's capital account.⁷² The relative value of Mason's £10,000 investment today, in terms of the *historic opportunity cost* of the project, is £1,089,000. However, a more inclusive measurement of Mason's investment opportunity is the *economic cost* of the project, which would approximate to something more like £29,170,000 today.⁷³ Mason diversified his business interests into electro-plating just as Britain was emerging from the prolonged trade depression of 1836-1843, and his investment began over a decade of major continuous expansion at the firm.

According to John Thackray Bunce, the Newhall Street factory was redesigned and greatly extended to Mason's specifications: "It was necessary to provide suitable buildings for a manufactory; and the great establishment now existing in Newhall Street, Birmingham, was resolved upon. This was Mr. Mason's own design. He found the money, and laid out the plans of the workshops and showroom, which were built entirely to his arrangements. These works were intended for the production of articles of taste, and of those domestic articles to which ornament could be applied."⁷⁴ Bunce's 1882 biography was published a year after Mason died. It was printed for private circulation as a gift to civic grandees attending a memorial anniversary at Mason's Science College in Birmingham, which Mason had founded in 1875 to teach applied science. Bunce was the longstanding editor of the *Birmingham Daily Post*. He wrote the biography based on Mason's own memoranda, and notes made in conversation. Its engaging, journalistic,

⁷² Elkington, AAD/1979/3/12. Ledgers.

⁷³ The *economic cost* of the project indicates the opportunity cost by measuring its relative share as a percentage of the total output of the British economy, and suggests its importance to society as a whole as a share of GDP. See: <http://www.measuringworth.com/>

⁷⁴ Bunce, 1882, p.48.

anecdotal style provides an invaluable record of Mason's career in the steel-pen and electro-plating trades. Bunce's interviews with Mason are the only firsthand account of the early development of Elkington & C^o. by any of the partners or senior employees.

Born at Kidderminster in 1795, Mason was the son of a carpet-weaver. Without formal education or apprenticeship, he laboured at various odd jobs before joining Kidderminster's staple trade as a loom-weaver at John Broom's carpet-works. He taught himself to read and write, and c.1815, with the end of the Napoleonic Wars, he left behind the poor wages and prospects of Kidderminster to lodge with an uncle in Birmingham. He married his cousin Anne Griffiths on 18th August 1817, and took charge of a small gilt-toy partnership in which his uncle, who was employed full-time as the managing clerk of Gibbins glassworks on Baggott Street, had invested his savings. The business had run into difficulties and his uncle's partner had fled Birmingham, so Mason devoted himself to rescuing the business on a promise that if he recovered his uncle's investment and "worked up the trade to its full capacity" he would be made a partner.⁷⁵ In a short time, Mason paid off the debts, recovered his uncle's loss, and made the business profitable. However, his uncle reneged on the agreement to make him a partner and sold the now thriving business. According to Bunce, this disappointment in the gilt-toy business "...was no doubt the best thing that could have happened to Josiah Mason."⁷⁶ Despite a substantial offer by the new owner, a rule-maker named Richard Bakewell,⁷⁷ to continue running the business, Mason resolved to leave. "It was in 1822 – when he was twenty-seven years old – that he left the gilt-toy business in Legge-street, and was thrown upon his own resources, with little money in hand and no work in prospect."⁷⁸

⁷⁵ Bunce, 1882, p.15.

⁷⁶ Bunce, 1882, p.19.

⁷⁷ Richard Bakewell (1797-1826) was a Mathematical Instrument Maker of Loveday Street, Birmingham, listed in Pigot, 1818, p.47.

⁷⁸ Bunce, 1882, p.19.

Nevertheless, the reputation he'd gained from turning around his uncle's gilt-toymaking business led to a recommendation by James Heeley, a steel-toymaker of Great Charles Street,⁷⁹ to his friend Samuel Harrison, a split-ring maker in Lancaster Street. Aged 27, Mason and his wife moved into a house attached to Harrison's shop in Lancaster Street. After a year, Harrison retired and sold the business to Mason for the moderate sum of £500 from future profits. Within six months, by May 1824, Mason was the sole owner of an established and profitable business. In 1828, he acquired 36 Lancaster Street, where he remained in business until he retired c.1875. Harrison was Mason's friend and mentor until he died in 1833. Soon after taking ownership, Mason decided to expand into manufacturing steel-pens. From 1827, Mason made barrel steel-pens, but in 1828 he saw a steel slip-pen designed and manufactured by James Perry & C^o., and conceived of an improvement to Perry's design, which he sent to him. On receiving the improved pen, Perry immediately traveled to Birmingham from London to propose a partnership agreement with Mason. Although he only began making pens in Manchester in 1824, Perry had established a reputation as a London retailer, so it was agreed only Perry's name and maker's mark would be used to market 'Perryan' pens. In return, Mason would be Perry's sole supplier. "Owing to his connection with Mr. Perry his interest in penmaking was unknown," wrote Bunce, "...and millions who used the famous Perryian pens never dreamed that all of them were made by a single manufacturer in Birmingham."⁸⁰ Mason also supplied pens to other well-known retailers in Europe and America whose names he stamped on the pens he manufactured, so the world's largest pen-maker remained anonymous. The manufactory in Lancaster Street grew rapidly to occupy a nearly 2-acre site built around a square fronting onto four streets.

⁷⁹ Bunce, 1882, p. 19-20. Bunce credits the introduction of Mason and Harrison to "Mr. Heeley, a steel toy maker." James Heeley & Sons made steel toys, pens, and key rings, and were important corkscrew manufacturers. Listed in West, 1830, p.345.

⁸⁰ Bunce, 1882, p.42.

Mason's partnership with Perry was similar to that he formed with Elkington. The sustainability of both businesses, and enduring success of Perryan pens and Elkington electro-plate, was due to the close manufacturer-retailer relationship that Mason formed with both partners. Perry was highly adept at marketing and public relations: "He arranges his pens into genera and species, advertises their beauties and their merits in prose and rhyme, and has thus, not altogether undeservedly, acquired fame and renown, and, we doubt not, profit, to which years ago a mere pen-maker would not have aspired."⁸¹ In describing Perry's success, *The Saturday Magazine* of 17th February 1838 never mentioned Mason. His name became more associated with electro-plating than steel-pens in the public mind, although he remained similarly in the background behind Elkington. Whilst the manufacturing and joint-stock company in Birmingham was restyled Elkington, Mason, & C^o., the subsidiary retail partnership in London remained Elkington & C^o. and the maker's mark that found worldwide renown was E&C^o. However, it is notable that in 1849-50, when they formed a subsidiary supplier-manufacturer partnership to establish the Pembrey copperworks in Wales, a backward integration to provide greater control of the value and supply chains of the electro-plating business, it was styled Mason & Elkington.

In 1966, Pevsner repeated Bunce's assertion that Mason laid out the plans for the various expansions of Newhall Street, asserting, "There is a tradition that it was designed by Josiah Mason, Elkington's manager and protégé."⁸² It is almost certain that Plevins's additions in late 1843-44, and the second expansion and refurbishment in late 1851-52, were based on the systematic series of operations that Mason devised to industrialize the art of electro-metallurgy. It is an indication of the rapid growth and success of the business from 1840-1855 that the manufactory and showroom underwent two substantial expansions and refurbishments in less than fifteen years.

⁸¹ Parker, *The Saturday Magazine*, 1838.

⁸² Pevsner, 1966, p.140.

Nevertheless, when Newhall Street opened in November 1838, Elkington was not a large operation in terms of its variety of products and services compared to some Birmingham metalworkers, like George Richmond Collis & C^o. on nearby Church Street, which had formerly belonged to Sir Edward Thomason. In the late 1830s, Elkington's main business was gilding articles made by retail manufacturers like Collis. A comparison of Elkington and Collis's advertisements of c.1840 is interesting. Collis's trade-card presents a dazzling variety of services and products, which Elkington can only have aspired to. "MANUFACTURERS OF ARTICLES IN THE HIGHEST CLASS OF THE ARTS, IN GOLD, SILVER, PLATED, OR MOLU, AND BRONZE" Collis' advert announces. Besides advertising his business, Collis' offers an open invitation to the public to visit his premises. "STRANGERS OF RESPECTABILITY ARE PERMITTED TO VIEW THE SHOW ROOMS & MANUFACTORY," its header announces. Collis' trade-card of the same date seems more like an invitation to a private view at an art gallery than retail advertising, listing the collection of copies of famous artworks on display there. (Fig.8.)

6. The Discovery of Electro-plating in 1840.

There is no surviving document confirming when the partnership between G.R. and Henry Elkington started, but directories list G.R. Elkington as an optician and spectacle maker at 44 St. Paul's Square in Birmingham until c.1837. Between c.1823-30, Henry was apprenticed to his uncle James, who was G.R.'s father. The cousins' partnership almost certainly began when James retired from business aged 65, c.1835. The surviving records from June 1836 onwards show that the cousins' joint activities were firmly focused on discovering new methods of gilding and plating. In the late 1830s, they enrolled four separate patents between them for 'gilding', 'coating', 'colouring', 'platinizing', 'covering', or 'plating' various metals and their alloys. However, it was Patent No. 8447, which they jointly filed on 25th March 1840, and granted six months later, which first described their "... method or methods of coating, covering, or plating certain metals with silver by use of a solution of silver, and further by the use of a solution of silver in connection with the application of a galvanic current..."⁸³

Although the patent claimed the invention of the process of silvering and gilding *with the application of a galvanic current*, their specification did not use the terms *electro-plating* or *electro-gilding*. Neither of those terms were used by Elkington until after 1844, when they published a description of their silvering and gilding methods, which referred to their new technology as the *electro-process* or *electro-depositing*. It was Alfred Smee, in the 3rd book of the 2nd edition of *Elements of Electro-Metallurgy*, published on 1st July 1842, who first used the terms *electro-plating* and *electro-gilding*.⁸⁴ The 1st edition of Smee's book had also first coined the term *electro-metallurgy*.

The patent comprised four parts describing several distinct operations. However, it was parts two and three of the specification that described the use of solutions of silver

⁸³ Elkington, AAD/1979/3/1/2, p.71.

⁸⁴ Smee, 1843, pp.205-219.

and gold in connection with the application of a galvanic current. These methods were the basis of all their subsequent achievements. Part two began with the chemistry, specifying the recipe for the electrolytic solution: “First, we dissolve oxide of silver in a solution of prussiate of potash (cyanide of potassium) in the following proportion or thereabouts, that is to say, to three pounds of prussiate of potash dissolved in two gallons of water, we add five ounces of silver in the state of oxide, and agitate or boil the same until dissolved. The prussiate of soda may be substituted for the prussiate of potash, but the latter is more convenient. The solution thus prepared is ready for use.”⁸⁵

The specification then describes the application of the galvanic current: “The articles to be coated being first rendered perfectly free from scale or grease, (which we effect by the usual process of cleaning metals,) are then immersed in the solution. ...as in plated wares, we prefer to use the same solution cold, and obtain a thicker deposit of silver by the application of a galvanic current. The methods of producing and applying galvanic currents are various. The most simple with which we are acquainted is contact with a bar of metallic zinc or other electro-positive metal... The articles to be coated, where they have not already received a first coat of silver, must be carefully cleaned; they are then to be placed in the solution of silver attached to and kept in contact with the wire, and the current thus established the deposition takes place.”⁸⁶

After enrolling his 1836 patent, Elkington hired two talented technicians from the Birmingham brass trade to work in what was, in effect, a research and development department: Ogle [Oglethorpe Wakelin] Barratt was a bronze and brass gilder from Birmingham, and Alexander Parkes was a brass and bronze caster, who, in the 1841 census, styled himself an ‘artist,’ but their experience with Elkington allowed both men to subsequently develop careers as professional consulting and experimental chemists. Parkes worked for Elkington until c.1852, managing the firm’s Casting Department

⁸⁵ G.R. and H. Elkington, 1840/1904, p.4.

⁸⁶ *Ibid.*

throughout the 1840s, and then establishing Mason & Elkington's copper-refinery at Pembrey, Wales in 1849-50. Parkes was the most important figure in the early technical development of the art of electro-metallurgy. His electro-plating improvements and development of elastic-moulds is studied later in this chapter.

Ogle Barratt came to the cousins' attention when he raised a legal objection to process of immersion-silvering specified in Henry Elkington's Patent No. 7304 of 4th December 1837. At the time, the immersion-gilding patent was the basis of their business, and they clearly had confident expectations of developing the analogous immersion-silvering process into a commercially viable venture, because Barratt was paid the considerable sum of £1000, not only to withdraw his caveat, but to work at Newhall Street developing Henry's silvering process. It is evident that in the six months between filing and specifying Patent No. 8447, the cousins and their technical team experimented extensively with the artistry required to manipulate the process. The specification provides detailed descriptions of how to obtain variations in the thickness of coating by carefully monitoring the length of time the non-precious metal being coated remains in the solution. The non-precious metals that they experimented with are also specified, and were those most commonly used in traditional methods of gilding and plating: "The above process applies more particularly to the coating of copper and its alloys, as brass and German silver; iron may also be coated by the same method..."⁸⁷

As with the 1836 patent, the prime consideration was the commercial viability of using the various specified processes to plate and gild multiple articles at the same time. This is revealed in a passage in the specification that describes the inherent variables "...where the articles are more than one which is in immediate contact with the wire, so as to keep up the galvanic communication".⁸⁸ With mass-manufacture in mind, they had clearly experimented extensively with the power of the constant batteries, and strength of

⁸⁷ G.R. and H. Elkington, 1840/1904, p.6.

⁸⁸ G.R. and H. Elkington, 1840/1904, p.5.

chemical solutions, because the specification describes how the quality of coating “...will also vary with the force of the galvanic current, or the force being given with the quantity of the work acted upon, and the proportion of silver contained in the solution”.⁸⁹

On 25th March 1840, G.R. and Henry Elkington deposited Patent No. 8447 with the London patent agents Poole & Carpmael. This is confirmed by correspondence between Carpmael & C^o. and Elkington & C^o. Ltd. of 12th and 13th August 1907.⁹⁰ The cousins then had six months, until 25th September 1840, to refine their specification before the patent was granted. When they filed their new process, the chemical solvent in which they had been dissolving the salts of silver and gold was not *prussiate of potash* (potassium cyanide, KCN), but ammoniac solutions. The key chemical component in the specification, the crucial electrolyte, only came to them in the late summer of 1840, well after they deposited the patent, and just as they were preparing the final draft of their specification for Poole & Carpmael. Sometime in late August, only a few weeks before the patent was due to be registered, G.R. Elkington met a surgeon from Birmingham, Dr. John Wright. There is no evidence of how or where they met, possibly James Poole or William Carpmael introduced them at their offices in Old Square, Lincoln’s Inn. Leader claims that “...George Elkington put up at the London hotel which Wright had chosen, and one patent agent was acting for both.”⁹¹

⁸⁹ *Ibid.*

⁹⁰ Elkington, AAD/1979/3/1/2, pp. 170-171.

⁹¹ Leader, 1919, pp.305–326.

7. Dr. John Wright and Elkington & C^o.

John Wright (1808–1844) was born on the Isle of Sheppey in Kent. C.1822, he was apprenticed to Dr. Edward James Shearman (1798-1878) of Market Place, Rotherham, and completed his medical training in Edinburgh, Paris, and London. In 1833, he became a partner in the medical practice of William Strowd Partridge at 122 High Street, Bordesley in Aston-nigh-Birmingham. The invention of Daniell's *Constant Battery* in 1836 encouraged many doctors, like Wright, with an interest in chemistry to experiment in their spare time with applications of electricity, and like countless others Wright probably began electrotyping as a hobby after reading about it's discovery in 1839 in popular scientific periodicals. It is also certain that in his medical practice at Bordesley Wright had patients that worked in the metalwork trades.

The *Chemical Essays* of the great Swedish Pomeranian chemist Karl Wilhelm Scheele (1742-1786) were translated into English by Thomas Beddoes and published by John Murray in 1786.⁹² Sometime in early 1839, John Wright read a passage in Scheele's *Chemical Essays*, which described experimental observations on the properties of the cyanides of gold and silver in a solution of potassium cyanide. Wright subsequently began experimenting with galvanic gilding and plating solutions containing potassium cyanide, and quickly discovered that he could electro-deposit an even and durable coating of gold and silver on copper objects. Wright later told the metallurgist John Percy, whom he met after Percy was elected physician at the Queen's Hospital, Birmingham in 1839, that it was a passage at the very end of Scheele's "Dissertation on Prussian Blue, Part II" that inspired him to experiment with *prussiate of potash* as an electrolyte solution.⁹³ In 1880, Percy recalled, "The credit for the first application of this salt to this beautiful art, and the

⁹² Scheele, 1786/1901.

⁹³ Scheele, 1786/1901, pp.280-290.

appreciation of its value for that purpose, is due to the late Mr. Alexander [*sic*] Wright, surgeon, of Birmingham.”⁹⁴ Despite misremembering his late acquaintance’s Christian name, Percy rebuked the Elkington cousins’ right to the electro-plating patent. “A patent was granted for the use of cyanide of potassium in electro-plating to Messrs. George Richards Elkington and Henry Elkington in 1840, Mr. Wright having sold his invention to those gentlemen on condition of receiving one shilling per ounce of silver deposited. The patent ought legally to have been taken out in the name of the inventor.”⁹⁵

Wright’s wife Mary Ann (*née* Rollason, 1815-1900) had a nephew called Thomas Henry Rollason. As a child, he and his aunt were the first people to witness the results of his uncle’s electro-plating experiments, which he later described: “In 1839, as a schoolboy at King Edward’s College, I was visiting Dr. Wright’s house, 122 High St., Bordesley, and *perfectly recollect* when one morning at breakfast he showed to my aunt, Mrs. Wright, a metal plate he had just silvered and a brass metal chain he had gilt by the electro-process *he had just invented*. He was in high glee at his success.”⁹⁶ Thomas Henry Rollason (1832-1908) joined Elkington & Co. in 1848, and was the manager of the showroom at 25 Church Street in Liverpool during the late-1860s and 70s, eventually becoming Managing Director of Elkington & C^o. Ltd. c.1887. (Fig.9.)

During the last weeks of August 1840, Wright and Elkington entered into discussions about their respective experiments in electro-plating and gilding. Although their methods were the same in principle, it quickly became apparent that Wright used a different electrolyte solution, which yielded a demonstrably richer surface and greater adhesion than the ammoniac solutions the Elkingtons had thus far been experimenting with. Although Wright was a keen amateur electro-metallurgist, he was too busy with his medical practice to establish his own plating and gilding business. So the two men agreed

⁹⁴ Percy, 1880, p.115; Scheele, 1901, p.290.

⁹⁵ Percy, 1880, p.116.

⁹⁶ Williams, June 1978, p.56.

to find an equitable financial and legal arrangement whereby Wright would reveal the secrets of his method. To avoid the considerable cost and effort involved in patenting Wright's electrolyte solution separately, it was suggested that any important variations in Wright's methods should be incorporated into the Elkingtons' specification.

In 1845, when infringements were filed against Patent No. 8447, Elkington consulted the London solicitor Francis Philip Hooper. Correspondence survives in which Elkington recalled his negotiations with John Wright: "When we found the method the same in principle as we were about to specify we decided to embrace the variation, which consisted of a different solution, in our specification, instead of patenting it anew..."⁹⁷ From Wright's perspective, striking a deal to include his electrolyte solution in Elkingtons' patent would not only save him the cost and effort of patenting it, but he must have been aware that any patent he enrolled would almost certainly be challenged by Elkington, at further legal cost to himself, based on their prior use of a galvanic current for plating and gilding and their use of analogous electrolyte solutions to his.

During the negotiations with Elkington, Wright sought advice from his friend Charles Askin, the nickel refiner and German silver manufacturer. Askin was also an associate of Elkington, and it is possible that it was Askin that introduced the two men, rather than Poole or Carpmael.⁹⁸ Three letters survive from Askin to Elkington that suggest he introduced the two men after showing Elkington specimens of electro-plating and electro-gilding by Wright. There is also a proposed partnership agreement between Wright and the Elkingtons, dated 1st September 1840, drafted and witnessed by Askin.⁹⁹ The correspondence reveals the sense of urgency felt by both parties to sign an agreement in time to include Wright's variations into the Elkingtons' specification before the deadline of 25th September.

⁹⁷ Elkington, AAD/1979/3/1/2, p.81.

⁹⁸ Elkington, AAD/1979/3/1/2, p.19, p.45, p.81.

⁹⁹ Elkington, AAD/1979/3/1/2, p.52-53.

The initial partnership proposal was similar in essence to the immersion-gilding partnership with Hardman, Iliffe and Turner, except that any profits from the new electro-process would be equally divided three ways. The Elkington cousins would run the electro-gilding and electro-plating business with “Mr. W. to assist in perfecting any improvement required or suggested and to give a general superintendence to the perfection of the solution etc.”¹⁰⁰ Although Wright and Askin both signed the agreement, the cousins did not, and later that same day a new memorandum was drafted between them, by the terms of which Wright agreed to sell his “new processes of gilding metals.” He received the sum of £300 “upon communication being made” of his gilding solution. A further sum of £500 was payable by the cousins “if they afterwards adopt the process and work it instead of their own process,” with a further £700 “after a trial of six months.”¹⁰¹

When Wright finally communicated his process it was clear that his electrolyte solution in which the oxide or salt of gold or silver was dissolved, ‘prussiate of potash’ (potassium cyanide), was the key chemical component in successful electro-plating and gilding. On 24th August 1840, G.R. Elkington employed John Thomas Cooper (1790–1854), a respected consulting chemist of 82 Blackfriars Road, London, to experiment with, analyze, and verify Wright’s method, and to help redraft the specification for Patent No. 8447 to include Wright’s variations.¹⁰² Whilst other analogous salts worked, such as the ammoniac solutions Elkington had been experimenting with, Cooper confirmed that the adhesion was more efficient with the cyanides. As he wrote in his report after testing Wright’s variation, in a succinct solecism, “The Cyanides with anything that contains gold does the trick instanter.”¹⁰³

¹⁰⁰ *Ibid.*

¹⁰¹ Elkington, AAD/1979/3/1/2, p.57-61.

¹⁰² Elkington, AAD/1979/3/1/2, pp.35-43.

¹⁰³ Elkington, AAD/1979/3/1/2, p.43.

Following the gilding agreement a great deal seems to have been taken forward on trust, indicating that a close relationship quickly developed between Wright and the Elkingtons. The electro-plating agreement was eventually signed over a year later, at the close of 1841, long after Wright had revealed his processes, and his variations had been included in the Elkingtons' joint-patent specification. The electro-plating agreement was signed on 31st December 1841. Wright received "1/- [one shilling] per ounce for each and every ounce of silver used" in the patented process, and a third of any sums received from other manufacturers electro-plating under license to Elkington.¹⁰⁴ By that time Elkington had begun commercial electro-plating operations at Newhall Street, having received their first extensive order to supply electro-plated flatware to a large steamship company. They had also approached fused-plate manufacturers in Birmingham, Sheffield, and London to offer them electro-plating licenses.

The two initial payments totaling £800 enabled Wright to move from Bordesley to a more salubrious address at 9 Great Charles Street, close to the Newhall Street factory. In 1841, Elkington received their first extensive order, supplying flatware and cutlery for the ships of the *Royal Mail Steam Packet Company*. In December of that year, as part of the terms of their electro-plating agreement, Wright agreed to "render his assistance to effectually work the process."¹⁰⁵ Wright spoke and wrote French and German fluently, and gave technical evidence on Elkington's behalf in the lawsuits in Paris over infringements of both the immersion-gilding and electro-plating patents. In 1843, Becquerel observed "M. Elkington, together with M. Wright made a series of experiments on gilding by immersion..."¹⁰⁶ From 1840 until his tragically young death in 1844, aged just 35, John Wright worked as the *de facto* superintendent of chemical operations, overseeing the chemists, gilders, and platers employed to develop electro-metallurgy into

¹⁰⁴ Elkington, AAD/1979/3/1/2, p.69.

¹⁰⁵ Elkington, AAD/1979/3/1/2, p.66.

¹⁰⁶ Becquerel, 1843, p.325.

a commercially viable industrial art. According to their ledgers, Elkington paid Wright £520.13.0 in 1842, £891.17.1 in 1843, and £1195.7.9 in 1844.¹⁰⁷ He dissolved his medical partnership with William Partridge on 24th June 1842, and there is no evidence to suggest that he practiced medicine again from that time onwards. Although he was never a partner in the joint-stock company, under the terms of the agreement he signed with the Elkingtons, Wright stood to become a very wealthy man.

Tragically, Wright died following an accidental slip from his dogcart.¹⁰⁸ A copy of his will, a short handwritten note written in the presence of his lawyer, and witnessed by his sister-in-law Eliza Rollason a year before his fatal accident on 5th June 1843, survives in Elkington & C^o.’s records. Wright’s executors were his brother Thomas, a lawyer in London, and G.R. Elkington. After the accident, on 12th November, a note from Wright’s lawyer, William Spurrier of Spurrier & Chaplin, invited Elkington to his offices to prove the will, in which Wright left everything to his wife Mary Ann. Elkington and Mason agreed a settlement with the young widow of £1000, with an annuity of £350 per annum, in lieu of all previous agreements with her deceased husband.

¹⁰⁷ Elkington, AAD/1979/3/3, pp.20-21.

¹⁰⁸ A dogcart was a high, one-horse, two-wheeled carriage, which was quick and mobile about town, popular with doctors for making house calls.

8. Negotiations with T. J. & N. Creswick, and S. Roberts, Smith, & C^o.

In the summer of 1841, Elkington entered into negotiations with two of the most successful fused-plate firms in Sheffield, T. J. & N. Creswick, and S. Roberts, Smith, & C^o, with the aim of licensing the rights to use the electro-plating process.¹⁰⁹ The Roberts and Creswick families were at the heart of a closely-knit community of Sheffield fused-plate manufacturers. Samuel Roberts II (1763-1848) founded his first partnership, Roberts, Cadman & C^o, with George Cadman (1760-1823) in 1784. Both men had served apprenticeships with Roberts' father, Samuel Roberts I, and inherited the reputation he had built in the plated trade. "About 1765, Mr. Winter and my father joined Mr. Morton and four others in the manufacture of all kinds of plated goods... The plated trade had then become considerable; there were about six houses engaged in it, and almost all kinds of goods had then become made of plated metal which had been made of silver."¹¹⁰ Cadman died in 1823, and, in 1826, Roberts took his nephew Evan Smith, his cousin's son Sidney Roberts, and William Sissons as partners, styling the firm S. Roberts, Smith, & C^o. Roberts nominally retired in 1834, but the firm continued to trade in his name.

The initial contact between S. Roberts, Smith & C^o. and G.R. Elkington was with Evan Smith, who struggled to persuade his uncle to trial electro-plating alongside their successful fused-plate operations. The earliest surviving letter from Smith mentions that Elkington had visited Sheffield in the early summer of 1841, specifically to meet with the two fused-plate firms.¹¹¹ Elkington's partnership with Benjamin Smith III in London was signed in October 1840, and had been operational for about 8-9 months, so by the time he approached the two leading fused-plate manufacturers in Britain he had technically

¹⁰⁹ Bury, 1971, pp.24-25.

¹¹⁰ Roberts, 1849, p.37.

¹¹¹ Elkington, AAD/1979/3/1/6, p.129.

refined electro-plating to a high level, and could show them samples made from Benjamin Smith's beautiful patterns and designs.

As a junior partner, Evan Smith experienced great difficulty persuading his uncle, who, despite retiring, remained the majority shareholder and *de facto* managing director. His uncle felt that fused-plate had been a proven mode of manufacture for a century, whereas electro-plating was a newfangled novelty yet to establish consumer confidence or demand. On 30th June, quite soon after his meeting with Elkington, Smith wrote optimistically, "I think they [my partners] may be induced to speculate in this new mode of plating, provided you were able and willing to adopt a mode of payment less intricate than what you have hitherto proposed."¹¹² He emphasized, "Our object is at present only to use your process as an auxiliary to our present mode of manufacture, nor should we be able to avail ourselves of it to any great extent even should we wish and find it practicable so to do, for a considerable time."¹¹³

Although cordial, there is a reticence in Smith's letters that seem poignant with the frustrations of a junior partner, who is loyal to his family firm, but has seen the future and is powerless to embrace it. In attempting to negotiate terms acceptable to both parties, *and* his truculent uncle, one particularly revealing line suggests, "...as our present term of partnership expires in four years we propose that the sum fixed should be for that period."¹¹⁴ Recent research by Gordon Crosskey has shown that after Cadman died in 1823, and the new partnership was founded in 1826, the joint stock was divided into twenty shares, of which Roberts controlled eleven.¹¹⁵ Even if Smith and the other partners had wanted to begin electro-plating in the summer of 1841, Samuel Roberts II retained a controlling interest and adamantly resisted it. Bury claimed that "old Samuel Roberts" wrote forcibly to his junior partners: "I am persuaded that their mode of plating

¹¹² *Ibid.*

¹¹³ *Ibid.*

¹¹⁴ *Ibid.*

¹¹⁵ Crosskey, 2011.

will inevitably be much less used, than you are anticipating...”¹¹⁶ Smith’s proposed a four-year agreement because after that he would gain greater control. In his second letter of 10th July 1841, Smith enclosed an internal memo detailing his uncle’s objections to either sending articles to be electro-plated by Elkington in Birmingham, or installing electro-plating apparatus at their Eyre Street factory in Sheffield. “You see our principle objection is the idea of sending our goods to Birmingham to be plated, and we think the expense of fitting up the shops necessary for the process, joined to the above sum [£1000 license fee] will considerably exceed any profit we may make by it...”¹¹⁷

In subsequent letters of August 1841, the negotiations were clearly taken out of Smith’s hands. The cordial tone has gone and they are signed formally, not by Smith or any of his partners, but cursorily, S. Roberts, Smith & C^o. They emphasize that they cannot envisage electro-plating as anything more than a speculative side-venture to their fused-plate business, “...our offer to you goes as far as we should speculate, as far as we think with any safety we could speculate.”¹¹⁸ Elkington & C^o. for their part were unyielding over the terms they offered, and, on 8th September 1841, the Sheffield firm ended negotiations. “We may be mistaken, but it is our candid opinion that no house could do business with advantage to themselves (or ultimately to you) subject to such payments (for the present at least and with our present views) we now feel obliged to let the matter rest...”¹¹⁹

The history of the fused-plate trade in Sheffield chronicled by Bradbury in 1912, which was confirmed by Crosskey’s archival research a century later in 2011, shows that it evolved as a closely-knit community of masters and men employed by a small network of firms and partnerships rooted in family ties and intermarriage. Almost all of the Sheffield fused-plate enterprises, over the course of a few generations, increasingly became

¹¹⁶ Bury, 1971, p. 25.

¹¹⁷ Elkington, AAD/1979/3/1/6, p.133.

¹¹⁸ Elkington, AAD/1979/3/1/6, p.137.

¹¹⁹ *Ibid.*

exclusively familial concerns. David S. Landes has shown how the reluctance of family firms to borrow money from external sources and take risks in new ventures often had important consequences for the enduring success of industrial enterprises in the 19th-century. “It made it difficult to view techniques and products impersonally, to sacrifice quality to quantity, to abandon traditional ways when more efficient and profitable tools and methods became available. It placed a premium on security and led to an overestimation of risk in investment decisions.”¹²⁰ This self-limiting, risk-averse attitude towards opportunities for change and expansion, which involved relinquishing a degree of control over key operations to external influences, like license holders or specialist subcontractors, can be powerfully felt in Smith’s tacit frustration with his uncle’s unyielding control over the family business.

According to Bury, who studied S. Roberts, Smith & C^o. (later W. & G. Sissons) company records extensively, letting the matter rest proved disastrous: “The situation deteriorated so rapidly that in May 1843 Smith and Roberts decided to cut their prices by fifty per cent in an effort to dispose of their goods.”¹²¹ When Robert’s son also retired from the firm in 1848, it was restyled Smith, Sissons & C^o., and Smith and William Sissons fully embraced electro-plating. Their partnership lasted until 1858, when Sissons’ sons, William Sissons Jnr. and George Sissons, took over the business, which was restyled W. & G. Sissons.

Elkington & C^o. rapidly took over the market for plated-wares that had been nurtured by the fused-plate firms over the preceding century. Writing in 1912, Frederick Bradbury felt that history had been unkind to fused-plate, which was superseded by electro-plate just as the Great Exhibition shone an unprecedented spotlight onto art-

¹²⁰ David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*, Cambridge University Press, 1969, p.131. See also Landes’s essays: ‘French Entrepreneurship and Industrial Growth in the Nineteenth Century,’ *Journal of Economic History*, IX, 1949, pp.45-61 and ‘Social Attitudes, Entrepreneurship, and Economic Development: A Comment,’ *Explorations in Entrepreneurial History*, VI, 1953-4, pp.245-272.

¹²¹ Bury, 1971, p.25.

manufactures, and art-metalwork especially.¹²² After 1851, a new middle-class mass-market and spectatorship for affordable plated-wares and art-manufactures was avaricious for the luxury of imitation gold and silver, but saw fused-plate as obsolete, and electro-plate as the latest in modern technology. At the Great Exhibition the designs looked ostensibly the same, but the early-Victorians of 1851 felt the aura of technology evoked by the art of electro-metallurgy was as exhilarating, progressive, and iconic of industrial modernity as the grand spectacle of the Machinery Court.

¹²² Bradbury, 1912.

9. Creswick's Candelabrum: The Paradigm Shift.

The history of art cannot be studied separately from the history of scientific understanding that has given rise to industrial development and technological change, and the history of the production of art must be seen in terms of a succession of paradigmatic shifts that occurred when new scientific research radically transformed the materials, tools, and techniques governing particular modes of manufacture. The correspondence from the two Sheffield fused-plate firms to Elkington & C^o. during the summer of 1841 is fascinating because it exposes the paradigm shift that gave rise to the art of electro-metallurgy in progress, as the older scientific, artistic, and industrial community, which was deeply committed to an outmoded mechanical processes of firing and steam-pressing metals to fuse them, was slowly awakening to a paradigm shift that demanded a new theoretical understanding of electricity and chemistry to manipulate the new technological forms of artistry that defined the revolutionary art and science of electro-metallurgy. One cannot separate the *theoria*, *poiesis* and *praxis* of the art and science of electro-metallurgy: Until the end of the 19th-century, the term 'art' was as freely applied to progressive technologies and craft practices as it was to the fine arts of painting and sculpture. Thomas Kuhn has observed that ever since the Renaissance, "...when little cleavage was felt between the sciences and arts, ...the term 'art' continued to apply as much to technology and the crafts, which were also seen as progressive, as to painting and sculpture."¹²³

The paradigm shift that gave rise to the revolutionary new art of electro-metallurgy is perhaps nowhere better exemplified than in a large, extravagant five-branch, tripod-base candelabrum by T.J. and N. Creswick in the Victoria and Albert Museum. (Fig.10.) It is a stamped fused-plate article that has been re-plated using the electro-plating

¹²³ Kuhn, 1996, p.161.

process. Conventionalized acanthuses scroll out of the central baluster-form fluted-column along the five-branches, ending in leaves and fleshy fronds that have all been thickly bright-plated. Its deeply cut surface-decoration, the delicate undulating foliation, and other protruding parts are heavily silvered, and tarnish has collected in its hollows and grooves. It is almost impossible to tell that beneath the electro-plate is fused-plate. (Fig.11.) Crosskey has observed, “Today, in an age of instant illumination at the flick of a switch, it is easy to overlook the importance that candlesticks and other forms of lighting assumed in the 18th-century. Candlesticks were the staple product of the plated industry, which manufactured a bewildering variety of designs.”¹²⁴ Creswick were particularly famed for their grand candelabra, and their impressive domestic showpieces have always been collectible, so when the fused-plate began to look threadbare on this candelabrum, it was deemed worth electro-plating.

It was made c.1840, shortly before James Creswick began negotiating with G.R. Elkington to trial electro-plating alongside his successful fused-plate operations. They met, and began corresponding on 23rd August 1841, but like Evan Smith, Creswick also concluded that the terms of agreement were too demanding for an as-yet unproven mode of manufacture. He too saw it as a speculative auxiliary to fused-plate, and broke off negotiations. With works in Porter Street, Sheffield, James, Thomas, and Nathaniel Creswick could trace their lineage back to Fenton, Creswick & C^o., the second firm to register marks after the opening of the Sheffield Assay Office in 1773. They were one of the only firms still producing articles in fused-plate ten years later, and exhibited fused-plate at the Great Exhibition of 1851, winning a Prize Medal and a special commendation for their Louis XV-style candelabra. That award was almost certainly due to the influence of Robert Younge (1801-1874) as a Juror. Younge was aged 50 at the time of the Great Exhibition, and represented the last vestige of the Sheffield fused-plate trade’s influence

¹²⁴ Crosskey, 2011, p. 299.

over the metalwork Establishment. Descended from Samuel and Charles Younge, he began his career with Younge, Walker, Kitchen, & C^o., and was a Juror in 1851 partly because of his knowledge of fused-plate, but also to ensure that the Sheffield-based trade felt represented.

Even before Mason invested in the partnership, Elkington was unyielding in negotiating licensing terms with the fused-plate firms because he recognized that electro-metallurgy was a revolutionary science, which would bring about a radical transformation in the artistry and commercial manufacture of precious metalwork. As Bunce observed in 1882 “Mr. Elkington, however, had confidence in the improved method, and so had Mr. Mason, who, with his partner, saw clearly that a scientific process, capable of being applied and worked to an indefinite extent, and by self-acting means, must ultimately displace the slow, cumbrous, and costly system of hand-plating, which was dependent upon the skill and quickness of a limited number of workmen.”¹²⁵

Writing as the Great Exhibition closed in October 1851, Harriet Martineau wrote: “Formerly, we bought our plated candlesticks, and table-forks, and mustard-pots, and inkstands from Sheffield. There was a small choice of patterns; very rarely anything new – seldom anything remarkably beautiful. The few who could spend money largely – princes and peers, and half-a-dozen wealthy commoners – might go to Rundell and Bridge, and indulge their taste for works of art in gold and silver; but in plated goods there was little beauty, little variety, and very poor wear.”¹²⁶ Commissioned by Charles Dickens’ for *Household Words*, Martineau was giving a public voice to everybody with taste but modest means. “...we of the middle classes, who cannot afford to buy silver plate, were annoyed to see the copper peeping through the edges and prominences of our plated candlesticks, forks, and sugar basin; and too often a bend or a dent here and there, showing that there was as little wear in the metal and its solder in one way, as in its silver covering in

¹²⁵ Bunce, 1882, p. 47.

¹²⁶ Martineau, 1851, p.114.

another.”¹²⁷ Martineau reported that “About thirty other manufacturers in England are licensed by him [Elkington] to use his process; and there are not more than two houses now which maintain the old Sheffield method of laying silver on copper, and using the old soft tin solder. That any such houses remain, may be very well, because they turn out their work cheap, and keep down the price of the superior article. By the time they also have recourse to the new method the patent will have expired, and competition will keep prices reasonable.”¹²⁸

In 1912, Bradbury was eager to reevaluate fused-plate as antique silver. He propagated the prefix ‘Old’ Sheffield Plate, and began his revisionary history with apophasis. “It is not the object of this work to imbue the public with any exaggerated ideas of either the pecuniary or artistic value of Old Sheffield Plate,” he said, “but one feels tempted to state that this ware varies far less in excellence of workmanship than any of the contemporary crafts.”¹²⁹ Such rhetorical devices were always a necessary marketing ploy in the plated-trade, whether promoting 18th-century fused-plate or 19th-century electro-plate. Both were highly technical imitative arts devised to make non-precious metals look like solid silver, which needed to counter snobbish detractors, and convince paying customers that articles in copper or cupronickel, whatever method they were plated with, were comparable in design and quality perception to solid silver.

In 1841, a year after the Elkingtons took out their joint-patent, Pugin wrote a polemical dismissal of silversmiths, aimed largely at Sheffield fused-platers: “Silversmiths are no longer artists; they manufacture fiddle-headed spoons, punchy racing cups, cumbersome tureens and wine-coolers; their vulgar salvers are covered with sprawling rococo, edged with a confused pattern of such universal use that it may be called with propriety the Sheffield eternal. Cruet-stand, tea-pot, candlestick, butter-boat, tray, waiter,

¹²⁷ *Ibid.*

¹²⁸ *Ibid.*

¹²⁹ Bradbury, 1912, p.52.

tea-urn, are all bordered with this in and out shell-and-leaf pattern, which, being struck in a die, does not even possess the merit of relief. Like every thing else, silver-work has sunk to a mere trade, and art is rigidly excluded from its arrangements.”¹³⁰

When Bradbury rebranded fused-plate as ‘Old’ Sheffield Plate, and published his idealized history of the genre, it was precisely with the object of persuading the public with ‘exaggerated ideas’ of the ‘pecuniary’ and ‘artistic’ value of the surviving examples. By 1912, articles of fused-plate that had survived the ravages of time and vagaries of taste were becoming collectible, and Bradbury set about reifying “the Sheffield eternal.” Many more articles, of course, had already gone to the silver breaker, or, like Creswick’s candelabrum, had been remedially electro-plated, because someone ‘of the middle classes’ had been “annoyed to see the copper peeping through the edges and prominences” of their ‘old’ fused-plate.

¹³⁰ Pugin, 1841, p.32-33.

10. A New Profession: Electro-Platers and Gilders.

Although, Elkington & Co. recruited most of their staff from traditional metalwork trades, many of the early electro-platers and gilders, who became colloquially known as ‘dippers,’ were recruited from other disciplines, notably druggists and chemists with the specialized knowledge to prepare electrolytic solutions and operate constant batteries. On 16th May 1846, Joseph Brown, an electro-plater and gilder, employed by John Harrison at his Norfolk Works, 116-122 Scotland Street in Sheffield, wrote to Elkington & Co. “Since last July I have been engaged with Mr Harrison of Scotland-street Sheffield in the situation which Mr Walker occupied as Electro-plater & gilder or I am as Manufacturer of Chemicals in that department and superintending the whole. My time is occupied in preparing preparations for solutions Scyanuret of Pottassium [*sic.*]¹³¹ working the batteries and the preparations I have obtained in great purity being thoroughly free from ferruginous matter.”¹³²

Having failed to agree terms with the two leading fused-plate firms in Sheffield in 1841, it is important to note that the earliest licenses taken out by Sheffield firms in the summer of 1843 were businesses that were not involved in the manufacture of fused-plate. John Harrison took out a license to electro-plate and gild on 13th June 1843,¹³³ and sent his employee George Walker to Birmingham to learn the process at Newhall Street. Harrison began electro-plating in Sheffield from July 1843. After two years, Walker left Harrison’s employment to form a partnership with Samuel Coulson. Walker & Coulson agreed their own license with Elkington on 30th July 1845.¹³⁴

Walker later claimed he had learnt electro-plating from John Wright, and it’s intriguing to think that the inventor of the electrolyte was involved in the technical

¹³¹ ‘Cyanuret of potassium,’ after the French *le cyanure de potassium*, is potassium cyanide (KCN).

¹³² Elkington, AAD/1979/3/1/6, pp.268-269.

¹³³ Elkington, AAD/1979/3/1/6, p.237.

¹³⁴ Elkington, AAD/1979/3/1/7, p.51.

training of the first generation of electro-platers at Newhall Street in the early 1840s. In 1853, Walker formed a new partnership with Henry Hall, styled Walker & Hall, which became the most successful electro-plating firm in Sheffield. Walker & Hall operated a large works was at Howard Street, Sheffield, with a London showroom at 45 Holborn Viaduct. During the latter half of the 19th-century, as the commercial growth of the art of electro-metallurgy mapped the industrial and economic growth of Britain and the spread of its imperial empire, Walker & Hall opened showrooms in Liverpool, Manchester, Leeds, Glasgow, Edinburgh, Newcastle, Cardiff, Belfast, Hull, Bristol, Melbourne and Adelaide in Australia, and Cape Town in South Africa. In 1920, they converted into a limited liability company under the style Walker & Hall Ltd., and in 1963 merged with Elkington & C^o. Ltd. and Mappin & Webb Ltd. to form British Silverware Ltd.

It is interesting that Harrison's replacement for Walker, Joseph Brown, described himself as an 'Electro-plater & gilder,' and 'Manufacturer of Chemicals.' In 1846, the profession was in its infancy, and Brown typified the new type of specialist artisan that electro-plating brought into the metalwork trades. His letter to Elkington was soliciting work. Unhappy in Harrison's employment, he was attempting to become a supplier of 'superior quality' jewellers' rouge, also known as 'plate powder,' a metal polishing compound made to his own chemical recipe.¹³⁵ Brown's handwriting is neat and literate, and although there are numerous spelling and grammatical errors, he is clearly scientifically educated, but most interestingly, Brown reveals that he was trained not as a metalworker but as a druggist. "Having served my apprenticeship to one of the most respectable druggists in Sheffield and a desire for chemistry theoretically and practically has enabled me to conduct this department in such a manner is progress is rapidly advancing in Sheffield, to such [*sic*] and extent that I feel here long a great portion of the

¹³⁵ *Jewellers' rouge* is a polishing compound made of ferric oxide (iron (III) oxide – Fe₂O₃). It is applied with a *rouge cloth* or buffing wheels to precious metals, copper, nickel, and their alloys, to achieve a highly lustrous finish.

Sheffield manufacturers will enter into the merits of it. Our plateing [*sic*] (not one article from a Knife Handle to a Tea Urn) is as smooth as glass, the gilding in ritchness [*sic*] of colour is dasling. [*sic*].”¹³⁶

By 1840, G.R. Elkington had 25 years experience in the metalwork trade, but his existing business was primarily gilding for the trade. As a specialist he had little control over the key determinants of supply and demand. To exploit their patent, the partners had to overcome two major problems. Firstly, the introduction of electro-plate was dependent upon persuading established plating and gilding businesses of the uncertain opportunity cost of a license, equipment, and technical training. Secondly, Elkington were dependent upon wholesale distributors and retailers to market the benefits of electro-plate over-and-above fused-plate, to the public. With durables like flatware and hollowware it could take several years of domestic use before the main advantage of electro-plate over fused-plate, which was its durability, became apparent. The short-term problem was that the retail trade was heavily committed to selling fused-plate because of the large amount of stock they already held. The vested trade interests did not want to risk writing off the value of their inventory of fused-plate before they could dispose of it by creating a sudden public demand for electro-plate. However, Brown’s letter reveals that by 1846, many Sheffield firms were realizing that electro-plating was not an auxiliary to their business, but was ‘rapidly advancing’ and superseding fused-plate. “Latterly by Mr Harrison’s desire I have solicited the Sheffield Manufacturers for their plateing [*sic*] and gilding...” wrote Brown. “In the course of conversation several have desired to know your terms of granting license and the expense of solutions bath, batteries, etc.”¹³⁷ Brown eventually established his own electro-plating business at 229 Rockingham Street, Sheffield, using the maker’s mark “J BROWN over SHEFFIELD” from 1849-67.¹³⁸

¹³⁶ Elkington, AAD/1979/3/1/6, pp.268-269.

¹³⁷ *Ibid.*

¹³⁸ Joseph Brown, 1864.

11. Alexander Parkes's Elastic-moulds.

Having assisted in developing the Elkingtons' joint patent in 1840, on 29th March 1841, Alexander Parkes took out his own patent, No. 8905, for the *Production Of Works Of Art In Metals By Electric Deposition*, which specified a method of electro-plating delicate and intricate works of art. Previously, non-conductive articles could only be coated with metal by brushing their surface with 'plumbago,' which was powdered graphite. The process was invented, but not patented, by Robert Murray (1798-1857), a scientific instrument-maker and chemist of 122 Regent Street, who supplied many of London's early electrotypists and photographers with chemicals and equipment. Applying plumbago had obvious limitations when preparing finely detailed surfaces or delicately formed structures. Parkes's process involved electro-plating an object previously dipped in a solution of phosphorus contained in bisulfide of carbon, and then in nitrate of silver. Further to this patent of 1841, Parkes enrolled a further patent, No. 9807 of 1843, for an improved method of electro-plating fine and fragile objects, such as flowers. Elkington & C^o. subsequently acquired the rights to both patents.

Once it was possible to silver and gild delicate forms, Parkes turned his attention to improving the elasticity of mould making materials to cast more intricate electrotypes, like busts and statuettes, and natural objects. The composite material he invented was a mixture of caoutchouc (India-rubber), glue, and treacle. Parkes's new 'elastic moulds' enabled complex, intricate, and heavily undercut ornamental and figurative forms to be cast, often in one piece. They answered the demand for mould making materials with greater plasticity, and proved especially useful in the manufacture of foliated and floriated forms that were copied directly from nature and applied as motifs or mountings in designs of organic naturalism, which was in vogue during the 1840s. The fashion for stylized natural forms as ornamental designs stemmed from the emergent creed of

scientific naturalism in the 1840s, fuelled by scholarly and popular interest in natural history. Parkes's elastic-moulds, combined with the limitless ductility of the electrotype process to shape metal forms and motifs, meant that sculpture, silverware, and *objets de vertu* could be copied, regardless of how intricate or complex they were, which met the demands of the antiquarian market for reproductions of artworks and artifacts of art historical or archaeological interest.

No article made by Parkes for Elkington & C^o. in the 1840s was ever signed, marked, or documented as his artwork. The only maker's mark they bear is E&C^o. Throughout Elkington's history only a few artists' signatures were published alongside their maker's mark. However, a set of three electro-gilt vases is known to be Parkes's design. They were electrotyped in copper and electro-gilded c.1841, and are exquisitely detailed. They are also different sizes, like examples of rescaling. Elkington exhibited one of them at the Birmingham Exhibition in 1849.¹³⁹ Two of the vases are currently on display on either side of Exhibition Road in both the Science Museum and V&A. Their separation represents Parkes's career trajectory, from when he was first employed by Elkington in the late 1830s and early-1840s and styled himself an 'artist,' to when he left c.1852 and called himself a 'chemist.' One vase represents Parkes's contributions to the science and the other to the art of electro-metallurgy, and the public is expected to see each vase differently, scientifically and artistically, mutually exclusively of each other. Together and apart, they epitomize 'the two cultures' that C.P. Snow diagnosed in 1959,¹⁴⁰ which was embodied in the reorganization of the two museums into independent institutions on 26th June 1909. (Fig.12.)

Whilst supervising the Casting Department at Newhall Street, Parkes's experiments c.1843-1846, led to another important patent of 25th March 1846, for

¹³⁹ Elkington, AAD/2003/4.

¹⁴⁰ Snow, 1959/2012.

chemical processes that produced changes in the qualities of caoutchouc, often called India rubber (natural rubber latex from the Pará rubber tree, *Hevea brasiliensis*) and gutta-percha (a rigid natural latex made from the sap of a Malayan tree, *Palaquium gutta*), and their compounds.¹⁴¹ Parkes's process was analogous to vulcanization, which had been discovered and patented by Thomas Hancock on 21st November 1843. It was, in effect, a cold vulcanization that removed the major production cost of heat, and obviated the use of noxious sulphur. Using Parkes's method, caoutchouc and gutta-percha could be easily shaped and coloured, and he called his new quasi-vulcanized material 'converted rubber.'

In 1857, Hancock, who, with Charles Macintosh, had founded the British rubber industry, wrote that because he had no prior experience of rubber manufacture Parkes approached the material solely as a chemist: "His process is an elegant and simple one, and consists in immersing the rubber in a solution of the chloride of sulphur in bisulphurate of carbon, or pure coal naphtha cold, no heat being required; a thin sheet of rubber is by this means "converted" in a minute or two, and when dry is found to have acquired the properties of insolubility at ordinary temperatures, and be insensible to cold. The process is capable also of producing the horny state, similar to hard vulcanizing."¹⁴² Hancock assisted Parkes in his experiments and specification in 1845-46, and Charles Macintosh and C^o. acquired rights in the patent. Hancock and Parkes's collaboration had a major bearing on the subsequent development of Macintosh's rubber products, and on Parkes's subsequent experiments, which led to the discovery of Parkesine, the world's first thermoplastic. Hancock subsequently developed and patented various applications of Parkes's process. He realized that articles of converted rubber could be "rendered as hard or harder than ivory, and capable of being wrought with tools and highly polished... The process of Mr. Parkes enables us to give to vulcanized articles colours of every tint, and a

¹⁴¹ Parkes, 1846/1856.

¹⁴² Hancock, 1857, p.123.

delicately smooth surface.”¹⁴³

William Montgomerie was the first European visitor to Malaysia to appreciate the qualities of gutta-percha. He introduced it to the Royal Society of Arts in 1843. Its low coefficient of thermal expansion and contraction made it ideal for mould making, because when cooled and hardened its dimensions were identical to those when it was moulded hot. Its resilience and stability underwater also meant that, besides insulating undersea telegraph wires, it could be immersed in aqueous plating or gilding solutions, and meant moulds of great delicacy and intricacy could be used for electrotyping. In 1845, Charles Hancock (Thomas’s younger brother), backed by the Irish manufacturing chemist Henry Bewley, and the financier Samuel Gurney, established The Gutta-Percha Company in West Ham, and made commercially processed gutta-percha available in Britain. It is difficult to ascertain when Elkington & C^o. began to replace caoutchouc with gutta-percha for mould making. An article in the *Illustrated Exhibitor* of 1852 lists dozens of applications of gutta-percha but does not mention moulds,¹⁴⁴ and, until the 1860s, Elkington used Parkes’s caoutchouc elastic-moulds rather than gutta-percha.

In 1845-46, when Hancock and Parkes were working together, Elkington’s focus was the commercial manufacture of electro-plated flatware, cutlery, and hollowware, and the experiments with caoutchouc were not only to improve mould making materials, but also to find cheaper, more sustainable materials than ivory, bone, and horn, which were used extensively as handles on knives, forks, and spoons, as well as tea and coffee pots. By the last quarter of the 19th-century, Elkington’s sales catalogues offered flatware and cutlery in a huge variety of patterns with a choice of different materials for the handles, of varying affordability: silver, sterling silver, electro-plated, African ivory, or best quality Xylonite. Xylonite was the world’s first commercially-viable thermosoftening plastic, the basis for which Parkes created in 1856, not long after he left Elkington & C^o. Originally

¹⁴³ Hancock, 1857, p.124-125.

¹⁴⁴ *Illustrated Exhibitor*, 1852, pp.18-23.

he called it 'Parkesine,' and in 1866 he established the Parkesine Company with Daniel Spill as his works manager. Parkes's company failed in 1868, but Spill took the stock, coined the trade name Xylonite, from *xylon*, the Greek word for 'wood,' and formed the Xylonite Company in 1869. By 1874 that business had also failed, but Spill continued to make Xylonite and established Daniel Spill & C^o. He took on Levi Parsons Merriam and his son Charles, who made combs and imitation jewellery, as new partners, and, in 1877, the company was restyled the British Xylonite Company, and finally began to prosper. The British Xylonite Company was the first British firm to commercially manufacture plastics successfully, and by 1902 employed over 1000 people. Xylonite was marketed as a substitute for ivory, horn, and tortoiseshell, and had a similar aura of technological modernity to electro-plate. It was marketed as a perfect imitation of the real thing in a high quality, durable material. During the late-19th and early 20th-centuries the British Xylonite Company supplied Elkington's handles. "The Xylonite used by Elkington & C^o. is the finest procurable, almost indistinguishable from Ivory, and very durable."¹⁴⁵

Parkes's caoutchouc experiments were not made at Newhall Street, but at the firm's Brearley Street premises. No document survives stating when Elkington & C^o. acquired Brearley Street. It is a shadowy place that looms large in the company's history because it generated so much of the firm's profits, but only one image of the works is known, which appears in several sales catalogues. (Fig.13.) Bunce attributes its acquisition, and the firm's commercial focus on flatware and cutlery, to Mason.¹⁴⁶ "But Mason saw clearly that for a considerable time the business must largely depend upon productions of a humbler description, in common use, capable of being supplied in any quantity equal to the demand, and of being sold at a comparatively cheap rate. This led to the establishment of a manufactory in Brearley Street, Birmingham, for the production of electro-plated spoons and forks."

¹⁴⁵ Elkington & C^o. Ltd., c.1930, "Table Cutlery," p.18.

¹⁴⁶ Bunce, 1882, p.48:

12. Henry Beaumont Leeson's Patent.

On 1st June 1842, Elkington acquired Henry Beaumont Leeson's Patent No. 9374. Its voluminous content ran to 28 pages and 12 diagrams, and specified several key improvements to the art of electro-metallurgy. Leeson had experimented with 430 different electrolyte solutions. He was Assistant Lecturer in Chemistry and Forensic Medicine at St. Thomas's Hospital in Southwark, and devoted his spare time to experimenting with electro-metallurgy. His specification read more like a journal of experiments rather than a coherent patent, and claimed methods of depositing a huge array of metals and alloys, including platinum, palladium, rhodium, and iridium. It is remarkable that he managed to procure so many metals and alloys. In 1844, Elkington considered taking out lawsuits against various people that were infringing upon Leeson's patent, and because of its complexity consulted William Robert Grove (1811- 1896) for his legal opinion. Grove was the leading legal scientific expert on electrochemistry. In 1841 he became the first Professor of Experimental Philosophy at the London Institution, but took up professional practice at the bar in 1846. Grove concluded that Leeson's patent "...contained so many alleged inventions that it would be dangerous to rest a case on it, and that while many of Leeson's statements were such that chemists might know and discover by experiment, they were not such as a competent workman could apply without many unsuccessful trials."¹⁴⁷

Nevertheless, Elkington realized that Leeson's specification contained a few ideas that were potentially important improvements to the commercial and artistic application of electro-plating. Section nine described an important preparatory technique that was analogous to the immersion of copper articles in nitrate of mercury used in mercury-gilding, which also became known as 'quicking' or 'quickening.' This involved immersing

¹⁴⁷ Elkington, AAD/1979/3/1/4, p.11.

articles in a solution of “cyanide of potash and mercury” to clean the surface of copper and its alloys, including the widely used cupronickel German silver, which improved the adhesion of electro-plate. Quickening made the electro-plating far more durable, which was key to convincing the public it was more robust and enduring than fused-plate. Section six of Leeson’s specification also proved commercially important. It recommended gently agitating either the article receiving the deposit, or the electrolytic fluid, to obtain a more even deposition, which produced a richer, smoother surface to the plating, and lowered production costs by lessening the hand finishing required.

Leeson’s patent typifies the intellectual ‘land grabbing’ that patent agents, like Poole & Carpmael, encouraged amidst the scientific and industrial discoveries of the 1830s and 1840s. In June 1842, backed by Mason’s money, Elkington felt compelled to acquire Leeson’s patent simply because of the huge number of potential electrolyte solutions it listed. Acquiring it precluded their use in rival patents, and lessened the scientific opportunities, and legal leeway available to anyone attempting to electro-plate without a license. For a short time after he acquired the patent, Elkington employed Leeson as a consultant chemist, and, on 25th March 1843, encouraged Leeson to obtain a Memoranda of Alteration to his patent, which crucially and controversially substituted the word “sulphite” for “sulphate.”

13. The Magneto-Machine.

Thomas Prime's "GENERAL PLATING MANUFACTORY" was on Northwood Street in Birmingham. In the 1843 edition of George Shaw's popular *Manual of Electro-Metallurgy* is an advert for his "PATENT MAGNETO PLATE WORKS."¹⁴⁸ It proudly announces, "The deposition is effected by Magnetic Machinery of the most perfect description, certain and uniform in operation, an effect that cannot be obtained by the Galvanic Battery and other agencies employed in the Electro mode." The advertisement concludes, "T.P.'s Establishment has been visited by gentlemen of high scientific attainments, who have expressed their decided opinion of the beauty and superiority of the Magneto Process and its successful application to manufactures." The gentlemen that Prime was referring to were the metallurgist John Percy, then a physician at Queen's Hospital in Birmingham, and Michael Faraday. In 1880, John Percy recalled, "I have often seen electro-plating with silver thus carried on by Mr. Thomas Prime of Northwood-street, Birmingham; and in 1845 I conducted Mr. and Mrs. Faraday to Mr. Prime's works, where for the first time that great philosopher saw his discovery of the magneto-electric current applied to the electro-deposition of silver. I shall never forget the sparkling delight which he manifested on seeing this result of his purely scientific labours rendered subservient to a beautiful art and to the advantage of others."¹⁴⁹

Prime was the first to apply a magneto-machine to commercial electro-plating, which proved a key development in the mass-manufacture of electro-plated flatware and cutlery. It was based on the patented design of John Woolrich, a lecturer of chemistry at the Royal School of Medicine in Birmingham, and his 23 year-old son John Stephen Woolrich (1821-1850). Patent No. 9431 was the first to specify the use of a magneto-machine for electro-plating, and was filed solely in the son's name on 1st August 1842,

¹⁴⁸ Shaw, 1844, endpapers and 'Magnetic Machinery,' pp.55-65.

¹⁴⁹ Percy, 1880, p.49.

when he was only 21 years old. Woolrich Jnr. later claimed that he and his father had been experimenting with electro-metallurgy together since c.1834, and had worked on the magneto-machine together. John Woolrich Snr. died, aged 53, just eight months later on 20th April 1843,¹⁵⁰ and the patent was almost certainly filed in his son's name because he knew he would not live to benefit from the 14-year term of the patent. Woolrich Jnr. was granted the patent in the summer of 1842, but it wasn't until 1844 that Prime developed and began operating the first commercial machine, which differed from Woolrich's original specification.

Bury claimed that Woolrich Jnr. resented the cousins, and "...was always a thorn in the Elkingtons' flesh."¹⁵¹ However, correspondence reveals that Woolrich Jnr. approached them on the 24th January 1843, shortly before his father died, and ten months before he approached Prime.¹⁵² Like John Wright, he asked Charles Askin to act as an intermediary and advisor. In February 1843, G.R. Elkington was taken by Askin to see a prototype of the magneto-machine working. However, Elkington left unconvinced, feeling that without a lot more development the machine was less efficient and more costly to run than batteries for commercial plating. Woolrich Jnr. promised to build a bigger machine, which Askin hyped as "the Leviathan magnet," to convince Elkington of its potential.

Then, on Saturday 1st April, Woolrich wrote and offered to sell his patent for £15,000, which was a colossal sum, giving Elkington "until Tuesday next to decline or accept my offer." Whether such naïve bravado was out of desperation because his father was gravely ill, or just an ill-considered April Fool's joke, it was given short shrift by Elkington, who declined the offer and fumed to Askin, "The real value of the process is yet unproved, while the sum demanded is very large..." Elkington reminded Askin that

¹⁵⁰ "Obituary," *Gentleman's Magazine*, 1843, p.220.

¹⁵¹ Bury, 1971, p.20.

¹⁵² Elkington, AAD/1979/3/1/4, p.37.

he had twice asked for an experiment “upon a considerable scale under our own direction” to see if “we are justified in hazarding a fortune.”¹⁵³ However, a more threatening note was struck in Elkington’s suggestion that Woolrich’s patent may actually be an infringement of his (i.e. Leeson’s) patent. Elkington broke off negotiations in October 1843, shortly after Woolrich opened discussions with Prime.

When George Dowd wrote about the Newhall Street factory in the *Penny Magazine* of 1844, Elkington was still using a modified, multi-celled version of William Hyde Wollaston’s battery. Five years later, speaking at The Exhibition of Manufactures and Art Birmingham in 1849, Elkington stated, “...he had up to that time never been induced to give up the ordinary battery in favor of magnetism or any other suggested improvement.”¹⁵⁴ However, Elkington’s concern was not only about the efficiency of the machine, but whether Woolrich’s magneto-process infringed his patent rights. He sought legal counsel from Francis Philip Hooper of Watkins & Hooper, attorneys, at 11 Sackville Street, London, who consulted William Grove. Elkington’s contention was that his patent claimed the use of electricity for plating and gilding in general, especially in connection with particular or analogous salts, so, if Woolrich used any of the 430 analogous salts specified by Leeson, for electro-plating or gilding with his magneto-machine it was an infringement. However, the silvering solution specified in Woolrich’s patent was “sulphite of silver dissolved in excess of sulphite of potash,” and the “gilding liquor” was “oxide of gold dissolved in excess of sulphite of potash,”¹⁵⁵ which were not, initially at least, specified by Leeson.¹⁵⁶

Silver can be successfully electro-deposited using cyanide, sulphate, sulphite, or hyposulphite solutions. Apart from Wright’s cyanides, the most practical means of electro-plating uses an analogous solution containing sulphite or hyposulphite of silver.

¹⁵³ *Ibid.*

¹⁵⁴ Byrne, 1864, p.530.

¹⁵⁵ *Patents for Inventions*, 1862, p.45.

¹⁵⁶ Percy, 1880, p.49.

Remarkably, neither sulphite nor hyposulphite were mentioned among the 430 solutions specified in Leeson's all-embracing patent. To counter any objection to the "magnetic apparatus," Woolrich had cleverly specified the use of a sulphite solution. Leeson's Memoranda of Alteration, sponsored by Elkington, was a sly, retrospective attempt to invalidate Woolrich's patent. The real improvement was "...the employment of a magnetic apparatus in combination with metallic solutions"¹⁵⁷ rather than the voltaic chemical reaction of a constant battery. It was clear that although far more development was needed, the magneto-process could greatly improve the scale of production and reproduction of the art of electro-metallurgy.

Henry Elkington finally obtained the rights to use Woolrich's patent on 26th May 1845, after Woolrich sold his patent to Askin's business partner, Brooke Evans. Evans & Askin acquired the rights to Woolrich's magneto-process because it had the potential to facilitate the mass-manufacture of electro-plated flatware, cutlery, and hollowware, which, as Britain's leading German silver (cupronickel) suppliers, was of enormous benefit to their trade. Henry Elkington agreed to pay Evans £100 up front and £400 per annum for the remaining term of the patent.¹⁵⁸

Elkington & C^o. made several improvements to Woolrich's design before they put it into commercial operation in 1847. In the late 1840s, Elkington's employee William Millward improved the magnet design, and the firm obtained the rights to Edward Augustus King's 1845 patent for improving the armature that revolved in front of the magnet, which greatly increased the rates and scale of deposition. The magneto-process made it possible to electro-deposit multiple articles in large vats simultaneously, not only in silver and gold, but also copper and other metals. Woolrich's patent also specified the use of his "magnetic apparatus" with a "coppering liquor" comprising "carbonate of

¹⁵⁷ *Patents for Inventions*, 1962, p.45.

¹⁵⁸ L. B. Hunt, "The Early History Of Gold Plating: A Tangled Tale Of Disputed Priorities," *Gold Bulletin*, Volume 6, No. 1, 1973, p. 26.

copper dissolved in excess of sulphite of potash,”¹⁵⁹ which made electrotyping large-scale works of art possible.

Woolrich later obtained a license from Evans to use the patent he’d enrolled, and established a Magneto-Plating and Gilding Works on Great Charles Street, but he died, aged only 29, on 27th February 1850. In 1853, John Percy revealed that Leeson’s Memoranda of Alteration was entered on 25th March 1843, a month after Woolrich had enrolled his specification, and was a deliberate, and, in Percy’s view, scurrilous ruse to invalidate Woolrich’s use of sulphite solutions. “But for sulphite of silver, Woolrich’s invention would have been of no avail; for Elkington had previously obtained patents for the electro-deposition of silver by means of the voltaic current, and for the use in connection therewith not only of the alkaline cyanides as solvents of silver, but of about 430 additional salts!” Percy adds sourly in a footnote: “The patent was granted to Henry Beaumont Leeson, and became the property of Elkington, who had secured Dr. Leeson’s professional services for the purpose. A Memorandum of Alteration was enrolled by the patentee, dated March 25, 1843, *i.e.* after the date of Woolrich’s patent, in which the terms sulphate of silver and potassa were altered into sulphite of silver, sulphite of silver and soda, and sulphite of silver and potassa. In what other country would such an alteration have been allowed? Elkington subsequently purchased Woolrich’s patent. Such a patent as that granted to Dr. Leeson would not be granted since the Patent Law Amendment Act, 1852.”¹⁶⁰

However, it was an American named Edward Augustin King, who filed for British Patent No. 10,919 on 4th November 1845, who developed the essential component that made the magneto-machine commercially viable. It was enrolled on 2nd May 1846, and although it was taken out in King’s name, it specified the invention of John Wellington Starr, a brilliant young electrician from Cincinnati, who had developed

¹⁵⁹ *Patents For Inventions*, 1962, p. 45.

¹⁶⁰ Percy, 1880, p.49,fn.

an incandescent electro-magnetic light. Along with another associate, John Milton Sanders, Starr and King formed a joint stock company in Ohio, and came to London to secure a British patent and develop Starr's invention. Starr went to Birmingham to find a manufacturer to commercially develop his prototype electric light, and established a relationship with the lamp-maker John Bolton. However, he tragically died of tuberculosis on 21st November 1846 in his lodgings at 29 Newhall Street, Birmingham aged just 25.¹⁶¹ Bolton paid for his burial. Whether Starr met Woolrich, Prime, or Elkington in Birmingham is unknown, but his invention was widely publicized in a detailed article titled "King's Patent Electric Light" in *The Mechanics' Magazine* of 25th April 1846.¹⁶²

In 1877, the science writer William Mattieu Williams (1820-1892) revealed that Starr had gone to Birmingham to construct a magneto-machine to power his light.¹⁶³ In 1845, Williams was as an electrotyper and electrical instrument maker in Hatton Garden, and had assisted Starr's experiments by constructing a large battery. Williams recalled, "...the result of our battery experiments was to convince Mr. Starr that a magneto-electric arrangement should be used as the source of power in electric illumination; and that he died suddenly in Birmingham in 1846, while constructing a magnetic battery with a new armature which, theoretically, appeared a great improvement on those used at that date." On 30th April 1846, King applied for a separate patent for the improved magneto-machine designed by Starr and Sanders. Patent No. 11,188 was specified on 30th October 1846, a month before Starr died, and it was this patent that Elkington obtained.

Within months of securing the rights to Woolrich and King's patents, Elkington had constructed a gigantic magneto-machine capable of mass electro-plating flatware, cutlery, and hollowware, or electrotyping life-size copper busts and statues. By the early 1850s, they were styling themselves 'bronzists,' as well as electro-platers. Elkingtons'

¹⁶¹ Wrege, 1976, pp.102-120.

¹⁶² Robertson, 1846, pp.312-316.

¹⁶³ Williams, 1877, pp.459-460.

magneto-machine was first depicted in an engraving in the *Illustrated Exhibitor and Magazine of Art* in 1852, which shows how big it was. (Fig.14.) A year later, an engraving in James Sheridan Muspratt's *Chemistry, Theoretical, Practical and Analytical*, showed it in the main plating-shop at Newhall Street. (Fig.15.)

14. Millward's Bright-plating and the Use of Plating Additives.

When the Millward family agreed to work for Elkington in March 1837, the firm acquired the services of William Henry Millward, one of the trade's most talented and experienced journeymen gilders. From 1837, Millward operated the immersion-gilding process until 1840, when he also learnt the new electro-gilding and plating methods. In 1847, Millward discovered and patented an important improvement that lowered the production costs of mass manufacturing electro-plated flatware and hollowware. It was a timely discovery that reduced the intensive hand-labour involved in finishing intricate ornamental motifs, which was especially useful for the naturalism and Rococo revival designs that were popular in the 1840s and 1850s. Millward's Patent No. 11,632 of 23rd March 1847 was the first to specify the use of a plating additive in the electro-plating process. Carbon disulfide (CS_2), then known as 'bi-sulphuret of carbon,' became widely used in alkaline silver cyanide solutions to produce a highly polished silver surface known as 'bright-plating.'

Millward made his discovery whilst operating the plating-troughs at the Newhall Street manufactory. As chief 'dipper' it was Millward's job to oversee the electrotyping of gold, silver, and copper using Parkes's elastic-moulds. Before immersion in the plating-troughs, Parkes's method involved dipping the moulds in a solution of phosphorus and carbon disulfide, then nitrate of silver. Millward noticed that when the moulds coated with carbon disulfide were placed in the potassium cyanide solution other articles that were being electro-plated at the same time acquired a brighter, polished appearance, and the surfaces closest to the moulds received the brightest plating. Millward experimented by adding different proportions of carbon disulfide to the solutions. "This addition, properly performed, ...causes the deposited metal to be bright, instead of crystalline, as is

ordinarily the case...”¹⁶⁴ Bright plating greatly reduced the amount of time and effort spent on burnishing and polishing electro-plated articles. A note in Elkington’s plating-ledger records “Mr. Millward left us on 30th August 1862 to commence a business on his own account having been in our employ for 25 years.”¹⁶⁵

In contrast to Wright and Leeson’s theoretical approach to electro-metallurgy, Millward’s discovery of CS₂ as a plating additive followed the tradition established by Ogle Barrett and Alexander Parkes at Newhall Street of artistic, artisanal, and industrial electro-metallurgists using an experiential methodology, the ‘Edisonian approach’ of observing interesting or anomalous effects and investigating with further experimentation. Following Millward’s discovery, the use of additives in electro-plating solutions became an important branch of electro-metallurgy because of the numerous useful and aesthetic effects produced by additives on the growth and structure of electro-deposits. The term plating additives covers a huge diversity of chemicals that affect electro-deposition in myriad ways. Chemical additives in the plating solution have a greater effect on the properties and structure of electro-deposition than any other variable, and it is only relatively recently, with the extensive use of electrochemical deposition in semiconductor fabrication and nanotechnology, that a better understanding of the complex chemistry governing exactly how and why additives work in plating solutions has been gained.

¹⁶⁴ Millward and Lyons, 1847/1857.

¹⁶⁵ Elkington, AAD/1979/3/3.

15. Siemens' Smooth-Plating and Krupp's Spoon and Fork Rolling Mill.

The two final technical elements of Elkington's early success came from Germany, which were Werner Siemens method of depositing a smoother plated surface, and Hermann Krupp's design for a machine that rolled and cut flatware patterns from large sheets of German silver. Like many young science students in the late 1830s, [Ernst] Werner Siemens (1816-1892) and his younger brother [Carl] Wilhelm (1823-1883) experimented with the electrotpe process. When their parents died in 1840, they needed to earn money to complete their younger siblings' education. On 10th March 1843, the 19-year-old Wilhelm visited Britain to sell the electro-plating method his brother Werner had developed. In London, Poole & Carpmael gave him a letter of introduction to Elkington, and after visiting Newhall Street, Wilhelm returned to Poole & Carpmael to study Elkington's various patents. He was disappointed to discover his brother's hyposulphite solution mentioned in Leeson's *Memoranda of Alteration*, "...although in a manner that would hardly have sufficed to enable a third person to obtain practical results."¹⁶⁶ Elkington had invited Wilhelm to return to Newhall Street if he felt he had anything to offer the electro-plating process, so he returned and met with Mason to demonstrate that his brother's process was "...able to deposit with a smooth surface 3 dwt.¹⁶⁷ of silver upon a dish cover, the crystalline structure of the deposit having heretofore been a source of difficulty."¹⁶⁸ Mason paid Siemens £1,600, which, even allowing for the brothers' £110 outlay in patent fees, enabled Wilhelm "...to return to my native country and my mechanical engineering [training] a comparative Cræsus."¹⁶⁹

Werner registered his first patent with the Prussian *Technische Deputation* for

¹⁶⁶ C.W. Siemens cited in Bunce, 1882, p.54.

¹⁶⁷ dwt. is an abbreviation of *pennyweight*, a unit of mass equal to 24 grains and weighing 1/20 of a troy ounce, which is 1.55517384 grammes.

¹⁶⁸ Bunce, 1882, p.54.

¹⁶⁹ Bunce, 1882, p.54.

galvanic gilding and silvering on 29th March 1842, and by December had established the first electro-plating and gilding works in Germany in partnership with the nickel silver manufacturer J. Henninger & C^o. The Siemens' brother's experience of Prussian patent protection was so poor that many of their subsequent patents were registered in London.¹⁷⁰ Werner later recalled: "I had experimented with all the gold and silver salts known to me, and besides the hyposulphites had also found the cyanides suitable. The patent however was only granted me for the former, as in the meantime Elkington's British patent for the employment of the cyanide salts had become known. Notwithstanding the beautiful gold and silver precipitates obtainable from hyposulphite salts, the cyanide salts have in the long run kept the field, their solutions being more constant."¹⁷¹ Considering the timing of Leeson's Memoranda of Alteration on 25th March 1843, it seems likely that, notwithstanding the considerable sum paid by Mason to acquire Siemens' process, the belated inclusion of sulphite salts in Leeson's specification was also aimed at invalidating Siemens' patent rights as well as those of Woolrich.

On 26th August 1846, Alfred Krupp (1812-1887) took out a British patent for the spoon and fork rolling mill developed by his brother Hermann (1814-1879) in 1841. Six months later, on a second trip to enroll the specification, he travelled to Birmingham with a letter of introduction to Mason from his friend Wilhelm Siemens. Mason ordered some large hardened-rolls from Krupp to manufacture pens from sheet steel at his Lancaster Street works. Krupp had already established successful spoon mills in partnership with the Austrian Alexander von Schoeller at the Berndorfer Metallwarenfabrik near Vienna in 1843, and with another of Werner Siemens' associates J. Henninger & C^o. (later Berliner Metallwarenfabrik Jüerst & C^o.) at their nickel silver works at Berlin. In 1844, he also established a spoon mill for Maximilian de Beauharnais, 3rd Duke of Leuchtenberg, at his St. Petersburg Electroforming, Casting and Mechanical Plant in Russia.

¹⁷⁰ Fischer, 1922, pp.1-69.

¹⁷¹ Siemens, 1893, p.115.

It was not until 1851 that Elkington and Mason decided to invest in Krupp's spoon mill at the Brearley Street works. In December 1851, Henry Cole's *Journal of Design* reported: "...we have been informed that Messrs. Elkington have become the sole patentees of a new process for the rolling of spoons, forks, &c., from German silver. The invention is a Prussian one. For one pair of rolls, we have learnt, as much as 300*l*. was given, and the patent right, together with the machinery, cost upwards of 8000*l*. some idea of the value of the invention may be gathered from the fact that the operation of making a spoon or fork, from the cutting of the blank to the ornamentation of the shank, and the concaving of the mouth, the whole process is completed, with the exception of the removal of a slight "flaze" and the stoning previous to immersion in the silvering solution, by this very useful invention."¹⁷²

¹⁷² "What Is Doing In Birmingham?" *Journal of Design and Manufactures*, No. 34, 1852, p.127.

16. A Revolution in Plating and Gilding.

G.R. and Henry Elkington, backed by the money and industrial acumen of Josiah Mason, provided the corporate environment in which research by Wright, Barrett, Parkes, Millward, Leeson, Woolrich, Starr, Siemens, Krupp, et. al. was orchestrated into large-scale industrial electro-plating. By the late 1840s, Brearley Street was the commercial hub of the business, rolling sheets of German silver to stamp-out knives, forks, and spoons, which were transported on barrows a mile down Summer Lane, Old Snow Hill, and Lionel Street to the Newhall Street works to be electro-plated or electro-gilt. Elkington & C^o.’s core business was, and remained throughout the life of the company, large-volume contracts supplying electro-plated flatware, cutlery, and hollowware to shipping and railway companies, large clubs, hotels, civil, military, and educational institutions. On 26th October 1872, George Augustus Sala, the arts critic of the *Daily Telegraph* took a guided tour of Elkington’s Newhall Street factory and showroom, and afterwards observed, “A careful survey of these ingenious manufactures, together with some mental reference to social statistics, will not unnaturally lead to the conviction that the most remunerative department of the electroplater’s business is connected with the production of spoons, forks, and teapots...”¹⁷³

In 1844, Elkington & C^o. published *On The Application Of Electro-Metallurgy To The Arts*, a short treatise that explained their new technical process of electro-plating to the public. “The principle is perfect,” they wrote, “and the manipulation so simple, that with ordinary care the process cannot fail.”¹⁷⁴ Their confident air signified how far the industrial application of electro-metallurgy had developed since they patented their method on 25th March 1840. In just four years, the new technology had begun to supplant long-established interests in the metalwork trade. Some, whose livelihoods were

¹⁷³ G.A. Sala, “The Home of Electro,” *Universal Exhibition Vienna 1873*.

¹⁷⁴ Elkington & C^o., 1844, p.31.

threatened, voiced objections, or as R.E. Leader phrased it. “Presages of a revolution in silverware were received with chilly incredulity, and the derogatory word “Brummagem,” as a synonym for shoddiness, was freely used by the cynics.”¹⁷⁵ To counter this, the firm apprised the public of large orders they received from the new steamship companies, seeking to transform the public perception of electro-plate from a technological novelty into consumer confidence in the durability of the new mode of manufacture. “...those interested in opposing the progress of this art have not been slow in urging as an objection, what may be said of every new invention, that it has not experienced the test of time – but to this we reply by referring to the first extensive order we received, viz., in 1841, for the supply of the Steam Vessels of the Royal Mail Steam Packet Company – these goods, including the whole supply of forks and spoons, are much approved, and have already endured a wear equal to 9 or 10 years in domestic use.”¹⁷⁶

Orders for dinner services as extensive as that required for a fleet of fourteen ocean-going paddle steamers had formerly come only from royal or noble households, colleges and civic guilds, and were sterling silver rather than plated-ware. In 1841, the convergence of the new age of steam travel and the art of electro-metallurgy signaled the beginning of a new kind of corporate patronage. Writing in Paris, just two years later in 1843, the industrial chemist Jean-Pierre-Joseph d’Arcet observed that Elkington had brought about a revolution in the gilding and plating trade: “Since the previous industrial époque, the art of the gilder has experienced an immense revolution. The immersion-gilding and electro-plate processes used to gild and silver other metals have, in an extraordinary manner, reduced the production costs of gilding, and multiplied and diversified so extensively the resources and the products of this industry that they have to a great extent superseded the former mercury trade, but on a far greater scale.”¹⁷⁷

¹⁷⁵ Leader, 1919, pp.305–326.

¹⁷⁶ Elkington & Co., 1844, p.31.

¹⁷⁷ Arcet, 1843, p.95.

Chapter II.

“The Talent of Artists with the Enterprise of Manufacturers.”¹⁷⁸

¹⁷⁸ *The Times*, 24th January 1848, p.7.

1. Elkington's Creative Reputation in the 1840s.

In 1841-42, around the time they won their first extensive order for electro-plated flatware from the *Royal Mail Steam Packet Company*, Elkington began a newspaper advertising campaign to apprise the public that only articles bearing their maker's mark, which they described as "E&C^o., under a crown," was a guarantee of good quality electro-plate. They were to reiterate this primary marketing message throughout the 19th-century. By the end of 1843, nine other firms were electro-plating under license in Birmingham, London, and Sheffield. The reluctance of fused-plate manufacturers to embrace the new technology, or comprehend the opportunity cost to their businesses, and the hesitance of retailers to market electro-plated articles for fear of discounting the value of the fused-plate articles they already held in stock, prompted Elkington, now backed by Mason's financial resources and industrial expertise, to rapidly expand their own manufacturing and retail capabilities. As a result, Elkington quickly found themselves in competition with their own licensees. Returns from licenses were a valuable and growing revenue stream, but Elkington realized that it was imperative to convince the public that electro-plate was more durable, and better by design, than other plating methods. The problem was that Elkington couldn't control the quality of electro-plate designs manufactured by their licensees.

As Elkington won extensive orders from shipping lines, and gained favour with early-adopters intrigued by the modern alchemical marvel of the art of electro-metallurgy, some of the established fused-plate manufacturers, especially in Sheffield, resorted to the age-old "Brummagem" reproach of publicly deprecating the quality of the workmanship and design of electro-plate. In 1844, Elkington articulated the problem in the concluding paragraph of *On The Application Of Electro-Metallurgy To The Arts*: "Notwithstanding the great opposition we have had to contend with, of parties whose interest they supposed to

be hazarded by our proceedings, we have met with the greatest encouragement from the public; one effect of which success is the impossibility of any one manufactory being able to supply the general demand for goods so extensively used. This has induced us to grant many licenses to plate, but the goods of our licensees we cannot be responsible for, having found it impossible to compel them to adopt any particular quality of plate, nor to manufacture the goods upon any defined principle.”¹⁷⁹

Elkington’s response was a sustained newspaper advertising campaign, primarily aimed at differentiating themselves from their own licensees, the other electro-plating manufacturers. It was a subtle and highly specific, but complex-layered marketing message. The secondary message that supported and enriched the primary message was that the true signifier of an electro-plated article’s quality was not just its mode of manufacture, the beauty of its design, the fineness of its workmanship, or the value and social cachet of the precious metals and other materials it was made from, but that all of those qualities converged in the reputation of the name of its maker. “Such individuals must therefore rest upon their own respectability and fame,” Elkington asserted, “the process being equally applicable to the production of cheap and consequently inferior articles, as those which are calculated to endure a lifetime.”¹⁸⁰

Elkington’s advertisements repeatedly urged the public to look for articles bearing their maker’s mark: “E&C^o., under a crown,” in a shield, and usually over the capitalized name “ELKINGTON,” was a corporate trademark that placed a conceptual frame around the new art of electro-metallurgy.¹⁸¹ Its intaglio design was stamped as a permanent mark on every article and artwork Elkington made, relentlessly invoking the message they relayed in their regular newspaper advertisements, which was that they and they alone manufactured “...articles of the very best and most perfect quality; all of which

¹⁷⁹ Elkington & C^o., 1844, p.31-32.

¹⁸⁰ *Ibid.*

¹⁸¹ Elkington & C^o. Ltd., 1923, p.20.

bear our marks, and are warranted by us.”¹⁸²

In the 1840s there was a far more rudimentary concept of the function of a trademark as the signifier of a manufacturing company’s brand identity. The depreciation of all electro-plated articles as “Brummagem,” particularly by Sheffield plate manufacturers, prompted Elkington to promote the idea that the corporate credibility of an industrial manufacturer, informed by advertising and favourable reviews in the popular press, coupled with promotional events, exhibitions, and showroom displays, could imbue any product carrying their mark with any concatenation of desirable qualities.

The first part of this chapter explores how by the time of the Great Exhibition in 1851, Elkington’s maker’s mark could be credibly applied to almost any utilitarian, decorative, or sculptural article made using electro-metallurgy, from a teaspoon to an ornamental sideboard dish or a monumental figurative statue. It shows how, during the 1840s, Elkington transformed the firm’s public image, which was based solely on a reputation for technical innovation as the “patentees of electro-plate,” into a reputation as designers of high-quality patterns for electro-plated flatware and hollowware, and as ‘art-manufacturers’ renowned for reproducing the best ‘specimens’ of historical and modern art as electrotypes. Elkington’s great early accomplishment, which culminated in their success at the Great Exhibition of 1851 and *Exposition Universelle* of 1855, was to equate, in the public mind, their technical innovation with aesthetic discernment and creativity.

Having detailed the discovery and development of the firm’s technical capabilities in the previous chapter, I will now demonstrate how the development of the firm’s creative strategy and resources was similarly due to the recruitment of key people, whose successive contributions collectively shaped the development of Elkington & Co.’s art of electro-metallurgy. In the early-1840s, G.R. Elkington and Josiah Mason held the initiative

¹⁸² Elkington & Co., 1844, p.32.

in developing new technical discoveries into commercially viable industrial processes, but as the decade progressed it was Henry Elkington that conceived and implemented Elkington's creative strategy, which was given huge impetus by the firm's participation in the Exhibition of Manufactures and Art at Birmingham in 1849, and the Great Exhibition of 1851. The creative model that provided Henry with the inspiration for the art-manufactures branch of the business was Henry Cole's short-lived but influential Felix Summerly's Art-Manufactures, of which *The Times* wrote in January 1848 "...a step, and a very important one, both for the fine arts and for the manufactures of the empire, has been made by the union of the talent of artists with the enterprise of manufacturers; the interests of both will be advanced by it, and the public will be benefitted by the results."¹⁸³

Henry died unexpectedly on 26th October 1852, and although the creative management of the firm was eventually taken over by his nephew Frederick Elkington (G.R.'s eldest son), Frederick's relative youth and inexperience required that Henry's art-manufactures and electrotype art-reproductions branch of the business became more closely integrated into the electro-plating business. By curious serendipity, Henry's death coincided, in October 1852, with the beginning of an arrangement with the Department of Science and Art for Elkington & C^o. to make electrotype reproductions of historical artworks for the new Museum of Manufactures, which had been established that year.¹⁸⁴ In concluding this chapter, I will investigate how the commercial relationship with the new Museum, which began "as an experimental arrangement for one year," became the foundation stone of the Museum's collections, and a key educational tool in William Dyce, Richard Redgrave, and Henry Cole's "South Kensington system," the national syllabus for art education that lasted until the early 20th-century.

2. The Key Figures in Elkington's Early Creative Development.

¹⁸³ *The Times*, 24th January 1848, p.7.

¹⁸⁴ Elkington, AAD/1979/3/1/8, p. 157.

The transformation of Elkington's creative reputation in the 1840s grew out of their early association with Benjamin Smith III. His virtuoso use of the traditional techniques of raised, cast, chased, and embossed work, often combined the foliated and floriated forms and motifs of organic naturalism with stylistic allusions to classical antiquity. They were perfectly suited to showcase how Parkes's elastic-moulds and Elkington's new art of electro-metallurgy could now easily replicate and reproduce even the most complex, laborious, and intricate of artworks. So too was the historicism of Benjamin Schlick and Dr. Emil Braun, two archaeologists, who, from the mid-1840s, supplied Elkington with casts and moulds of Classical Greek and Roman, and Italian Renaissance artworks and ornamental artefacts from major European collections. Electrotyped reproductions by Elkington were retailed to the rapidly expanding educated classes of Victorian Britain, who were schooled in the classics and enthralled by the art and literature of classical antiquity and the Italian *cinquecento*. Schlick's electrotypes, frequently restored or "composed from the antique,"¹⁸⁵ created new art historical assemblages by altering and rearranging the formal and ornamental elements of classical art and archaeological objects to stylistically and conceptually "improve" them. Schlick's pioneering use of Elkington's technology for the creative recombination of pre-existing forms and motifs as transposable stylistic components became the key genre-characteristic in the art of electro-metallurgy, which I have termed *compositional historicism*.

The driving force behind the transformation of the firm's creative reputation was Henry Elkington. In the late 1840s, following the demise of Benjamin Smith III, and inspired by the example of Henry Cole's short-lived but influential venture, Felix Summerly's Art-Manufactures, Henry Elkington established a subsidiary company to supply art-manufactures for public exhibition and sale in Elkington's showrooms. Alongside the electrotyping of historical artworks, Henry commissioned and acquired

¹⁸⁵ *Catalogue*, Birmingham 1849, p.45.

works by established contemporary artists and designers, whilst fostering young British talent in an in-house design department, beginning in October 1846 with his first apprentice, George Clark Stanton. Elkington's success at the Great Exhibition, and the creative strategy continued by his nephew Frederick Elkington until c.1890, was very largely due to Henry Elkington's original creative vision for the company.

Shortly before Henry died, and probably as a result of Henry's failing health, Charles Grant (c.1801-1883), an artist that had previously worked for Benjamin Smith III, was appointed as chief artist to supervise Elkington's artistic staff. Grant was a designer largely of showpiece silverware, most noted for his design of the *Macready Testimonial* for Smith, presented to the actor William Charles Macready in 1841. Prior to his full-time appointment, he was commissioned to design the *Iliad Salver*, which was shown by Elkington at the Great Exhibition. Inspired by Flaxman and Thorwaldsen, the *Iliad Salver* typifies Grant's neoclassical style, and was shown repeatedly at subsequent exhibitions. The *Iliad Salver* inspired Elkington to commission a series of showpiece shields and salvers over the next two decades, all of which depicted well-known literary scenes. Published as electrotypes, they embody the modern technological transformation of a genre-characteristic that I have termed *narrative plate*, and were commissioned to further the public reputation of the firm for original artistry, and confer creative credibility on the mass-market flatware and hollowware on which the company's commercial success depended.

3. Benjamin Smith III (1793-1850).

Until the late 1840s, Elkington were primarily associated with their new mode of manufacture rather than the quality of their artistic design and workmanship. The earliest documented display of electro-plated articles by Elkington & C^o. was at the Royal Institution in January 1841, an organization devoted to scientific education and research. It was not an exhibition, but a loan of specimens to accompany two scientific talks about electro-metallurgy by William Thomas Brande¹⁸⁶ and Alfred Smee:¹⁸⁷ “On Jan. 22, Mr. Brande illustrated, at the Royal Institution, this very popular scientific novelty... Mr. A. Smee subsequently read to the Royal Institution a paper upon the Laws of Electro-Metallurgy... a silver spoon was gilt in the presence of the audience, with the potassa solution of the oxide of gold. Several silver forks and spoons, a sugar basin gilt of an excellent colour by this process, were exhibited; and the lecturer stated that it was coming into use at [Hatton Garden] Clerkenwell, which would materially save the health of the workmen, who suffer severely by the mercurial fumes of the present process. ...A large candelabrum, and other articles, were exhibited, plated by Elkington, of Birmingham, by a process patented by him.”¹⁸⁸ The science and technological novelty of the mode of manufacture is foregrounded, but with no mention at all of the design qualities of the candelabrum, or other articles. Several large branch-candelabra are mentioned in correspondence between G.R. Elkington and Benjamin Smith III from 27th August 1839 onwards. The earliest of these were immersion-gilded, but after 1840 they were electro-plated and gilded by the new method.

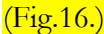
The large candelabrum of January 1841 was almost certainly designed by Benjamin Smith III, and then cast (i.e. not yet electrotyped) using his patterns at an

¹⁸⁶ William Thomas Brande (1788-1866) was Professor of Chemistry at the RI from 1813-1852.

¹⁸⁷ Alfred Smee (1818–1877) was the author of the first major treatise on electro-metallurgy, *Elements of Electro-Metallurgy* (1840).

¹⁸⁸ *Year-Book* 1842, p.145-146.

unnamed foundry in Birmingham, before being electro-plated at Newhall Street.¹⁸⁹ Born on 6th October 1793 at 12 Hockley Row in Birmingham, Smith was eight years older than G.R. Elkington. They grew-up and were apprenticed in the metalwork trade in same neighbourhood. Smith was apprenticed to his father as a silversmith on 6th July 1808, and entered his first assay mark jointly with his father on 5th July 1816. Benjamin Smith II (1764-1823) began his career as a Birmingham toymaker. From about 1790 he worked with his brother James making buckles and buttons for Matthew Boulton. In 1802, aged 38, he left Boulton, and Birmingham, and formed a partnership with Digby Scott at Limekiln Lane, Greenwich. The partnership of Digby Scott and Benjamin Smith was dissolved in 1807, and by 1809 he was again working with his brother James. From 1802-1814, he worked exclusively for Rundell & Bridge (Royal Goldsmiths 1797-1843).

After moving to London, Benjamin Smith II gained his reputation as one of the finest chasers in the history of British silver. A silver-gilt circular salver of c.1810-11 in the Gilbert Collection typifies his work for Philip Rundell. Densely ornamented with natural motifs, it is intricately raised, cast, chased, engraved, and tooled using a virtuosic medley of techniques. A band of acanthus is chased around the foot. A border of reeds, a pierced band of grapevines, an engraved band of scrolling foliage, and vases of fruit encircle the salver. At its centre is an unidentified coat of arms, probably of the (unidentified) aristocratic patron it was made for.  When the salver was made, Benjamin Smith III was 21, and had learnt silver design and manufacture in his father's workshops at Birmingham and London, where he developed a fine eye for the highest level of design and workmanship demanded by Rundell's elite clientele. In early 1814, the family moved to Camberwell, where Benjamin Smith II became a retail-manufacturer on his own account, whilst still supplying articles for Rundell & Bridge. Benjamin Smith III registered his own first mark on 15th July 1818. He completed the term of his apprenticeship on 3rd

¹⁸⁹ Elkington, AAD/1979/3/1/2, pp.21-33.

January 1821, and, when his father became ill the following year, established his own business at 12 Duke Street, Lincoln's Inn Fields, where he registered his third mark on 24th July 1822. His father died, aged 59, in August 1823.

The different traditions of Boulton and Rundell, Birmingham's great toymaker and London's illustrious Royal Goldsmith, seemed to unite in both father and son, which made Benjamin Smith III a highly-desirable partner for Elkington. The basis of the first partnership agreement of 29th October 1840 was that Elkington would arrange the manufacture and electro-plate articles according to Smith's patterns and designs.¹⁹⁰ Elkington agreed that they would not silver articles for any other "tradesman or manufacturer" in London, or anywhere else in Britain unless they too agreed not to supply the London market "directly or indirectly."¹⁹¹ The agreement included an extensive list of the silvered articles Smith alone could retail in London. Agreeing a monopoly of their electro-plating services in the London market with one supplier seems like a major concession, until it is viewed in the context of the earlier business arrangements that Elkington had operated with his uncle, and with the large gilding ateliers of Paris. The arrangement with Smith meant that Elkington acquired an established retail outlet in London, and access to Smith's designs.

Several further agreements with Smith were signed, the most important of which was that of 10th May 1841, which agreed that Smith would establish retail showrooms at 22 Regent Street and 45 Moorgate Street, specifically to market electro-plate. A small electro-plating workshop was also established at Moorgate. The new partnership was styled Elkington & C^o. This seems curious given Smith's established reputation for design and retail in the London market, but also confirms that Smith was keen to keep the speculative new venture separate from his existing business as a high-end silversmith.

¹⁹⁰ Elkington, AAD/1979/3/1/6, pp.17-19.

¹⁹¹ *Ibid.*

There are very few articles in newspapers or popular periodicals about the early designs of Elkington & C^o., as opposed to its industrial processes, until c.1849. The only record of Elkington's productions of Smith's designs is to be found in the pattern-books in the Elkington archive, and they do not record which drawings originated at Duke Street. All of the objects made to Smith's designs were stamped only with Elkington's maker's mark, and there is no archival material to confirm Smith's design contributions within the decade-long partnership. The problem of attribution is further exacerbated by the relative lack of press interest in the design of art-metalwork, and indeed art-manufactures in general, prior to the huge surge of public interest generated by the Birmingham Exposition of Arts and Manufactures of 1849 and Great Exhibition of 1851. The historical documentation of Elkington & C^o's designs only begins in earnest from 1849-1852 with the publication of *The Journal of Design and Manufactures*, which was edited and published by Henry Cole and Richard Redgrave. It was the first monthly periodical to focus exclusively and in-depth on British decorative and applied arts, with the specific aim of improving manufacturing design and educating public taste. Elkington were major contributors to the Exhibition of Manufactures and Art at Birmingham, which opened just six months after *The Journal* was first published in London in March 1849, and the company's designs were given unprecedented coverage in many of the 36 monthly issues of the short-lived journal.

A rare black & white engraving survives that depicts nine of the ninety-eight articles exhibited by Elkington at Birmingham. It is titled "Birmingham Exposition of Arts and Manufactures, 1849."¹⁹² (Fig.17.) Several objects are attributable to Smith and typify the style he gave to Elkington, which Bury termed "essays in organic naturalism."¹⁹³ Bury identified the large *Oak Candelabrum-épergne* with a glass bowl in its central branches,

¹⁹² Elkington, AAD/2003/4.

¹⁹³ Bury, 1971, p.25.

at the back right of the table, as a pattern by Smith “dating from 1847, or even earlier.”¹⁹⁴ That it was still in production at the time of the *Exposition universelle* of 1855, despite the vagaries of fashion, shows the perennial popularity of naturalism in electro-plate design. The version shown at Birmingham and depicted in the engraving however has two dogs and a bird adorning the base, which were modeled by Pierre-Jules Mêne (1810-1879).¹⁹⁵ The French sculptor Mêne pioneered the 19th-century school of French *animalières*, which included Antoine-Louis Barye. Earlier in 1849, the art dealer Ernest Gambart (1814-1902) exhibited Mêne’s small animal bronzes for the first time in Britain with the opening show of his new gallery at 120-21 Pall Mall. *Oak Candelabrum-épergne, with Dogs and Bird* is a key work because it represents an important moment of transition in Elkington’s design of the art of electro-metallurgy. The collaboration between Smith, a British silversmith in the tradition of Rundell, and Mêne, the pioneering doyen of French designers and the middle-class market for domestic art-manufactures in the form of bronze statuettes, marks Elkington’s first flirtation with the style and design of *l’orfèvrerie française*. Smith’s design is so naturalistically detailed it was probably assembled using electrotypes of the branch and leaves of a real oak tree using Parkes’s patented method of 1843. To modern eyes it evokes a Chinese *shumu* and *shanshui penjing* in precious metals, and provides a surprisingly complementary setting for Mêne’s finely detailed animal studies of two hunting-dogs caught in the act of scenting the game-bird hiding in the undergrowth.

(Fig.18.)

In 1849, when Ernest Gambart first expanded from publishing prints into selling contemporary art at his premises on Pall Mall, which quickly became known as the French Gallery, he was creating a new business model for how original modern artworks were marketed and retailed.¹⁹⁶ Prior to Gambart’s commercial gallery, and that of Goupil

¹⁹⁴ *Ibid.*

¹⁹⁵ See: Poletti and Richarme, 2007.

¹⁹⁶ See: Maas, 1975; Fletcher, 2007; Fletcher and Helmreich (editors), 2011, and Bayer and Page, 2011.

in Paris, and their London rivals Agnew, Colnaghi, and Cundall, artworks were largely sold directly by artists to art patrons visiting their studios. Not simply private workspaces, artist's studios doubled as galleries and salons. After the success of the Mêne's exhibition, Gambart pioneered a programme of exhibitions by different artists, alternately promoting French and British artists. Gambart's commercial gallery, which quickly became known as the 'French Gallery,' was, in effect, an independent retail showroom dedicated to art, and the relationships he fostered with the artists whose work he marketed and his art-buying clientele was undoubtedly a major influence on the gallery space that Henry Elkington established in September 1850, by expanding Elkington's Regent Street showroom into adjacent premises in Jermyn Street. This, coupled with the experience of the Great Exhibition, shaped the extensive refurbishment at the close of 1851 of what was to become Elkington's world-renowned showroom at Newhall Street.

At Birmingham in 1849, the *Oak Candelabrum-épergne, with Dogs and Bird* was shown in Case No. 58, which contained "Specimens of Silver and Electro Plate." It was displayed alongside the branched-candelabrum at the back left of the engraving,¹⁹⁷ which was part of an "Elizabethan Dinner Service," and the large "Fountain for Rose Water" in the centre. Along with the two rococo fruit stands in front of them, they are typical of the extravagant ornamental embellishments of early-Victorian design that characterized the Great Exhibition. Ornamental forms, mounts, and motifs that either borrow directly from nature, or directly imitate or vaguely evoke some past style, are haphazardly soldered together in a jumbled, overwrought medley. "The generation of the exhibition – content to copy the styles of the past –" wrote Pevsner in *High Victorian Design*, "was prouder of nothing more, and considered nothing more an original achievement all their own, than this scientific naturalism of foliage carving and modeling."¹⁹⁸ To give the illusion of elaborate design, laborious workmanship, and a wealth of precious materials, every

¹⁹⁷ See Fig.16.

¹⁹⁸ Pevsner, 1951, p.86.

available surface was decorated with what Pevsner called a “delight in abundant protuberances.”¹⁹⁹ To our eyes today nothing looks less scientific than the foliated and floriated cornucopias, and rashly historicist excesses of Victorian electro-plate, but ‘the generation of the exhibition’ could still recall the excitement and novelty of the discovery and development of electro-metallurgy in the early 1840s. What in our eyes is an overelaborate design of natural motifs and confusion of past styles, was, in Victorian eyes, a joyous celebration of their newly acquired scientific and artistic mastery over natural forms and materials. The recognition of perfectly replicated botanical specimens woven into ornamental subjects and motifs copied from classical antiquity, the Middle Ages or Renaissance required a diverse knowledge of literary sources, and was a way of flaunting a visual literacy that represented modern British society’s cultural appropriation of the entire history of art and science. In an essay that labeled the mid-Victorian years “The Age of Tennyson,” G.M. Young described how this was typified by the technical artistry of the Poet Laureate, which fused classical mythological themes to scientifically observed imagery, and was “...enveloped in an Alexandrian overgrowth of literary erudition, a kind of Great Exhibitionism not unalluring to an age which loved profusion, as much as it admired invention.”²⁰⁰

Shirley Bury claimed that Elkington & C^o. caused the demise of Smith’s business in 1849-50 by ending their partnership on 15th December 1849 and assuming complete control over design of their manufactures, and their London retailing operations, “...driving the unfortunate Smith into bankruptcy.”²⁰¹ Correspondence reveals that Smith and Elkington remained close friends until Smith died, aged 57, in May 1850. However, correspondence as early as 1844 also confirms that Smith was indecisive in business, and, despite investing heavily in the partnership with Elkington & C^o., was reluctant to

¹⁹⁹ Pevsner, 1951, p.49.

²⁰⁰ G.M. Young, 1948, p.56.

²⁰¹ Bury, 1971, p.16.

overcommit too hastily to technology that he felt was "...a novelty only half-established."²⁰² Despite his discerning eye for beautiful designs and patterns, Smith was indecisive and lacklustre at marketing the new mode of manufacture. The partners had occasionally frank exchanges of letters over Smith's ambivalent marketing and management of the electro-plating business in London, but their correspondence also confirms a close and longstanding friendship between them. Just four months before he died, on 1st November 1849, Smith's son, Apsley Smith (1825-1905), married Elkington's only daughter, Emma Elizabeth (1829-1893), at Northfields Church in Birmingham. Apsley Smith was subsequently employed by Elkington as a coal agent at their newly established copper smelting works at Pembrey in Wales, where he was employed until about 1859. Although Smith was declared bankrupt shortly before he died, with debts in excess of £100,000, another son, Stephen Smith (1822-90), revived the business in partnership with William Nicholson. Between c.1851-1863, Smith, Nicholson & Co. produced highly accomplished plate based heavily on the father's patterns and designs.

²⁰² Elkington, AAD/1979/3/1/1, p.55.

4. *The Triumph of Science and the Industrial Arts* at the Great Exhibition.

Benjamin Smith III had an enduring influence on metalwork design after his death, as a recent auction has illuminated.²⁰³ On 12th June 2006, an eight-branched candelabrum-epergne marked by Stephen Smith and William Nicholson, dated 1857, was sold at Christie's. (Fig.19.) It derives from an epergne designed by Benjamin Smith III, which was exhibited by Elkington & C^o. in 1849 at Exhibition of Manufactures and Art at Birmingham, where it was described in the *Catalogue* as "Centre Piece, or Epergne – designed and recently manufactured in silver, with three figures, emblematic of Commerce, Fortune, and Health."²⁰⁴ It was shown in Case No. 58 along with other specimens of electrotyped silver and electro-plate, including *Oak Candelabrum-epergne with Dogs and Bird*, and *Four Fruit Stands – Representing The Four Seasons*, which was also designed by Smith, and was subsequently shown at the Great Exhibition. Smith and Nicholson's candelabrum-epergne of 1857 has four figures, which according to Christie's represent "peace, commerce, plenty and agriculture," beneath an architectural cupola and supported by a bound wheat-sheaf stem. Smith's original epergne was important because it inspired Elkington's popular and most iconic showpiece at the Great Exhibition, *The Triumph of Science and the Industrial Arts*, designed by William Beattie. (Fig.20.)

The 1849 catalogue records that Smith's silver epergne was 'recently manufactured,' and had only three cast figures, which suggests that it was incomplete at the time of the exhibition, probably as a result of Smith's failing health. After the dissolution of Elkington's partnership with Benjamin Smith III, and his death in 1850, the Scottish sculptor William Beattie (c.1802-1867) designed *The Triumph of Science and the Industrial Arts* for Elkington & C^o. to exhibit in 1851, which was clearly inspired by Smith's 1849 epergne. After Smith died, and his son Stephen took over his father's

²⁰³ Christie's London, Sale 7241, Lot 64, 12th June 2006.

²⁰⁴ *Catalogue*, Birmingham 1849, p.45.

business and also his debts, along with the Duke Street workshops and his remarkable stock of patterns and designs. Given the similarity of the two epergnes, the 1857 edition is certainly made to his father's design, but it is also feasible that Smith, Nicholson & C^o. simply completed the original epergne shown in 1849, by adding a fourth figure and other fittings, before stamping it with their own marks. Smith and Nicholson's 1857 epergne has cartouches around the base depicting agricultural motifs, including a steam tractor. Its overall shape, subject matter, and ornamental motifs are strongly reminiscent of *The Triumph of Science and the Industrial Arts*.

If one artwork were to be chosen by Victorian visitors as the most emblematic of the Great Exhibition, it would undoubtedly be *The Triumph of Science and the Industrial Arts*. A century later, in *High Victorian Design*, Pevsner described why it typified the spirit of 1851. "A statuette of Prince Albert crowns a vase exhibited by Elkington's. The vase is four feet tall and not of silver as it would first appear, but electro-plated. It has a name: *The Triumph of Science*, and was designed and modeled by William Beattie."²⁰⁵ Beattie was a journeyman sculptor and chaser, primarily employed as a designer and modeler of Parian, working for Minton, Copeland, and Wedgwood during the 1850s.

The *Official Catalogue* of 1851 described it as, "intended to represent the triumph of Science and the Industrial Arts in the Great Exhibition," and included a large engraving (Plate 88) of it illustrated the catalogue.²⁰⁶ The engraving looks like an architectural monument for a town square rather than a four-foot vase. "The statuettes against the sides are Newton standing for Astronomy, Bacon standing for Philosophy, Shakespeare standing for Poetry," writes Pevsner, "and – this is where the nineteenth century speaks – James Watt standing for Mechanics. The reliefs between the statuettes display 'practical operations of Science and Art'."²⁰⁷ The labourers are naked putti. Once

²⁰⁵ Pevsner, 1951, p.20.

²⁰⁶ *Official Catalogue*, 1851, p.672.

²⁰⁷ *Ibid.*

its scale is known, it appears typical of the grand testimonials that early-Victorians so delighted in awarding each other for public service, and Culme's descriptive critique of *The Macready Testimonial* of 1841-42, designed by Charles Grant for Benjamin Smith III comes readily to mind.²⁰⁸ Pevsner, like many 20th-century critics, although never as scathingly dismissive as Yvonne Ffrench,²⁰⁹ liked to cavil over the confusion of past styles in mid-Victorian design: "The style is to our surprise called by the catalogue Elizabethan. To us it looks rather Dixhuitième if anything. This bastardization of period styles is... as characteristic of 1851 as the replacement of silver by electro-plating, ...and as the elevation of mechanics and applied science to the level of philosophy and the fine arts."²¹⁰

It is interesting to compare the synthesis of past styles in *The Triumph of Science and the Industrial Arts* with the gold vase, jeweled and enameled, exhibited in 1851 by the supremely talented jeweller John Brogden, who was the creative partner in Watherson & Brogden of London.²¹¹ (Fig.21.) Designed by Alfred Brown, Watherson & Brogden's vase represented the United Kingdom with allegorical figures of Britannia, Scotia, and Hibernia, beneath which were festoons of diamonds representing the national flowers, the rose, shamrock and thistle. A classical frieze in bas-relief around the body depicted the ancestral mix of European influences, Celtic Roman, Saxon, and Norman that became British. Below that were winged figures bestowing fame on Britain's renowned poets, soldiers, and scientists, and, below that, figurative allegories of British virtues, Prudence, Truth, Fortitude, and Industry. Ostensibly the two showpiece vases were quite similar in form and their presentation of symbolical narratives, and Auerbach even muddled them in his study of 1851.²¹²

²⁰⁸ Culme, 1977, p.49 and p.105.

²⁰⁹ Ffrench, 1950.

²¹⁰ Pevsner, 1951, p.20.

²¹¹ See: Wyatt, 1852, Plate 66; *Art-Journal Illustrated Catalogue*, 1851, p.281.

²¹² Auerbach, 1999, p.113.

However, in its syntheses of past styles, virtuoso technical combinations, and lavish mix of materials, including diamond festoons, rubies, emeralds, sapphires, pearls, and rich-red enamelwork, which Culme has described as Brogden's forte,²¹³ Watherson & Brogden's *Patriotic Vase* of 1851 appears far more French than British, resonant of Jean Valentin Morel's spectacular *objets de vertu*, which won a Council Medal in 1851. Alfred Brown's design for John Brogden used the most patriotic of British subjects to introduce the virtuosic techniques of *l'orfèvrerie française* and stylistic eclecticism of French Romantic Historicism into British art-metalwork. As I shall show in my final chapter, it prefigures the virtuosic techniques and literary subjects that Emile Jeannest and Léonard Morel-Ladeuil sculpted for Elkington & C^o. and, especially evokes Auguste Willms's eclectic designs.

In contrast, Elkington's monumental 'vase' appears far more British, four feet of massive monochromatic silverware. However, it is perplexing and elusive to classify. Genre classification collates objects based on their shared similarities. *The Triumph of Science and the Industrial Arts* was conceived by Elkington & C^o. to allegorize and narrate an historic event in the form of presentation plate, as well as herald the new technological genre it embodied. To the avid exhibition-goers of 1851, the aura of modernity surrounding *The Triumph of Science and the Industrial Arts*, embodied in its reference to 'Mechanics,' was appropriately reflected by its modern industrial mode of manufacture. In 1851, Elkington's did not attempt to conceal the deception of electro-plate. Quite the contrary, the knowingness of the technological deception was central to the aesthetic experience of the art of electro-metallurgy for early-Victorians. Alone in a glass-case, the 'vase' was a spectacular showpiece, a self-referential 'modern specimen' that celebrated the historic event of which it was a part. For visitors to the Great Exhibition it symbolized the spirit of 1851, but looked at with art historical hindsight it appears oddly

²¹³ Culme, 1977, p.212.

portentous, like a maquette for the competition to design the *Memorial to the Great Exhibition of 1851*, which was won by Joseph Durham and manufactured by Elkington & C°. a decade later. The fact that this hugely important artwork ‘disappeared’ so soon after 1851, and is known to art-historians only through engravings and descriptions, and that its designer, William Beattie, is now all-but-forgotten, makes it all the more poignant and perplexing to classify.

5. Benjamin Schlick (1796-1872) and the Acquisition of Casts.

Alongside Benjamin Smith's virtuosic naturalism in the 1849 engraving, the two-handled cup with a stemmed foot in the foreground is a silver electrotype of an archaeological artifact. One of 15 articles of Roman silverware excavated in the Casa dell'Argenteria at Pompeii in 1835, it is now in the Museo Archeologico at Naples. The *skyphos* was one of a pair decorated with ivy and vine-tendrils, found along with two *kanthari* depicting cupids riding centaurs, which were also electrotyped and shown in 1849. An oxidized silver electrotype of one of the *kantharos* was acquired by Prince Albert and given to Queen Victoria for Christmas 1849. The casts were procured in Naples by the Danish archaeologist Benjamin Schlick. (Fig.22.)

A large volume of correspondence from Schlick to Elkington, dating from 1844-52 survives in the Elkington archive,²¹⁴ which has prompted recent essays in English by Wynyard Wilkinson²¹⁵ and Kathryn Jones.²¹⁶ Margit Bendtsen's research has also cast light on Schlick's classical education in Denmark, and the social context of his early peripatetic lifestyle, which so typifies the European dilettanti prior to the revolutions of 1848.²¹⁷ In 1815-17, Schlick was inspired by the public lectures of Peter Oluf Brøndsted, the first Danish classicist to travel, carry out excavations, and trade in antiquities in Greece. After a Grand Tour in 1818-20, Schlick traversed Europe seeking patronage until his employment by Elkington in 1844, offering his services as an architectural draughtsman and interior designer, mostly of theatres, in the 1820s. Charles X of France made him a Chevalier of the Légion d'Honneur in 1828. In the 1830s, he published drawings and watercolours of the ruins at Pompeii and Herculaneum.

Bury provides an insightful study of Schlick's contribution to the art of electro-

²¹⁴ Elkington, AAD/1979/3/1/8, pp.15-131.

²¹⁵ Wilkinson and Hawkins, 2005, pp.4-11.

²¹⁶ Jones, 2012.

²¹⁷ Bendtsen, 1993.

metallurgy.²¹⁸ In a few short pages she describes how Elkington employed Schlick specifically to exploit the large market for reproductions of classical statues and artifacts, particularly from Pompeii and Herculaneum, which were in great demand in Britain throughout the 1840s. Schlick's social connections gave him access to collections of antiquities in Naples and Paris, where he took moulds of classical artworks to make plaster and wax casts that he supplied to Elkington. Until 1848, when the European Revolutions curtailed his dilettante lifestyle, he travelled about Europe collecting casts that Elkington reproduced as electrotypes, yielding him royalties on sales.

Elkington's earliest acquisitions of casts made by Schlick were on 19th November 1844. It included a cast of an Augustan cup decorated with a scene of the apotheosis of Homer, also from the Museo Archeologico at Naples, which was excavated sometime before 1755 at Herculaneum.²¹⁹ A silver, partly gilt, electrotype of *The Homer Cup*, made in 1847, is in Minneapolis Institute of Arts. (Fig.23.) A diagram of the diamond-shaped English Registry mark for the cup, registered by Schlick on 30th July 1844, was attached to Elkington's receipt.²²⁰ This signals how Schlick's business model was only made possible by the Copyright of Designs Act of 1839,²²¹ which gave protection to the shape and ornamentation of an article, and introduced a system of registration, and the 1839 Act's amendment by the Ornamental Design Act in 1842,²²² when the Patent Office began issuing diamond marks with registration numbers for designs. Later, the Utility Designs Act of 1843²²³ extended the protection afforded to ornamental designs to utilitarian designs. Few, if any, of the designs registered by Schlick were by his own hand, but he was able to register his right to the reproduction of the designs based solely on his

²¹⁸ Bury, 1971, pp.27-30.

²¹⁹ Pannuti, 1984.

²²⁰ Elkington, AAD/1979/3/1/8, p.17.

²²¹ *Copyright of Designs Act*, 1839, 2&3 Vict c.17.

²²² *Ornamental Design Act*, 1842, 5&6 Vict c.100.

²²³ *Utility Designs Act* ("An Act to Amend the laws relating to the Copyright of Designs"), 1843, 6&7 Vict c.65.

possession of a cast of a work of antiquity. Ironically, the impetus behind both acts came about because various trades were being undermined by new technologies, like electrotyping, which expedited the copying process.

As the 1840s progressed, a market that Elkington & Co. was increasingly keen to exploit was the presentation of plate in various ornamental forms as testimonials in recognition of public service. The manner in which Victorian society honoured public achievement, and the 18th-century bestowal of two-handled covered cups as sporting trophies, and the presentation of swords, medals, and snuffboxes for military exploits during the Napoleonic Wars gave broad impetus during the latter half of the 19th-century to testimonials for achievements in government, business, and civil society.²²⁴ They provided an opportunity for more exciting designs on *recherché* and *recondite* subjects.

On 5th February 1847, the *Birmingham Advertiser* reported, “On Friday evening last week we had the high satisfaction of attending a meeting at the rooms of the Society of Artists, Temple Row, to witness the public presentation of a testimonial to Mr. SAMUEL LINES, a gentleman who has been celebrated as a teacher of drawing in this town for upwards of forty years...” The newspaper was effusive that such a celebrated work of antiquity had been reproduced in Birmingham. “The testimonial, representing the Third labour of HERCULES, is in silver, from an antique design found in the house of SALLUST, and bought to England by Sir B. SCHLICK, under whose immediate superintendence, at the celebrated establishment of Messrs. ELKINGTON, in this town, the work was executed. As a work of art of Birmingham manufacture, it surpasses in taste, classicality, and execution, any design we have seen produced. The sculpture, a classical figurative group, was cast in silver from an original discovered in the ruins of Pompeii, and was fixed on a black marble pedestal with an inlaid inscription in silver on the front: ‘PRESENTED TO SAMUEL LINES, ESQ., BY HIS PUPILS, A.D. 1847.’” Elkington’s

²²⁴ Blair, 1972; Culme, 1977, pp.99-108.

electrotype was made from Schlick's cast of an bronze fountain statue excavate from the Casa di Sallustio at Pompeii, which was a copy of a Greek original by Lysippos from the 4th-century B.C. The intricate statue *l'Eracle che abbatte la cerva* (*Hercules capturing the Stag*) from which Schlick took his mould is now in the Museo Archeologico at Palermo.

Lines had established his successful drawing academy on Newhall Street in 1807, and there were 250 subscribers to the testimonial from Birmingham's artistic and educational community, many of who had been taught by Lines. It was a perfect promotional opportunity for Elkington. Following the presentation a vote of thanks was proposed to Elkington for their execution of "the classical testimonial." G.R. Elkington was obliged to leave the meeting early, but an associate stated on his behalf, "... that so far as the model was concerned, the credit of its successful reduction was due to SIR BENJAMIN SCHLICK, a gentleman who had long been engaged professionally amongst the ruins of Pompeii, and was now exercising his talents in the establishment of Messrs. ELKINGTON. The testimonial that they saw before them was reduced by machinery. The original, which was about two feet high, was in the museum of Palermo. The outline of this group, then, with all its beauties, was the production of the gentleman named. The execution was the work of Messrs. Elkington."

6. Compositional Historicism: The Schlick/Briot Ewer.

In *Victorian Electroplate*, Bury also alludes to what I believe is Schlick's key contribution to the art of electro-metallurgy when she writes, "Schlick never hesitated to improve on the originals if he thought it desirable...."²²⁵ Once a plaster or wax cast had been made, Schlick would restore works that were damaged, and 'improve' upon the original as he saw fit, reshaping and rescaling them, and combining parts of one work with parts from another. His decidedly latitudinarian approach to historical veracity, or even original artistic intent in his approach to the 'restoration' of archaeological artworks and artifacts had been standard practice in the preceding two centuries. Some of the most noted sculptural restorers, like Bartolomeo Cavaceppi (1716-1799),²²⁶ were driven more by the aesthetics of commerce and market demands of collectors and dealers, until a more scholarly approach finally began to prevail in the 1840s. Among Schlick's electrotypes, which featured prominently among Elkington's exhibits at Birmingham in 1849, several are listed as "from a cast, taken upon the original, the defective parts restored by the Chevalier Schlick," or more simply "composed from the antique."

In 1854, the Museum of Manufactures purchased an electrotyped ewer from Elkington for £9.9s. It is a version by Schlick of an ewer by the celebrated French pewterer François Briot (c.1550-1616). (Fig.24.) The ewer's body is decorated with allegorical cartouches ornamented with foliated scroll and strap work. However, the stem of the electrotpe is more elongated than Briot's original, and the original handle, surmounted with an arching female figure, has been straightened. The result is a deliberate exaggeration of the harmonious forms of Briot's original ewer into a more stylized design intended by Schlick to better exemplify the Mannerist characteristics of the *Edelzinn* (display pewter) for which Briot was famed. The electrotyped ewer is electro-

²²⁵ Bury, 1971, p.28.

²²⁶ Montagu, 1989.

plated and partially gilt, but the silver has been oxidized to give it a darker silvery-grey patina, which imitates the antique pewter original. The oxidized silver also provides a bolder contrast to the brighter gilding, like damascene. The ewer was sold as one of 'Henry Elkington's Art-Manufactures,' and the base of the ewer is stamped with the maker's mark and date: "Publ. by Elkington Mason and C^o. / Octr. 1852."

Schlick's pastiche of Briot's style in the re-creation of this ewer typifies his alteration of original designs. Clearly he felt that the mountings of Briot's ewer were not elongated enough to give it the stylized proportions and compositional tension required of a true Mannerist masterpiece. The art of electro-metallurgy made it easy for Schlick to alter historic designs without damaging or destroying the original artwork. Once moulds were acquired from the original, a plaster or wax version could be freely remodelled. Different mountings, such as a longer stem or straighter handle could be soldered or brazed onto an electrotype of the original body to subtly, or not so subtly, alter the original design. The brazed assembly was then electro-plated and gilt to make it appear like a solid and integral artwork. Once the silver was oxidized, with key motifs highlighted in parcel gilt, it retained most of Briot's original virtuosic workmanship refashioned into a slightly different design, with a little more *brio* than Briot. Schlick's purpose was not only to create a more immaculate looking work of antiquity, but also to take credit for redesigning and 'improving' the original using intellectual conceits that posed as artistic virtuosity. His overt refashioning of Briot's ewer, altering the design and workmanship of the greatest pewterer in art history, reveals he had little respect for the artist's original intention or historical reputation.

In strict art historical terms, Schlick was not really an artist or designer. His role might be more accurately described as a commercial content provider. This in no way diminishes his contribution to the creative development of the art of electro-metallurgy; rather it seems entirely in keeping with the early-Victorian fashion for indiscriminately

mixing and adapting elements of past styles. Schlick was among the first to realise how Elkington's technology could be used creatively to reshape and recombine structural forms and ornamental motifs, and thereby recycle the aesthetic experience and conceptual content of art historical works, by rearranging and stylistically altering them into new "improved," assemblages. This pioneering use of Elkington's technology for the recreative recombination of pre-existing forms and motifs as transposable components is closely analogous to 19th-century musical and architectural historicism, and is an important genre-characteristic of the art of electro-metallurgy, which I have termed 'compositional historicism.'

7. Dr. Emil Braun (1809-1856): *Classical Iconography*.

The early-Victorians that acquired Elkington's electrotypes of Antique and High Renaissance artworks wanted to display their classical education, and antiquarian knowledge and taste. Those who aspired or pretended to such 'cultivation' also acquired them. Since 1670, when the concept of the Grand Tour was defined by Richard Lassels in *The Voyage of Italy*,²²⁷ it had been an educational rite of passage for the British cultural elite to travel through Paris to Rome, Florence, Naples, and Venice, usually guided by a learned 'governour,' to study what remained of the classical world and see the masterpieces of the Italian *Rinascimento*, whilst socializing with fashionable European society. Lassels's influence on the transfer of European influence into Britain is immeasurable. In his 'Preface,' Lassels claimed his guidebook offered two valuable lessons: an explication on 'the profit of travelling' and 'travelling with profit.' For the first lesson, Lassels cites Homer (as quoted by Horace in *Ars poetica*) comparing Ulysses, who "had travelled much, and had seen multorum hominum mores & Urbes, the Cittyes and Customes of many men,"²²⁸ to Telemachus, who was kept at home by his mother. For the second lesson, Lassels basically recommends employing a good cicerone: "not onley a gentleman born, but a gentile man also by breeding: a man not onley comely of person by nature; but graceful also by art in his garbes and behaviour: a good Scholar, but no meer Scholar: a man that hath travelled much in forrain Countryes..."²²⁹

Lassels' prescription serves as a good description of the role that Dr. [August] Emil Braun assumed in Rome from 1833-1856. As Secretary to the *Deutsches Archäologisches Institut*, members of the European nobility visiting Rome frequently employed him as a cicerone. In early 1839, he guided the 19-year old Albert of Saxe-

²²⁷ Lassels, 1670.

²²⁸ Lassels, 'Preface,' 1670. The Latin citation is Homer quoted by Horace in *Ars poetica* (II. 140-1): ...*qui mores hominum multorum vidit et urbes* (...who saw the manners and cities of many men).

²²⁹ *Ibid.*

Coburg and Gotha around Rome. Ten years older than Albert, Braun was born in Gotha, the Ernestine duchy to which Albert was heir. The future Prince Consort (Queen Victoria proposed to him on 15th October that year) extolled Braun's qualities as a guide in a letter home to his stepmother of 22nd March 1839: "He easily can obtain access everywhere, he is known all over the place, and thanks to his really profound knowledge of archaeology and ancient history he often called my attention to things which most foreigners either overlook or misunderstand."²³⁰

By the 1780s, the heyday of the Grand Tour as an exclusive privilege of the nobility was over, as wealthy landed gentry began imitating the practice. During the first half of the 19th-century wealthy industrialists increasingly began joining them. In November 1847, Josiah Mason went on a busy industrialist's brisk imitation of the Grand Tour, which was recounted by Bunce: "In Italy he made a large collection of bronzes and other works of art, in gold, silver, and other metal work, intending to use them in the business of Elkington and Mason, but much of the collection was lost by the death of an agent at Naples, whose effects were seized by the Government, and could never be recovered."²³¹ Unlike the lengthy, leisurely Grand Tours of the nobility, Mason's cultural holiday was little more than a recuperative change of scene necessitated by years of overwork, and lasted less than six-months before his business concerns, and the waves of nationalist unrest that spread across the Hapsburg Empire in 1848 following the February Revolution in Paris, compelled him to return to Britain.

Schlick possibly arranged the loss of Mason's collection in Naples, which Mason had acquired to lessen the firm's dependence on Schlick. Mason, on his part, possibly arranged for Schlick's collection of casts to be impounded by French customs officials when Schlick travelled to Paris after the February Revolution. Many of Schlick's models were broken, leaving him bereft. Whatever the truth may be, there is no doubt that the

²³⁰ Royal Archives, VIC/MAIN/M/34/51. See: Marsden, 2012.

²³¹ Bunce, 1882, p.144.

acrimonious rift between the two adversaries (the wealthy, self-made British industrialist and the extravagant, perennially-bankrupt Danish dilettante with aristocratic pretensions) hastened the replacement of Schlick by the more scholarly Dr. Emil Braun as Elkington's supplier of classical and Renaissance models.

Braun had written to G.R. Elkington from Rome on 18th March 1846 to introduce himself and offer his services, following an introduction from a mutual friend,²³² James Tooke, who was formerly a partner in the manufacturing jewellers and silversmiths Tooke, Dixon & Tooke at 37 Hatton Garden in Clerkenwell. Tooke had recently married, and sold his interest in the family business to study for the church. He was wintering with his bride in Rome, where he made the acquaintance of Braun, who possibly acted as a *cicerone* to the newlyweds.

Born in 1809, Braun and Henry Elkington were the same age, and the correspondence shows that Braun quickly developed a close acquaintance and working-relationship with the younger of the two cousins.²³³ A ledger belonging to Henry survives that details royalty payments for 284 models supplied by Braun from 1849-51.²³⁴ Braun also supplied models of contemporary neoclassical works by artists he knew in Rome, including Johann Werner Henschel (1782-1850) and John Gibson (1790-1866), and a large group of models of works by Bertel Thorvaldsen (1770-1844), some of which were exhibited at Birmingham in 1849.²³⁵ Most impressive is Braun's *Classical Iconography*, a series of portrait busts of famous figures from Antiquity listed in the ledger.²³⁶ In his correspondence, Braun provided Henry Elkington with detailed scholarly critiques of some of the more important models he supplied, which included some of the finest works of Roman Antiquity and the Italian Renaissance. Many were from the Vatican

²³² Elkington, AAD/1979/3/1/8, p.133.

²³³ Elkington, AAD/1979/3/2/4.

²³⁴ Elkington, AAD/1979/3/2/4. Ledger.

²³⁵ *Catalogue*, Birmingham 1849, p.40-45

²³⁶ Elkington, AAD/1979/3/2/4. Ledger.

collections, including the *Barberini Candelabra*. These wonderfully detailed descriptions were later developed into his *Handbook for the Ruins and Museums of Rome: A Guidebook for Travellers, Artists, and Lovers of Antiquity*, published in Germany in 1854²³⁷ and Britain in 1855.²³⁸ Although quickly overshadowed by Jacob Burckhardt's *Der Cicerone*,²³⁹ and long out of print, it remains one of the most readable and comprehensive guidebooks to the art, ruins, and archaeology of ancient Rome, presenting insightful and scholarly descriptions that are accessible to a popular audience.

On 20th October 1849, Braun married Anne Thomson (1810-1863), the daughter of James Thomson (1779-1850), the wealthy calico printer and industrial chemist. It is clear from Braun and Henry Elkington's correspondence that they had plans to greatly develop their arrangement into a partnership supplying electrotypes reproductions of works of art and fictile ivories to Elkington. The preparation and publication of *Specimens Of Ornamental Art* ²⁴⁰ with the designer, engraver, and consultant on "decoration, decorative design and picture buying"²⁴¹ to Prince Albert [Wilhelm Heinrich] Ludwig Grüner (1801-1882), and the death of Braun's father-in-law, both in 1850, postponed Henry Elkington and Emil Braun's plans together. On 12th September 1851, shortly before the Great Exhibition closed, Henry acquired all of Braun's stock of models. However, Henry's death the following year ended Braun's relationship with Elkington & C^o., and Braun died, aged 47, on 12th September 1856 in Rome.

Braun had first traveled to Italy in the autumn of 1833 to assist Friedrich Wilhelm Eduard Gerhard (1795-1867) as an amanuensis. In Rome, he was swiftly appointed as Librarian and then Secretary to the *Deutsches Archäologisches Institut* (D.A.I.), a post he retained until his death. Gerhard had founded the *Istituto di corrispondenza archeologica* at

²³⁷ Braun, 1854.

²³⁸ Braun, 1855.

²³⁹ Burckhardt, 1855.

²⁴⁰ Grüner and Braun, 1850.

²⁴¹ Marsden, 2010.

Rome in 1829 (the precursor to the D.A.I.) for the purpose of studying ancient art and epigraphy and sharing the results of research through publication. Braun had studied classical archaeology at Göttingen, Munich, Dresden, and Paris before Gerhard invited him to Berlin, and his secretaryship at the D.A.I. brought him into contact with many of the leading classical archaeologists, historians and philologists, including the pioneering archaeologist, linguist and Egyptologist [Karl] Richard Lepsius (1810-1884); Wilhelm Ludwig Abeken (1813-1843) a leading scholar on ancient Italy; [Johann Heinrich] Wilhelm Henzen (1816-1887) the philologist and leading authority on Latin epigraphy; Theodor Mommsen (1817-1903), the archaeologist who founded the comprehensive collection of ancient Latin inscriptions *Corpus Inscriptionum Latinarum*, and the classical philologist Friedrich Gottlieb Welcker (1784-1868).²⁴² Through Gerhard, Braun also became acquainted in Rome with the Danish neoclassical sculptor Bertel Thorwaldsen. Emil Braun's association with the D.A.I. and the leading archaeologists and classical scholars in Rome and Germany greatly improved the antiquarian and art historical merit of Elkington's electrotypes.

The greater scholarly credibility that Braun brought to Elkington's electrotypes is revealed in a review of the Birmingham Exhibition of 1849 in the *Art-Journal*, written by the scientist and antiquarian Robert Hunt (1807-1887). It focuses on Braun, without once mentioning Schlick: "In our notice of the exhibition, we have already alluded to some electrotypes exhibited by the Messrs. Elkington; but from the important position they promise to take in the progress of Art-education, we are induced to return to a consideration of their merits. From the facilities which the process of electro-deposit offers for the reproduction of any works of art, it has occurred to Dr. Braun to aim at procuring facsimiles of the finest specimens of antiquity by such means."²⁴³

²⁴² For histories of *Instituto di corrispondenza archeologica* and *Deutsches Archäologisches Institut* see Pfeiffer, 1968, p.219-220.

²⁴³ Hunt, 1849, pp.335-336.

The article by Hunt is notable for various reasons: Firstly, in the four years that he had been supplying models to Elkington, no such article had been written about Schlick, and Hunt attributes the idea wholly to Dr. Braun, the repeated use of the prefix ‘Dr.’ stressing his academic rather than amateur credentials. “This gentleman has for some years been resident in Italy, and during that time he has most industriously obtained moulds of many of the sculptor’s art to be found in the Vatican, and in other public and private collections in the Italian states.”²⁴⁴ Secondly, Hunt identifies “the important position they promise to take in the progress of Art-education,” and the affordability of electrotypes to all that are educated. “The republication of these at such a price as will place them within the reach of all who are educated to appreciate the value of these beautiful efforts of thought...”²⁴⁵ The literary connotations of the word ‘republication’ liken electrotype editions of sculptures to cheaper editions of books. Thirdly, Hunt announces that Elkington intend to extend their electrotype programme: “It appears that the designs of Messrs. Elkington are not only to reproduce by this method the finest statues, busts, bas-relievos, vases, &c. of ancient art, but to extend the process to the multiplication of the works of modern artists.”²⁴⁶ Lastly it is the first mention of Braun’s *Classical Iconography*, a series of electrotypes of portrait busts of famous figures of antiquity, and also of ‘Fictile Ivories.’²⁴⁷

Tantalisingly, Hunt mentions that Elkington and Braun had published a pamphlet, titled *Classical Iconography*, which described the series of portrait busts: “A little pamphlet, “Classical Iconography,” by Dr. Emile [*sic*] Braun, has been placed in our hands. This gentleman has caused the portraits of those writers and statesmen of classical antiquity, which are undoubtedly genuine, to be skilfully copied on a reduced scale. These elegant reproductions will be multiplied by the aid of the electrotype, in castings more or less fine

²⁴⁴ *Ibid.*

²⁴⁵ *Ibid.*

²⁴⁶ *Ibid.*

²⁴⁷ *Ibid.*

and solid; so that every one, according to the extent of his means and his taste in Art, may obtain whatever style of workmanship suits him best for the adornment of his study table.”²⁴⁸ I have not been able to trace a surviving copy of this pamphlet, but Hunt indicates that the project was already well underway. “Already published by Messrs. Elkington are the following: – Double Hermes of Herodotus and Thucydides, Sophocles and Aristotle; these are speedily to be followed by the portraits of Æschylus, Alexander the Great, and Demosthenes. The moulds for these have been obtained from the Museo Borbinico, at Naples, and from the Lateran Museum.”²⁴⁹

Even for those who were not part of the educated classes, and had not studied *Litterae Humaniores* at Oxford, the influence of the ‘Greats’ were felt everywhere in the critical interpretation and cultural values of Victorian society. Frank M. Turner’s 1981 study shows how the re-interpretation of classical culture shaped the political and moral values and social mores of Victorian Britain, and remained a primary influence in the shifting currents of intellectual history throughout the 19th-century. “That now dissipated general familiarity with the classics was once one of the distinguishing and self-defining marks of the social and intellectual elite of Europe. It had originated in thoroughly aristocratic times and endured through the first century of the liberal democratic age.”²⁵⁰ The extent of that “general familiarity with the classics” can be seen in the Victorian’s popular fascination with the archaeological remains of the sculpture of classical antiquity, and the ubiquity of scholarly, and pseudo-scholarly, articles in popular periodicals and newspapers. Hunt wrote of Braun and Elkington’s *Classical Iconography*, “For those who love to hold communion with the old classics it will be a source of great enjoyment and

²⁴⁸ *Ibid.*

²⁴⁹ *Ibid.*

²⁵⁰ Turner, 1981, p.4.

intellectual instruction thus to enter into a kind of personal intercourse with the great spirits to whom we are indebted for these immortal productions.”²⁵¹

Because knowledge of the classical world in Victorian Britain was based so profoundly on narrative interpretations of the ‘Greats’ and their visual association with archaeological remains, especially figurative statues and reliefs, an inextricable bond was formed between literary, sculptural, and architectural experience. Robert Kerr in *The Gentleman’s House* (1864) avowed that the library was the best place for busts and statues. “Statuary is eligible in a superior room; and busts on the top of bookcases and on pedestals in occasional recesses, more or less accidental, are always worthy of place, and indeed of prominence. ... In a Library of superior class, although excessive display is still undesirable, the architect will be allowed a little license, sometimes a good deal, in the exercise of his talents for interior effect; and by constituting the bookcases, sculptures, &c., as parts of his design, he may, even without pretension, produce a composition which shall be of considerable artistic merit. Indeed cases are frequent in which a good Library, by being comparatively elaborated in this way, becomes the show-room of the house.”²⁵²

Another important development noted in Hunt’s review of Elkington’s display in 1849 is the first mention of their production of fictile ivories. “Desiring to render such productions and the superior works of our own artists, familiar to the great public, Messrs. Elkington also bring forward copies of these and other works of Art in a material which they have named Fictile Ivory. These are preparations of the finest plaster of Paris, which, by nice manipulation, is made to absorb stearine or some similar agent.”²⁵³ Where the requisite care is taken, the imitation of ivory is most perfect; and in all the productions now published by this firm, the results are exceedingly good. These fictile ivories will do

²⁵¹ Hunt, 1849, p.336.

²⁵² Kerr, 1865, p.119.

²⁵³ Stearine is a colourless ester of glycerol and stearic acid, $C_3H_5(C_{18}H_{35}O_2)_3$, which occurs naturally in animal and vegetable fats. It was widely used in the 19th-century to manufacture soaps, candles, and glues.

much to cultivate a taste for the Arts, since, by this mode, the finest models, or ivory and miniature sculptures, may be multiplied at a comparatively trifling cost, and thus find their way into the hands of those from whom at present they are entirely excluded.”²⁵⁴ It harks back to G.R. Elkington’s listing in *Wrightson’s Directory* of 1835 as a manufacturer of “real and imitation pearl, black and gilt ornaments,”²⁵⁵ and was developed alongside Alexander Parkes’s experiments of 1845-46 with *converted rubber* and other materials that could be cast and carved like ivory.

At the Birmingham *Exhibition of Manufactures and Art* in 1849, Elkington displayed an unprecedented collection of electrotypes of statuary and plate from classical antiquity and Italian High Renaissance sources, which they displayed alongside contemporary neoclassical works, most of which were acquired from Italy by Schlick and Braun. Prince Albert toured Bingley Hall in blaze of publicity on 12th November 1849. “Turning to the truly magnificent stalls of Messrs. Elkington & Mason, a minute examination of the various articles followed, in which his Royal Highness was aided by the lucid explanation of Mr. Henry Elkington; the exquisite bronzes, copies from Pompeian vessels, &c., which have been so successfully accomplished by this firm were much praised.”²⁵⁶

An indication of Prince Albert’s personal involvement in promoting the art of electro-metallurgy is that prominent at the display in Birmingham were three Classical busts, *The Capitoline Brutus*,²⁵⁷ “Sophocles, from the statue in the Museum of St. John, in the Lateran, at Rome,”²⁵⁸ and “Corinna, from the Bust at Villa Albani.”²⁵⁹ These were all electro-deposited by Emil Braun in Rome and acquired for Prince Albert by Braun’s friend Lewis Grüner. To show his support for Braun and Elkington’s project, Prince

²⁵⁴ Hunt, 1849, p.336.

²⁵⁵ *Wrightson*, 1835.

²⁵⁶ *Art-Journal*, 1st December 1849, p.378.

²⁵⁷ Emil Braun, *The Capitoline Brutus*, electrotype, 1849, Royal Collection, RCIN 41881.

²⁵⁸ Emil Braun, [Bust of] *Sophocles, from the statue in the Museum of St. John, in the Lateran, at Rome*, electrotype, 1849, Royal Collection? Whereabouts unknown?

²⁵⁹ Emil Braun, *Corinna, from the Bust at Villa Albani*, electrotype, 1849, 48.3 x 29.2 x 22.2 cm, Royal Collection, RCIN 42633.

Albert loaned them for the Birmingham Exhibition.²⁶⁰ Displayed on the same table alongside Braun's *Classical Iconography*, were three 'bronzed' copper electrotypes of contemporary portrait busts of the young royal family, Queen Victoria and Prince Albert with the seven-year old Prince of Wales, modeled by the Belfast-born sculptor Patrick MacDowell, and "published by Henry Elkington."²⁶¹ Prince Albert's support for Elkington's application of the art of electro-metallurgy to the production, replication, reduction, and reproduction of modern and ancient art could not have been more clearly communicated.

²⁶⁰ *Catalogue*, Birmingham 1849, p. 42.

²⁶¹ *Catalogue*, Birmingham 1849, p. 41.

8. Narrative Plate: *The Prodigal Son* and *The Temperantia Basin*.

On 1st April 1850, *The Art-Journal* published an essay titled ‘Sideboard Plates With Plastic Ornaments’ by Emil Braun. Because of his high public standing as a scholar, and as *cicerone* and artistic advisor to Prince Albert, the essay was an influential promotion of sideboard plates as a bravura demonstration of Renaissance goldsmiths’ artistry and design. Braun promoted “the bright epoch of the cinque-cento,” the 16th-century, as a time when “the goldsmiths’ work... displayed a peculiar style of delicate ornament often affording a refined detail worthy of the overflowing luxuriance of a higher domain of art.” Braun’s essay in *The Art-Journal* was, in affect, an attempt to socially transform the not-so humble sideboard in British dining and drawing rooms from a vulgar place, where Victorians were apt to show off their wealth with a display of ‘massive’ silverware, into a more refined place of art historical connoisseurship that displayed modern and historical ‘specimens’ of decorative art and sculpture.

In 1864, Kerr’s influential book, *The Gentleman’s House*, stressed the importance of the sideboard in a British household, and emphasized the correct position in the dining room in order to best display a gentleman’s plate. “It need not be said also that there is a certain importance about a good sideboard, which demands one end of the room for itself. Indeed the general practice of forming a special recess in that position for its reception can scarcely be improved upon. The sideboard ought never to be surmounted or even flanked by windows; because not only are the operations of the servants brought into prominence, but when a gentleman does honour to his guests by displaying his plate, its effect may be destroyed by the glare of the light.”²⁶²

Braun’s essay gave a detailed analysis of several sideboard plates, historic and modern, all of which were manufactured by Elkington & C^o. By carefully decoding the

²⁶² Kerr, 1865, pp.93-94.

arrangement of their ornamental motifs he revealed the horizontal surfaces not only as exquisite designs but also as a form of moral storytelling on a par with great history painting. Braun especially extolled Elkington's electrotyping technology for making such historic and contemporary objects more affordable. "Formerly works of this description were enjoyed only by the favoured few," he wrote, "whose wealth enabled them to appropriate such rare and precious specimens of artistical [*sic.*] skill. The process of electrotyping has now, by its power of infinite multiplication, brought them within the reach of the many, who with moderate, even limited, means, may thus surround themselves with the choicest productions of genius."²⁶³

Braun begins his essay with an analysis of a dish that is now one of the highlights of the V&A's metalwork collection, and one of the finest examples of *Edelzinn* in existence.²⁶⁴ Made c.1585 by François Briot, it depicts the biblical story of *The Prodigal Son*. The central medallion however in the dish described by Braun, and engraved in *The Art-Journal*, is from a different *tazza* altogether, *The Temperantia Basin*, also by François Briot, and one of the most accomplished and famous of all *Edelzinn* basins. *The Temperantia Basin* has been more popularly known as the *Venus Rosewater Dish* ever since a partially gilded sterling silver version of it was made by Elkington in 1864, and presented as the Ladies' Singles trophy at the All England Lawn Tennis and Croquet Club's Wimbledon Championships in 1886. (Fig.25.)

Braun's essay is important because it identifies an important revivalist genre in late 18th and 19th-century metalwork, to which I would like to give the term 'narrative plate'. It comprises broad, often concave, but mainly flat art metalwork, which may take the form of shields, large *tazze*, which are shallow saucer-like dishes mounted on a stem and/or foot, chargers and salvers, which are large service plates or sideboard dishes that are decorative and for display rather than functional, and which depict literary, historical,

²⁶³ *Art-Journal*, 1st April 1850, p.113.

²⁶⁴ *Edelzinn* means 'precious pewter.'

mythological, or allegorical subjects. Some monumental vases and ewer and basin pairings may also be considered as ‘narrative plate.’

It must be stressed that ‘narrative plate’ is by no means an 18th and 19th-century invention, and its origins can be found in many earlier forms of metalwork, particularly 16th-century chargers, shields and *taqqe*. Neither did the replication, reproduction, reduction, and imitation of ‘narrative plate’ begin in the 18th and 19th-centuries. However, the defining characteristic of ‘narrative plate’ as a distinctly 19th-century genre is the primacy of the object’s ornamental and literary function in relation to the emergence of a mass reading public, popular press, and series of international exhibitions that gave rise to the phenomenon of mass spectatorship during the Victorian years after 1851, and which, coupled to the technological means of mass reproduction facilitated by the art of electro-metallurgy, transformed ‘narrative plate,’ in the form of shields and sideboard dishes, into a popular art form.

In writing about the social and political forces that shaped the cultural geography of Paris in the first half of the 19th-century, Éric Hazan described how a general rejection of traditional categories of literary composition prompted restless plundering and syntheses of the ruptured forms of the past: “The hierarchy of genres, according to which certain forms were naturally designed for particular social strata, could no longer hold out. Through newspaper supplements that were sold in the streets, the novel invaded the fashionable salons, libraries, and the back rooms of wineshops. Everything could become the subject of drama, verse, story, or song, and all subjects were equal here, so much so that there was no longer any compulsory relationship between form and content. Vague intermediate zones would disrupt the borders between art and what was traditionally not accepted as art.”²⁶⁵

²⁶⁵ Hazan, 2002, translated by David Fernbach, 2010, p.316.

Briot's original *Temperantia Basin* dish is signed 'FB' just underneath the allegorical female figure of temperance on the central boss. Briot was the most celebrated member of a French dynasty of medallists and die-cutters, and although he is regarded as one of the finest makers of pewter in history, he was a model carver and patternmaker of medals that made copper moulds in which pewter works were cast, rather than a pewterer in the strict traditional sense. *The Temperantia Basin* is his only surviving signed work. The intricacy of the modelling is highly accomplished and the dish would have been extremely expensive to make. It is most likely that Briot's patron was Friedrich I, Duke of Württemberg (1557-1608).

Schlick had procured moulds of this work for Elkington from a silver copy of *The Temperantia Basin* in the Louvre. However, the Louvre's version was not by Briot, but was made at Nuremberg c.1600 by Caspar Enderlein (c.1560-1633), who had acquired Briot's moulds when he died. When Enderlein cast his version of Briot's dish, he replaced the signature 'FB' in the central boss with his own 'CE.' In the modern era it has become one of the great taboos of artistic practice for an artist to copy or sign another's work as if it were their own, but throughout art history it was a common practice, especially in the technical arts when a means of facsimile reproduction is freely available. By the first quarter of the 17th-century, when Enderlein was working, moulds were not only being made by master pewterers but by professional mould cutters and metal casters, who freely added their own monograms to the designs that they replicated and reproduced. As moulds were sold from workshop to workshop, artworks were cast in the same mould with additions and alterations made to the original designs and maker's marks.

Elkington & Co.'s electrotype of Schlick's cast of Enderlein's cast of Briot's *Temperantia Basin* was first displayed at The Exhibition of Manufactures and Art held at Birmingham in September 1849. However, Schlick's mould and cast of the basin were almost certainly among those destroyed *en route* to Paris during the February Revolution

of 1848, so Braun procured another cast of the Louvre's dish for Elkington a year after Schlick had made his. So, the electrotype of *The Temperantia Basin* that Elkington made in 1864 that is presented each year to the ladies' singles champion at Wimbledon is either a reproduction of a cast made by Schlick in 1848, or by Braun in 1849, both of which were casts of a copy made by Enderlein, c.1600, of an original masterpiece cast in pewter by Briot, c.1585. Such is the nature of many of Elkingtons' electrotypes; they are simulacrum of simulacra, which demand a kind of archaeological tracing back through successive overlays of art historical narratives. They play havoc with the sacrosanct ideals of authorship, uniqueness, and originality being the basis of a great artwork.

9. George Clark Stanton (1832-1894) and *The Temperantia Guéridon*.

Over a year before the Great Exhibition, but clearly with the event in mind, Prince Albert commissioned Elkington to make a guéridon, a small, circular-topped table, with a columnar stem supported by sculptural figures. Associated with 17th-century French furniture, the table's figurative supports evoked Greek caryatids. The Prince Consort's guéridon was to incorporate an electrotype of the *Temperantia Basin* as its top. A young, Birmingham-born designer and modeler, named George Clark Stanton, who was still apprenticed to Henry Elkington, was tasked with designing the tripod-pedestal of the table. The table remains in the Royal Collection and is on display at Osborne House.

(Fig.26.)

George Clark Stanton (1832-1894) was educated at King Edward's Grammar School, Birmingham, and on 6th October 1847 he was apprenticed for seven years to Henry Elkington. His Indenture describes Henry as a "Modeler and Manufacturer," from whom he would "learn the art of his trade as designer & modeller."²⁶⁶ As part of his training he attended courses at the School of Design in Birmingham. On 22nd June 1850, the *Birmingham Journal* published an extract from the annual report of the committee of *The Birmingham Society of Arts and School of Design*. "The committee feels bound to call especial notice to a design of peculiar merit, for a table, to be electrotyped in silver by Messrs. Elkington, for his Royal Highness Prince Albert, and which is intended for the grand Exhibition of 1851. The young artist who has produced this exquisite design, has received his entire professional education in this establishment, and his talents give promise that, with application, he will become one of the most eminent designers of his day."²⁶⁷ He was evidently highly thought of at the School of Design because that year he won three of the annual 1st prizes, "For the best outline from the Antique, with head,

²⁶⁶ Elkington, AAD/1979/3/1/8, p.153.

²⁶⁷ *Birmingham Journal*, Saturday 22nd June 1850, p.3.

hand, and foot, shaded, the size of life;” and predictably, given that he had designed the pedestal of a table for the Prince Consort, “For the best Design for Manufacture,” and “For the best General Work during the previous year.” Stanton was 18-years old when he designed the guéridon, and he also designed a Bracket Candelabrum that was exhibited by Elkington in 1851.

The design of the tripod-pedestal of the table has snarling panthers as feet, with the demure bare-breasted figure of Pomona, the Roman goddess of orchards, repeated three times around the stem above, offering fruit in the folds of drapery around her waist. At the top of the table’s stem the *Temperantia Basin* is supported by three repeated pelicans in the act of ‘vulning,’ each with her wings endorsed and neck bowed, self-wounding her own breast with her beak to nourish her young with her blood. The heraldic “pelican in her piety” (with her brood) or “pelican vulning” (alone) is a mystical emblem of Christ, which appears on British reredos and monumental brasses. Stanton’s model of the table was electrotyped in copper-alloy and then electro-plated and partly electro-gilded. The principles employed in its design, such as the curve of the drapery repeated by the gilded festoons, and the simplicity of the intaglio motifs in the gilding surrounding the silver bearded masks on the base, is striking in its elegant restraint and repetitious simplicity for 1850. The formal simplicity of the figure of Pomona is clearly inspired by the neoclassical sculpture of Richard James Wyatt, John Gibson, and Thorwaldsen. In 1849-50, Henry Elkington acquired numerous casts of marble and plaster reliefs by Gibson and Thorwaldsen from Braun, which Stanton must have studied.

Schlick is identified as the artist on the underside of the *Temperantia Basin*, which he did not design, whereas Stanton’s name does not appear on the base that he did design. Elkington became great exponents of using their maker’s mark as an additional signature, a commercial and corporate overlay to that of the individual artist or designer who made the original model from which any number of subsequent copies could be made.

However, rather than supplanting the signature of the original artist as Caspar Enderlein had done to François Briot by replacing 'FB' with 'CE,' Elkingtons placed their maker's mark, Elkington & C^o. or sometimes just E&C^o., alongside that of the artist on an artwork, drawing the artist into a corporate partnership in which both reputations gained by association.

With the unexpected death of Henry Elkington in October 1852, Stanton lost his mentor, and seems to have lost his way under Charles Grant. To complete his apprenticeship, and as a reward for his service, Elkington's sent him to study the art of the Renaissance and classical antiquity in Florence and Rome. Whilst in Italy, in May or June 1854, he joined Garibaldi's *Camici rosse* (Red Shirts), and fell in love with the 17-year old Clara Gamgee (1837-1894), the daughter of Joseph Gamgee, a veterinary surgeon from Edinburgh. Stanton was introduced to Clara by her Italian-born brother Sampson Gamgee (1828-1886) a surgeon at Queen's Hospital, Birmingham. On 6th October 1854, having completed his time at Elkington, Stanton left the firm, married Clara, and settled near her family in Edinburgh, pursuing a career as a sculptor, watercolourist, and tutor at the Royal Scottish Academy's Life Schools.

10. Elkington's Art Gallery, May 1850.

A year before the Great Exhibition, in the summer of 1850, Elkington's organized an exhibition at their Regent Street showroom in London. On 1st May 1850, *The Art-Journal* gave it an enthusiastic review titled "ELKINGTON'S ART GALLERY." "The Messrs. Elkington have devoted the floor immediately over their Electro-plate Show-room in Regent Street, to an exhibition of Bronze Statuary, Antiquities, and Fictile Ivory;" they effused, "all executed by them, in a manner most satisfactory. To ensure this they have been assisted by excellent native artists; and have produced by means of Electro-deposit, Bronze Statuary, and other first rate works of Art, unknown in England except as matters of importation; and which they hope to prove, may be as well effected by home manufacture."²⁶⁸ The enthusiastic review placed great emphasis on "the collection of bronzes," and praised the firm's promotion of contemporary 'native artists,' but particularly extolled the electrotypes reproductions of "Ancient And Medieval Art." "The collection of Bronzes comprises faithful busts and basso-relievos, from the most celebrated works of Ancient and Medieval Art. Electro-deposited Shields and Dishes, some by Michael Angelo and Benvenuto Cellini; copies of the rarest vases, cups, and lamps, from Pompeii and Herculaneum and many new and beautiful designs in Fictile Ivory, in which, at a moderate price, very excellent imitations of ivory-carving may be attained."²⁶⁹

The commercial object of ELKINGTON'S ART GALLERY was undoubtedly inspired by Ernest Gambart's groundbreaking new art gallery on Pall Mall, but the subject of Henry Elkington's exhibition of "Ancient and Medieval Art" was inspired by the influential "Exposition of Ancient and Mediæval Art," which had been staged the previous month by the Society of Arts. Having organized the *Exhibition of Art Manufactures*

²⁶⁸ *Art-Journal*, 1st May 1850, p.163.

²⁶⁹ *Ibid.*

in 1847, 48, and 49, and assumed a leading role in organizing the Great Exhibition planned for the following year, Henry Cole, with Augustus Wollaston Franks, under the auspices of the Society of Arts, organized an exhibition of loaned objects. The objects were chosen, by a committee chaired by Prince Albert, with the aim of enthusing potential exhibitors and subscribers to the 1851 exhibition with an opportunity to see artworks that were usually inaccessible to the general public. “This scheme consists of the formation of a temporary Museum of objects of Ancient and Medieval Art,” wrote *The Art-Journal* in its review of the exhibition, “We heartily congratulate the Society of Arts on the important step it has taken in thus setting before the manufacturer specimens of the Art-manufactures of our ancestors, giving him an opportunity of imitating their excellencies [*sic*] and avoiding their excesses, besides placing before his eyes many works of Art, the results of processes now no longer employed, but which it will be his business to consider the propriety of reviving.”²⁷⁰

The exhibition was hugely important, both in terms of the collection of artworks it managed to assemble and the ways in which they were classified and categorized by material, mode of manufacture, and art historical timeline, and also in the manner in which they were chosen and curated to emphasize the importance of good design over materials and workmanship. “This exposition, moreover, offers another grand elucidation of the principle, that the merit of every manufacture depends mainly upon the first design. Every object exhibited impresses this fact more strongly on the mind. Here are some relics of Mediæval or Renaissance Art, fascinating from their beauty, and rivetting [*sic*] attention even in the midst of the other interesting articles which surround them and yet how much of their beauty do they derive from their execution? ...the work stands before us full of beauty, which is owing to no fine chiseling or exact workmanship, but which

²⁷⁰ *Art-Journal*, 1st April 1850, p.102.

depends solely on the fact, that the man who devised it was an artist who perfectly understood the principles of form and harmonious combination in design.”²⁷¹

The Art-Journal particularly praised the exhibition’s layout, with works carefully categorized in a way that can be seen both as a trial run for the arrangement of the Great Exhibition, and also the Museum of Manufactures at Marlborough House, which was founded in May 1852, and was the forerunner of the South Kensington Museum and the V&A. “There seems scarcely to be any one of the Arts of Antiquity which has not its representative in the Collection, and all have been classified and arranged with judgment and ability, if we consider the difficulties that must arise in such matters with regard to Chronology, and also the various opinions necessary to be conciliated with respect to both the history and process of many objects.”²⁷²

Artworks were loaned to the Society of Arts by an unprecedented number of important collections, and included both wealthy private patrons, and historic institutions, like guilds and colleges, many of who were listed in an insightful snapshot of art ownership in 1850 by *The Art-Journal* review: “Cups from the halls of our City Companies and other communities appear in abundance, and it is especially creditable to such exclusive bodies as University Colleges that they have come forward to assist the committee with the loan of their valuable plate, for the most part of early date and interesting features. Several of the important private collections of objects of *virtu* have also been placed at the disposal of the Society, and by this means many treasures of Ancient Art, always before inaccessible to the public, stand open to general investigation.” “Elkington’s Art Gallery,” following swiftly on the heels of the Society of Arts’ exhibition, showed that it was possible to electrotype such works of art to make facsimile copies of them widely and freely available, both as affordable retail commodities, and as models for art-education. Art historians have now largely forgotten these two exhibitions in the

²⁷¹ *Ibid.*

²⁷² *Ibid.*

summer of 1850, which were eclipsed by the historic spectacle of the Great Exhibition only a year later, but were important precursors, not only to key aspects of the organization of that event, but also to the South Kensington Museum's long-running programme of commissioning Elkington & C^o. to procure casts and manufacture electrotype reproductions of works of art, which began in October 1853.²⁷³

²⁷³ Burton, 1999.

11. Elkington & C^o. and *The Journal of Design and Manufactures*, 1849-1851.

In Henry Cole, in the late 1840s and early 50s, Elkingtons found an ardent promoter of their new art. It was a timely connection, just at the moment at which Cole, through his involvement in the Great Exhibition and close association with Prince Albert, became the most influential person in British art and design. At the same time that he was promoting the concept of art-manufactures through the Summerly's venture, Cole, with the painter Richard Redgrave, also founded and co-edited *The Journal of Design and Manufactures*. From 1849-1852, six volumes of the short-lived but influential *Journal* were published, which focused exclusively on the promotion and improvement of the decorative and applied arts in Britain. Its polemical editorial style and content was aimed at improving the quality of design in British industry, and, at the same time, elevating the taste of its middle class readership to demand higher quality and creativity from British manufacturers in the objects they bought for their homes.

In 1847, Redgrave had begun teaching at the Government School of Design, becoming headmaster in 1848. He was appointed inspector-general for art at the Science and Art Department in 1857, and played a key role with Cole in establishing the South Kensington Museum. Throughout the three years of its publication, Cole and Redgrave gave strong editorial support to Elkingtons and the new art of electro-metallurgy. "...it is in the works of Messrs. Elkington and Mason that we may see the most interesting series of experiments carried out on a truly grand scale," they wrote in an early edition of September 1849, "and one which, we have no hesitation in stating, is calculated within a very few years to materially modify, if not to completely change, the aspect of metal manufacture in Birmingham. It is, indeed highly gratifying to find any manufacturers so

studious in uniting the twin sisters, Science and Beauty.”²⁷⁴

In the art of electro-metallurgy, Cole found the union of art, science and industry that he was attempting to promote both through Summerly’s *Art-Manufactures* and *The Journal of Design and Manufactures*. The ethos behind both ventures made it quite clear that Cole believed that invention in the arts, especially the discovery and development of new materials, tools, and techniques, new ways of making tasteful things, was the key to social improvement and thereby the progress of civilization throughout history. The cover of every issue of *The Journal of Design* included a quotation from Daniel Defoe’s *History of Projects*: “Inventions of arts, with engines and handicraft instruments for their improvement, requires a chronology as far back as the eldest son of Adam, and has to this day afforded some new discovery in every age.”²⁷⁵

In the three years of its publication, which spanned the few short years between the Birmingham Exhibition of 1849 and the Great Exhibition of 1851, *The Journal* ran numerous illustrated features on Elkington’s art-manufactures, which reveal how Felix Summerly’s influence affected a rapid transformation in the originality and variety of the firm’s designs, and shaped the aesthetic ethos of its productions. In particular, Summerly’s artist-led approach inspired Henry, and subsequently Frederick Elkington, to extend the approach taken in employing Schlick and Braun to procure art historical models to the employment of contemporary artists to produce original designs and models for art-manufactures. Across three successive volumes between March 1850 and August 1851, a period that included the first four months of the Great Exhibition, *The Journal of Design* enthusiastically promoted a succession of art-manufactures made by Elkingtons.

In May 1850, Cole included illustrations of *A Bell* and a *Taper Candlestick*. The ruby-glass and electro-gilded bell was described as “a very sparkling and brilliant novelty,”

²⁷⁴ *Journal of Design*, No. 7, 1850, p.14.

²⁷⁵ Defoe, 1697, pp.19-20.

whilst the electrotyped candlestick was praised as “...one of the most graceful adaptations which the “natural” school has produced.”²⁷⁶ Almost certainly designed around an electrotype of an actual leaf, Cole enthused about the combination of new technology and good design: “It is delicately light and a beautiful specimen of the electro-process, shewing how it may perfectly realize all the effects of fine beaten metal-work, and much more cheaply.”²⁷⁷ It is notable that Cole describes them as “manufactured by Henry Elkington,” and not by Elkington & C^o., making it quite clear who at the firm was responsible for the art-manufactures. If Mason was the mass-manufacturer, and G.R. Elkington the master-gilder, after the demise of Benjamin Smith III, Henry was responsible for recruiting the artistic staff and resources and establishing the remarkable design department that the partnership began to develop in preparation for the Great Exhibition.

²⁷⁶ *Journal of Design*, No. 15, 1850, p.86.

²⁷⁷ *Ibid.*

12. Henry Elkington's Art-Manufactures.

A file and other correspondence in the Elkington company records reveals that from c.1849 Henry Elkington was supplying art-manufactures to Elkington & C^o's Newhall Street and Regent Street showrooms.²⁷⁸ This venture appears to have grown out of the success of the electrotype art-reproductions at the Birmingham Exhibition of 1849, and was clearly inspired by Henry Cole's Felix Summerly's venture. 'Henry Elkington's Art-Manufactures' was conceived to replace the patterns previously supplied by Benjamin Smith III, and the models supplied by Schlick. *White's* Birmingham directory for 1849-50 lists Henry Elkington's younger brother Charles as an electro-metallurgist working at 44 Camden Street, Birmingham. By the time of the 1851 census, he was styled as 'a bronze and works of art agent,' which strongly indicates that he was employed, or had entered into partnership with Henry, producing art-manufactures supplied exclusively to Elkington & C^o at 44 Camden Street.

The premises at 44 Camden Street backed onto Henry's house at 23 Summerhill Terrace, and was used primarily for casting and large-scale electrotyping because it was near the Newhall Hill sandpits, which supplied moulding and casting sand. The development of the Charles Colmore's New Hall estate into Birmingham's toymaking and jewellery quarter owed much to the fact that it is underlain by Bunter Upper Mottled Sandstone, a moulding sand that is especially suited to brass foundry work. Elkington & C^o. recruited many technically skilled artisans that had learnt the caster's craft in the town's brass trade. Assisted by his younger brother Charles, Henry Elkington supplied the firm with electrotype editions of busts and figures using Schlick and Braun's models. A sculpture reduction machine, designed by Achille Collas, was almost certainly also

²⁷⁸ Elkington, AAD/1979/3/1/1, pp.89-92 and AAD/1979/3/2/4.

operated at Camden Street. From 1849-1852, these productions, although retailed by Elkington & C^o, were styled ‘Henry Elkington’s Art-Manufactures.’

Correspondence confirms that Henry Elkington was responsible for establishing the art-manufactures branch of the company. A letter, dated 21st September 1850, details an agreement between Henry on the one hand, and G.R. and Mason on the other, regarding a proposal to expand their Regent Street showroom by leasing an adjoining retail property in Jermyn Street. Following the enthusiastic review in *The Art-Journal* of “ELKINGTON’S ART GALLERY,” Henry persuaded his business partners to permanently display art-manufactures in the London and Birmingham showrooms. The letter guaranteed that if the Regent Street expansion went ahead Henry would pay his partners £400 if, for any reason, he stopped supplying the London showroom with art-manufactures. Henry was in effect agreeing to underwrite the entire risk of expanding the retail showroom into a permanent art gallery: “Being anxious that the Regent Street house of Elkington Mason & C^o. should be enlarged partly for the better display of ‘art manufactures,’ which I am now supplying to them on sale. I hereby agree that should you take the adjoining house in Jermyn Street as contemplated for that purpose, and that I should hereafter from any cause withdraw my stock from the house or discontinue the supply that I will pay to the firm of Elkington Mason & C^o. the sum of four hundred pounds as part of the expenses that may arise to them in consequence of the said increased accommodation.”²⁷⁹ Written eight months before the Great Exhibition, it is a remarkable letter, which shows that Henry clearly foresaw the opportunity that 1851 presented to the company.

From the outset, Henry Elkington was always the junior partner in the firm. In September 1850, he was the youngest of three partners at forty years of age. Henry Cole, Owen Jones, Henry Elkington, Emil Braun, and George Wallis were all near-

²⁷⁹ Elkington, AAD/1979/3/1/1, p.91.

contemporaries; born in 1808, 1809, 1809, 1810, and 1811 respectively, they were all just entering their forties at the time of the Great Exhibition. In his essay 'Continuity,' G.M. Young wrote, "If I am thinking of year, the question is 'who were in their forties then?' to the twenties I go for shaping of ideas not fully disclosed: to the forties for the handling of things already established."²⁸⁰ They had all entered their formative early twenties at the time of the religious and political reforms of the late 1820s and Great Reform Act of 1832. In comparison, during the tumultuous social changes of the Reform era, G.R. was married with four of his seven children, and had been a partner in his uncle's business since 1824. Likewise, Mason was married and running two successful manufacturing businesses.

Although Henry was G.R.'s cousin, brother-in-law, and business partner, the finance, management, and business strategy during the 1840s was undoubtedly driven by the energy, experience, and close partnership of G.R. Elkington and Josiah Mason. However, the correspondence with Schlick and Braun indicates that from the outset Henry assumed the role of creative director. By 1849-50, on the eve of the Great Exhibition, it was clear that sustaining commercial success increasingly depended upon applying good design to the innovative technology they had developed. It was Henry's application of the art of electro-metallurgy to Henry Cole's concept of art-manufactures that became the basis of the company's enduring creative and commercial success. As press coverage focused more on the company's artistic endeavours, he also became the public face of the company. On Monday 26th November 1849, *Aris's Birmingham Gazette* reported, "We have pleasure in noticing that the visit of Prince Albert to the Exposition has already been the means of introducing to her Majesty the beautiful productions of one of our principal manufacturers. On Wednesday last, Mr. Henry Elkington of the firm Elkington, Mason, and C^o., attended at Windsor Castle, by command of his Royal

²⁸⁰ Young, 1950, p.49.

Highness, to submit for inspection some of their works of art, from which a selection was made, and further orders given.”

Having extended their London retail premises on Regent Street into the adjoining building on Jermyn Street to accommodate Henry’s art-manufactures in September 1850, by the end of the following year Elkington were profiting hugely from the publicity that they had received at the Great Exhibition. In December 1851, Henry Cole’s *The Journal of Design* reported that Elkington were now busy extending their Newhall Street showroom in Birmingham into a spectacular gallery that could reprise some sense of their display at the Great Exhibition. “The spirited and enterprising firm of Elkington, Mason, and C^o., have [*sic.*] reaped a rich reward from their Exhibition contributions. Orders flow in rapidly upon them; and they, in no niggard spirit, continue to extend their already extensive premises; their new show-room, which will be opened to the public in a few days, is one of the most magnificent apartments we have seen devoted to such a purpose; but the display will be worthy of the receptacle.”²⁸¹

Around the same time, in late 1851, shortly after the Great Exhibition had closed, Elkington published a brochure titled, CATALOGUE OF THE ART MANUFACTURES, BRONZE SCULPTURES, ARTISTIC AND DECORATIVE PLATE, SERVICES, &C., &C., COMPRISING ADAPTATIONS OF SELECT EXAMPLES OF ANTIQUE AND MEDIÆVAL ART, MADE AND PUBLISHED BY HENRY ELKINGTON FOR ELKINGTON, MASON, & C^o., 1851.²⁸² The capitalized title leads notably with ‘art-manufactures’ and ‘bronze sculptures,’ written in large type, followed by ‘artistic and decorate plate, services &c.’ in a slightly smaller type. Beneath the date, 1851, is a coroneted oval crest around which is written ‘ART AND MANUFACTURE BIRMINGHAM.’ At the foot of the page it proudly announces that the Council Medal was awarded to Elkington, Mason, & C^o. for the “Artistic Application

²⁸¹ *Journal of Design and Manufactures*, No. 34, 1852, p.127.

²⁸² *Catalogue of the Art Manufactures...* by Henry Elkington, 1851.

of the Electrotype.”

The use of the term ‘art manufactures’ so prominently in the title and text openly emulates Felix Summerly’s catalogues of the late 1840s. The catalogue also announces emphatically that the art-manufactures are “MADE AND PUBLISHED BY HENRY ELKINGTON, FOR ELKINGTON, MASON & C^o,” and ‘Henry Elkington’ is written larger and in bolder type than that of the firm. The prominent use of his name indicates both the degree of public recognition and reputation for discernment in matters of design he had established at the time of the Great Exhibition. It suggests that at the time of his death in 1852, Henry, with the backing of his partners, was actively promoting his own public profile, especially his art historical knowledge and aesthetic taste, as a creative adjunct to the corporate reputation and maker’s mark, much as Cole had done with his pseudonymous trademark Felix Summerly.

Matthew Digby Wyatt gives some indication of Henry’s creative public reputation in *The Industrial Arts of the Nineteenth Century*, a review of the ‘choicest specimens’ of the Great Exhibition, which was published just after Henry died on 26th October 1852. Wyatt included a palmary elegy to Henry’s artistic influence: “At a time when, in point of art, the manufactures of Birmingham certainly did not deserve great credit, that gentleman commenced his active career, and by his zeal and enterprise greatly tended to raise the standard, not only of the manufacture in which he was specially engaged, but by his example also that of others more or less connected with the arts. Although not himself a practicing artist, his correct taste enabled him to direct the artistic talent which he engaged to the production of objects of the highest class of art-manufacture.”²⁸³

In a telling phrase that reveals Henry’s inspiration, the subsequent title page of the catalogue announces that the art-manufactures, bronzes, and plate comprise, “ADAPTATIONS OF SELECT EXAMPLES OF ANTIQUE AND MEDLÆVAL

²⁸³ Wyatt, 1852, Plate 138.

ART.” The catalogue contains engravings of several well-known statues of classical antiquity, offered as reduced electrotypes. They evoke the marbles and bronzes of the British Museum, which wealthy, well-traveled Victorians would have the museums of Paris and Rome, but reduced to fit the modern British sideboard or study table. “No. 186, *Dancing Faun* from the antique in the museum of Naples” is the famous bronze from the *impluvium* of the eponymous *Casa del Fauno* at Pompeii.²⁸⁴ The engravings are particularly redolent of Piroli’s engravings of Flaxman’s neoclassical outline drawings of mythological figures.²⁸⁵

²⁸⁴ *Dancing Faun*, copper-alloy, 2nd-century B.C., H.71cm, Museo Archeologico, Naples, Museum Ref. 5002.

²⁸⁵ Flaxman and Piroli, 1870.

13. Charles Grant (1801-1883) and the *Iliad Salver*.

In May 1852, Elkington & C^o. appointed Charles Grant, an experienced journeyman designer and modeler, who had worked for Benjamin Smith III, as the company's first chief artist. According to a Memorandum of Agreement dated 17th May 1852, he was appointed to "...undertake the entire management care and direction of all employed in the modeling department (apprentices included) and further if required to superintend and direct the execution in metal of the first copy of all new models so produced."²⁸⁶

Henry Elkington's health began to fail him in spring 1852. His nephew, Frederick, who would eventually take over his uncle's creative direction of the firm, was still only 25 years old. When Henry died on 26th of October 1852, Charles Grant became the senior creative manager at the company.

The following year on 29th September 1853, the firm also employed the Frenchman Pierre Emile Jeannest (1813-1857) to "undertake the entire management care & direction of all French work people employed by the said Elkington, Mason & C^o. in the modeling department and further to superintend and direct the French chasers & casters." Correspondence confirms that both Henry and Frederick Elkington spoke and wrote fluently in French, and the appointment of Jeannest in 1853 was both an indication of the growing number of French employees at the company. The joint appointment of Grant and Jeannest was an acknowledgement that Frederick was not yet experienced enough to manage the talented creative team his uncle Henry had begun to assemble. It indicates how quickly the Art Department and creative strategy developed, along with the scale of operations at the Newhall Street and Brearley Street works in the immediately aftermath of the Great Exhibition.

The Memorandum also reveals that Grant was paid eight pounds eight shillings a

²⁸⁶ Elkington, AAD/1979/3/1/8, p.163.

week, agreed to work eight hours a day, and was paid for any overtime he worked. Most interestingly, it was specified in his service agreement that Elkington's had the right to publish his name alongside their own on every artwork he designed and modeled for them, unless the purchasers of the artwork objected. "And it is further agreed that the name of the said Charles Grant together with the names of Elkington, Mason, & C^o. shall be published to any work he may so design and model in all such cases that it may not be objected to by the purchasers during the aforesaid term of three years."²⁸⁷

There is no biographical literature about Charles Grant, and no major reviews of his work. According to various online genealogical sources, and census records, he was born at Westminster in 1801, making him the same age as G.R. Elkington, and 51 years old when he became the company's chief artist. He married Ann Dawson in 1830 in St. Pancras, London. At the time of the 1841 census, he was listed as an 'artist,' living at Mornington Place in St. Pancras with his wife Ann (aged 35), and 4 children (3 daughters and 1 son) Eliza (9), Ann (6), Charles (3), and Caroline (11 months). At the time of the Great Exhibition, and just before he was employed by Elkington, the 1851 census lists him as a 'designer modeller of the human figure,' living with his wife Ann, and 4 children (2 daughters and 2 sons), Eliza (19), Charles (13), Caroline (10) and George (8). His brother, John Grant, aged 46, who is described as an 'artist's assistant,' was also living with them, along with a 'visitor' named Martha Tobin. The description of his occupation as a 'designer modeller of the human figure' is an unusually specific description.

Successive Post Office directories from 1848-60, list Charles Grant Esq. as resident at 2 Hurdwick Place, Hampstead Road, indicating that he and his family did not vacate his London residence during the three-year term specified in the Memorandum, from May 1852 until May 1855. His house at Hurdwick Place was ideally placed to commute regularly between London and Birmingham, very close to Euston railway

²⁸⁷ *Ibid.*

station on Drummond Street, which was the terminus of the London and North Western Railway. By the 1861 census, he was still listed as a ‘designer modeller of the human figure’ at 2 Hurdwick Place with his wife, Ann, and 4 children (2 daughters and 2 sons), Ann (26) Caroline (20), sons Charles B. (23, who is listed as a ‘clerk to brewer’), and George (18). His brother John was also listed again, but was now ‘clerk to seals engraver.’ His wife’s sister, Martha Grant [née Dawson] was also resident and was John’s wife. Martha Tobin, the ‘visitor’ of 1851, was also still resident and listed as Charles’s aunt, aged 80. In the 1871 census, he was listed as living at 32 Grange Road in Hackney, and styled as an ‘artist painter sculptor,’ but was now a ‘widower, age 70.’ His son, Charles B., aged 33, ‘clerk to stockbroker,’ was listed as head of household. The only other resident is Charles B.’s wife, Mary (26). In the 1881 census, they are all living at 105 Powerscroft Road in Hackney, and Charles, despite being aged 80, is still styled as a ‘sculptor.’ Charles Grant Sr. is not listed with Charles B. in the 1891 census. His probable year of death is 1883, but there are no surviving wills or probate listed.²⁸⁸

Grant came to Elkington’s attention through his work in the 1840s for Benjamin Smith III. Most notably *The Macready Testimonial* he designed for Smith, which gained great public acclaim when it was presented to the famous actor William Charles Macready on 19th June 1843, in appreciation primarily of his performances, and historical restoration of the texts of Shakespeare’s plays. The frosted and burnished silver centerpiece depicted the Bard of Avon holding a rolled manuscript and lyre, whilst, at his feet, the seated figure of Macready discusses various historical volumes of the plays with three actresses. The tripod base and feet are entwined with scrollwork and *Laurus nobilis* that suggest that Macready, like Shakespeare, is a laureate. The playwright and actors are all classically attired, but the frozen poses of the ensemble lack theatrical élan, and affect an air of scholarly reflection. Their poised frontal arrangement, mitigated by precious touches of

²⁸⁸ Genealogical extracts were provided by Ann Christie and Ann Eatwell, who are researching Charles Grant’s designs for Edward Barnard & Sons.

realism in the falling drapery and theatrical props, is meticulously neoclassical. Putti on the base hold masks and bas-reliefs in oval cartouches depicting scenes from Shakespeare's plays in theatrical settings.

The earliest documented design by Grant for Elkington was a 'bronze' sideboard dish, almost certainly a copper electrotype with a bronze-like patina, which was exhibited at the Birmingham Exhibition of 1849. It depicted a scene from the mythological story of *Acis and Galatea* as recounted in Ovid's *Metamorphoses*. Grant's original neoclassical design was exhibited alongside various other "Specimens of Bronzes &c." on Table No. 56 at Birmingham. The table display exhibited several original neoclassical designs by different contemporary artists made using the electrotype process, alongside electrotypes of artworks of classical antiquity. Other contemporary works were *Anacreon and Cupid* by Bertel Thorwaldsen (c.1770-1844), *The Seedsman* and *The Harvest Home* by Werner Henschel (1782-1850),²⁸⁹ which were all in the neoclassical style. Alongside these modern works were electrotype reproductions of Roman art, including two bas-reliefs from Speda, *Bellerophon at the Fountain* and *Adonis Dying*, and electrotypes of *Minerva Medica* and *Mars* from the marble *Barberini Candelabra* now in the Galleria della Statue of the Museo Pio-Clementino in the Vatican. Emil Braun acquired all of these works for Elkington, both ancient and modern, from Rome.

Grant's inclusion on Table No. 56 shows how in 1849, Henry Elkington began acquiring and commissioning original contemporary designs to exhibit alongside the electrotypes of art historical works sourced by Schlick and Braun. In his illustrated lithographic review of the 'choicest specimens' at the Great Exhibition, Matthew Digby Wyatt observed astutely how Elkington & C^o. was attempting to develop electrotyping from a technology used simply for making slavish copies of existing artworks, albeit works of great art historical merit, into a creative process that added to the canon of art

²⁸⁹ [Johan] Werner Henschel (1782-1850) was a Prussian sculptor who studied the neoclassical style under the painter Jacques-Louis David in Paris in 1805. He moved to Rome in 1844 where he met Emil Braun.

history. “In tracing, therefore, the progress of Messrs. Elkington, it is satisfactory to find that from year to year they have been endeavouring to emancipate themselves from the thralldom of copying only, and adding fresh graces and new and native beauties to the objects upon which their producing energy is concentrated.”²⁹⁰

In 1851, Elkington exhibited Grant’s *Acis and Galatea* dish again, this time as part of a set of three dishes each depicting a scene from the mythological story. Alongside these works was a large sideboard dish in silver relief, partially gilt, its subject taken from Homer’s *Iliad*, which developed the idea of presenting a series of tableaux used in the *Acis and Galatea* triptych in a single object. Unlike Beattie’s *The Triumph of Science and the Industrial Arts*, it was an original composition that was reproduced and exhibited repeatedly as electrotype editions, making the *Iliad Salver* the first masterpiece of the art of electro-metallurgy.

Like *The Triumph of Science and the Industrial Arts*, the original *Iliad Salver* is also now lost. More surprisingly, considering its popularity during the early-1850s, no electrotype exists in any major public collection, and the only known image is an engraving in *The Art-Journal*. It shows the complexity of the composition, with fifteen compartments presenting “sculpted pictures,” bas-relief tableaux that narrate a series of scenes from Homer’s *Iliad*.²⁹¹ (Fig.27.) In the central compartment is the supplication of Jupiter by Thetis to give the Greeks justice for the wronging of Achilles. In the four angular compartments of the inner band are the nymphs that attend Thetis, and in the two small circular panels of the inner band depict Thetis consoling Achilles, and Thetis presenting Achilles with the armour made for him by Vulcan. The eight bas-reliefs around the outer band depict the contention of Achilles and Agamemnon; the heralds of Agamemnon, are taking the beautiful Briseis from the tent of Achilles; the Greeks being driven back to their fortifications; Menelaus, Meriones, and the Ajaxes, carrying the body of Patroclus

²⁹⁰ Wyatt, 1852, Plate 79.

²⁹¹ *Art-Journal*, 1st October 1856, p.305-8; *New-York Daily Tribune*, 29th July 1853, p.6.

back to the ships; Achilles driving the Trojans from their entrenchments merely by appearing on the walls; Achilles grieving over the body of Patroclus; Achilles dragging the body of Hector round the walls of Troy, and Priam tearfully supplicating Achilles to return his son Hector's body.

However, it was not at the Great Exhibition that the *Iliad Salver* truly captured the imagination of the Victorian public. On the 6th January 1853, an electrotpe of it was presented as a testimonial to Charles Dickens, at a banquet given 'In honour of art and literature' by the Birmingham Society of Artists. Dickens was also given a diamond ring made by Thomas Aston of Regents Place. The electrotpe of the *Iliad Salver* was inscribed: "This salver, together with a diamond ring, was presented to Charles Dickens, Esq., by a number of his admirers in Birmingham, on the occasion of the Literary and Artistic Banquet held in that town on the 6th of January, 1853, as a sincere testimony of their appreciation of his varied literary acquirements, and of the genial philosophy and high moral teaching which characterize his writings."

The story was reported in newspapers up and down the country, from the *Isle of Wight Observer* to *The York Herald*.²⁹² To express his gratitude, Dickens offered to give a public reading of "A Christmas Carol" at Birmingham to raise money to found the Birmingham and Midland Institute, an institution that sought the "Diffusion and Advancement of Science, Literature and Art amongst all classes of persons resident in Birmingham and the Midland counties." The subsequent reading, which he gave at the end of that year on Tuesday 27th December 1853, was Dickens' first public reading and launched his recital career.²⁹³ The association with Dickens added considerably to the widespread press and public fascination with the *Iliad Salver*. From May-October 1853, Elkington exhibited an edition of the *Iliad Salver* at the Great Industrial Exhibition in Dublin, and from July-November that same year they exhibited another edition in New

²⁹² *Isle of Wight Observer*, 15th January 1853; *York Herald, and General Advertiser*, 15th January 1853, p.3.

²⁹³ Kent, 1872.

York, at the first International Exhibition in America. It was Elkingtons' first success abroad, and demonstrated that electrotype editions of an original contemporary design could be exhibited and sold long after the original was sold (or lost), and also that they could be shown simultaneously, even on opposite sides of the Atlantic. The aura of an exact sculptural facsimile made it immaterial to technologically enraptured Victorians whether it was the original or the electrotype that was being displayed.

The *Iliad Salver* provided a blueprint for the firm's show-stopping narrative plate at a succession of universal exhibitions that followed 1851. In particular, Grant's complex compositional attempt to visually narrate an entire book of epic poetry was a precursor to the great repoussé shields that Léonard Morel-Ladeuil sculpted for Elkington's, *The Milton Shield* (1867), and *The Bunyan Shield* (1878), which I will describe in my final chapter. Just as their Birmingham precursors, Edward Thomason and his successor G.R. Collis, had endlessly promoted their reproductions of *The Warwick Vase*, Elkington's repeatedly exhibited their grand showpieces; keeping them in the public eye to foster their fame. Five years after the *Iliad Salver* was made, it was exhibited yet-again as a showpiece on Elkington's trophy in the Birmingham Court of the Crystal Palace at Sydenham, which prompted *The Art-Journal* to publish a full page engraving of its design: "These sculpted pictures – for such they are – show consummate skill in drawing; although many of them contain numerous figures, each is perfected with rare skill, and will bear the test of the minutest scrutiny as regards either composition or manipulation: the work, as will be seen, is very elaborate, and may be regarded as a proof of the capabilities of this establishment to encounter and overcome difficulties."²⁹⁴

In lieu of the original salver or any of the electrotypes editions, the engraving in the *Art-Journal* is essential in that it confirms the superlative influence on Grant's 'sculpted pictures' and 'consummate skill in drawing' was John Flaxman's outline drawings of

²⁹⁴ *The Art-Journal*, 1st October 1856, p.307.

Homer's *Iliad* and *Odyssey*. Sarah Symmons has shown how several generations of French artists and designers, working in all kinds of media, beginning with David in the 1790s, and especially after the French publication of his Homeric drawings in 1793, drew on Flaxman's outline drawings as patterns to be used as components in the design of new compositions.²⁹⁵ However, I think that Symmons was incorrect to suggest that after his death John Flaxman (1755-1826) was less influential in Britain than France. "That austere and high-minded sculptor became a rather shadowy figure in his own country after his death. It was in France that his work provoked the most fruitful imitation and research throughout the nineteenth century."²⁹⁶ Whilst this may arguably be true of subsequent developments in 19th-century British painting and sculpture, and I would strongly argue that was not the case. Symmons herself remarks how universal his literary outline drawings were: "Flaxman's illustrations to the classics were, possibly, the most renowned sets of imagery to emerge from the late eighteenth century. As curios, Flaxman's outlines appeared in the libraries of most nineteenth-century collectors."²⁹⁷ It also overlooks the enormous influence Flaxman had on several generations of British designers in the decorative arts through his work at Wedgwood and Rundell. Equally, it overlooks how Flaxman's influence was bought back into British art by successive waves of French émigré artists and designers working in Britain.

The single most influential work of British art-metalwork of the early 19th-century was Flaxman's *The Shield of Achilles*, commissioned in 1810 by Philip Rundell (1746-1827) of Rundell, Bridge & Rundell and acquired by George IV in 1821.²⁹⁸ The design was based on the description in Homer's *Iliad* of the legendary shield made for Achilles. The circular convex shield has a large central boss cast in high relief depicting Apollo driving

²⁹⁵ Symmons, 1973, pp.591-599.

²⁹⁶ Symmons, 1973, p.596.

²⁹⁷ Symmons, 1973, p.591-2

²⁹⁸ John Flaxman (designer) and Philip Rundell (goldsmith), *The Shield of Achilles*, 1821, Silver gilt, 90.5/90.5/10.0 cm, Royal Collection, RCIN 51266 (Reference: XQG 2002 188).

his quadriga across the heavens, surrounded by allegorical female figures representing the constellations. The low bas-relief of the surrounding border is a continuous circular frieze depicting the spectrum of human life; marriage, feasting, dancing, armed conflict, agriculture, and justice. Three more silver-gilt versions were subsequently cast for wealthy aristocratic patrons. *The Shield of Achilles* became the 19th-century archetype of numerous 'narrative plate' shields and sideboard dishes, among which the *Iliad Salver*, with its Homeric subject and narrative composition, is one of the most directly derivative.

Symmons called *The Shield of Achilles* "that most scholastic of works." Coming late in Flaxman's œuvre, the composition draws on his reading of Homer in Greek, and Pope's English translation, suffused with self-borrowings from his vast back-catalogue of outline drawings. As Symmons writes, "The sequences of linked pictures were all restrained to that affecting simplicity which, paradoxically, always suggested the pattern-book as well as the improving lesson."²⁹⁹ Flaxman's compositional method was of huge appeal to nineteenth-century artists increasingly able to draw on publications and reproductions that made the whole canon of artistic and literary sources available. Symmons shows how Flaxman derived his outline drawings from what he saw as ideal prototypes from the received canon of western art history, reducing famous artworks into a series of patterns, which were subsequently recycled by artists throughout the 19th-century, most notably in France. "Nearly every plate in Flaxman's Homer, Dante, Aeschylus and Hesiod can, similarly, be traced back to some perfect model, of which the outline is no more than a meagre shadow."³⁰⁰

Flaxman's approach to figurative composition, the sourcing of ideal models from which to create a type pattern that could be repeatedly adapted to any variety of subjects is analogous to Schlick's *compositional historicism*, but also to Owen Jones attempts to define more discriminate principles of good design by defining the 'grammar of ornament.'

²⁹⁹ Symmons, 1973, p.596.

³⁰⁰ Symmons, 1973, p.592.

According to Symmons, “The new idea in Flaxman’s work lay in the artist’s individual choice of prototypes and their adaptation to a narrative use.”³⁰¹ Like *The Shield of Achilles* the narrative of the *Iliad Salver* revolves around a central boss, but rather than the continuous visual panorama of a classical frieze the various compartments were designed to be perused in turn, like the pages of an illustrated journal or serialized novel. It was a profoundly literary visual experience, a thoroughly modern way of assimilating both story and image that was familiar to the increasingly literate population of early-Victorian Britain. Charlotte Barrett has written of how the great expansion of literacy in the early 19th-century was facilitated by pictures because the alphabet was commonly learnt using pictorial prompts, and serialized novels by writers like Dickens were illustrated to broaden their popular appeal. “The history of nineteenth-century printing is tightly interwoven with that of illustration. Many serialised novels were accompanied by illustrations depicting scenes from the text, ranging from full double-page images in illustrated newspapers such as *The Graphic* to tiny vignettes enclosing the first letter of the opening chapter in periodicals such as *The Cornhill*.”³⁰²

³⁰¹ *Ibid.*

³⁰² Barrett, 2015.

14. Elkington & C^o. and The Great Exhibition.

At Birmingham in 1849, next to Grant's bronze dish depicting *Acis and Galatea* was another contemporary design for a small sideboard dish by the wealthy French art patron Honoré d'Albert Luynes (duc de, 1802-1867), which represented *The Seven Days of the Week*.³⁰³ In the 1840s, before the consolidation of the 2nd Empire, the duc de Luynes was an influential grand seigneur and patron of neoclassical and classicizing sculptors, including Pierre-Jules Cavelier, Pierre-Charles Simart, and François Rude. In 1849, the inclusion of Luynes's design was shrewd politicking; even if Elkington were unaware he would be appointed Chairman and Reporter the Jury of the precious metalwork section at the Great Exhibition. Luynes's design was, of course, included again in 1851, where the Jury awarded Elkington a Council Medal, the highest honour.

An electrotype of Luynes's design was acquired by the Museum of Manufactures in 1852.³⁰⁴ Like Flaxman's archetypal *Shield of Achilles* the central boss depicts Apollo in his quadriga, dispensing night and day. As if to emphasize the literary and reproductive quality of the electrotype, the maker's mark says, PUBLISHED BY ELKINGTON & C^o. The oval mark on the back of the plate is emblematic of the business model Elkington was developing for their electrotypes, along the lines of the international gallery and retail networks established by the printsellers Goupil, Gambart, Moon, and Buffa in the 19th-century, and which had developed from Remondini and Boydell in the 18th-century. Luynes's plate in the V&A is one of the few electro-metallurgical objects exhibited in any major museum that endeavours to display and explain the granular texture on the back as indicative of the electrotype process, which shows the curatorial and art historical

³⁰³ *Catalogue*, 1849, pp. 40-45.

³⁰⁴ Albert, duc de Luynes (designer), Elkington & C^o. (maker), *Plate, The Seven Days of the Week*, 1852, copper electrotype, V&A, London, Museum No. REPRO.1852B-2.

indifference with which the art of electro-metallurgy has been regarded since the late 19th-century.

Luynes wrote in his Report, “Several vases, such as copies of the cups from Herculaneum and Pompeii, and various articles of ornament, are made entirely of pure silver deposited by the action of electricity. They are usually lined with wrought metal, either to give them regularity of form, or to render them fit for use.”³⁰⁵ As probably the foremost connoisseur of precious metalwork alive, those two sentences by Luynes symbolically expresses the ambivalence of wonderment with reservations that conceptually framed the art of electro-metallurgy in 1851. That the finest artworks and archaeological remnants of the ancient world could be made anew in copper, German silver, silver or gold ‘by the action of electricity’ was undoubtedly one of the greatest marvels of the new industrial age, but beneath the electrodeposited surface they were still wrought as they always had been using the long traditions of metalwork, sculptural techniques (carving, casting, modeling, and assemblage) and figurative and ornamental design, which gave them ‘regularity of form,’ and made them fit for purpose.

Shirley Bury has written³⁰⁶ of how the 1851 Jury desired “...to guard against being considered as expressing an opinion on the merit of the application of the electro process of silver plating to objects of domestic use. They desire only to commend the artistic application of this discovery, to which lone they are inclined to think it adapted.”³⁰⁷ Bury points out that this was probably due to the influence of several Jury members with vested interests in the trade. James Garrard was Prime Warden of the Goldsmiths’ Company, but his firm was the second in London (after Edward Barnard & Sons) to take out a license from Elkington to electro-plate and electro-gild. However, as I previously

³⁰⁵ *Catalogue*, 1851, pp. 1121.

³⁰⁶ Bury, 1971, p. 37-38.

³⁰⁷ *Catalogue*, 1851, pp. 1121.

mentioned, Robert Younge was also Juror, and resolutely represented the interests of the decimated fused-plate trade in Sheffield.

Elkington however were not without their supporters on the Jury. Westley Richards, who was yet to inherit the family gun-making business from his father, had been Chairman of the Birmingham Exhibition in 1849, and the designer Ludwig Grüner was a close friend of Emil Braun. It was actually the oak *Jewel-cabinet*, designed by Grüner and made by Elkington, in gilt and enameled copper, with portraits upon porcelain of the Royal Family, which the Jury specially recommended for the Council Medal. It was commissioned by Prince Albert for Queen Victoria and exhibited in the main aisle of the Crystal Palace where its royal association ensured it was one of the most universally admired works in the Great Exhibition, and a major public endorsement of the art of electro-metallurgy. Even today, long after the event, it retains a propagandist aura in the vibrancy of the porcelain portraits in gilt frames promoting the youthful glamour of young royal couple. Prince Albert in armour is redolent of the full-length marble statues of 1844/1846 by Emil Wolff, whilst the Queen in her late Renaissance dress and manner, embracing the devoted young heir apparent, expresses fecundity and dynastic confidence, which is echoed by the Royal and Saxe-Coburg arms.

However, like Elkington's newspaper advertisements it relays a subtle and complex-layered message. Positioned in the central aisle of the Crystal Palace like a modern reliquary, the secondary message that supported and enriched the primary one was what made Elkington's *Jewel-cabinet* truly emblematic of the whole experience of the Great Exhibition. Supported at its corners by electro-plated caryatids, and with a silvered putto holding a cornucopia in a niche between the portraits, it was a revivalist shrine to modernity that displayed the Prince Consort's support of the application of cutting-edge science and technology to ancient artistic traditions, and placed the Royal Family as the enduring centre of Britain's industrial transformation. Prince Albert's championing of the

art of electro-metallurgy with the *Jewel-cabinet* and *Temperantia Guéridon* in 1851, and Braun's *Classical Iconography* in 1849, demonstrated that industrial progress did not necessitate cultural and social upheaval, but could be used to revive and conserve artistic traditions founded in the great civilizations of the past.

15. Electrotypes for the Department of Science and Art.

On 13th October 1852, Norman Macleod of the Department of Science and Art, then based at Marlborough House, Pall Mall, London, wrote to Elkington, Mason & C^o. on behalf of the Lords of the Privy Council for Trade inviting them to make electrotypes, “with the view of enabling the Department and the Public at large to obtain casts, Electrotypes &c. of valuable works lent to the Department for study.”³⁰⁸ Workspace was made available at Gore House and the Elkington’s services were retained “as an experimental arrangement for one year.” The Department of Science and Art’s intention was to make copies for the new Museum of Manufactures that had been established that year. The “experimental arrangement” was to last until the outbreak of the 1st World War, although electrotypes continued to be made fitfully by Elkington & C^o. for the V&A into the 1920s.

Henry Cole and Richard Redgrave were central to the foundation of the new Museum. In 1852, building on their work at the Great Exhibition, Cole was appointed head of the new Department of Practical Art, with Redgrave as Superintendent for Art. After the Department of Practical Art became the Department of Science and Art in 1853, Cole remained at its head until he retired in 1873. The fledgling Museum had limited financial resources to acquire the original works with which to quickly build a permanent collection, but was able to draw on the wave of enthusiasm for ornamental art in the aftermath of the Great Exhibition to stage a series of exhibitions at South Kensington comprising loans from private collections. Henry Cole realized that such exhibitions and displays of loan objects presented an opportunity, if permission could be obtained from the owners, to make copies of works that were otherwise inaccessible to the public. In his memoirs, a collection of his life’s writings and speeches published in 1884, Cole wrote,

³⁰⁸ Elkington, AAD/1979/3/1/8, p. 157.

“... a system for making photographs, casts, and electrotype copies of fine objects which thus came temporarily into the Museum’s possession was commenced. This system of reproductions has since proved of great importance in the development of certain divisions of the Museum. It appears to be of great benefit to local museums throughout the country. They, probably less than the normal National Collection, may not be in a position to acquire original objects.”³⁰⁹

The ‘South Kensington system’ for making copies of ‘fine objects’ became a model for the establishment of public museums across Britain, and throughout the world. Electrotypes were key early acquisitions in the foundation of many of the world’s finest museum collections. Unadorned copper electrotypes could be used for educational purposes to teach the grammar and vocabulary of ornamental design, whilst electroplated and electro-gilded electrotypes, which appeared exactly like the original object, could be displayed to satiate a Victorian public avid to learn about art history and acquire cultured taste. The possession of electrotype facsimiles by local museums further fuelled the early-Victorian passion for the acquisition of sculptural and ornamental art, and encouraged local benefactors to purchase and donate objects, or make endowments. “From this date,” wrote Cole, “the Museum began acquiring reproductions of objects of art, and a system, first-rate in its importance to the formation of art museums generally, was established.”³¹⁰

In 1867, at the instigation of Henry Cole, most of the crowned heads of Europe signed the *Convention of International Exchange of Reproductions of Works of Art*. The South Kensington Museum sent Elkington’s staff on mould making visits to museums and other major collections in Germany, Sweden, France, Denmark, Hungary and Russia. The copper type patterns contain reproductions from many of Europe’s finest collections, including the Royal Collection, notably the royal plate at Windsor Castle; the Danish

³⁰⁹ Cole, 1884, pp.288-9.

³¹⁰ Cole, 1884, p.345.

Royal collections at Rosenborg Castle in Copenhagen; the Dutch Royal Museum at the Hague; the collections of various Oxford and Cambridge colleges; the collection of Elizabeth Sackville-West, Countess De La Warr at Knole near Sevenoaks; the Imperial Arsenal of Tsarskoë-Selò and the Hermitage in St. Petersburg, and the Kremlin in Moscow. However, the majority of the type patterns are articles that remain in the V&A collection. Whilst some electrotypes were displayed in the South Kensington Museum, many more were loaned by the Museum's Circulation Department to regional museums and art schools as examples of good design for the education of students, artisans, and apprentices in the manufacturing industries. Even though a great many were disposed of during the 20th-century, the V&A still has by far the largest collection of electrotypes in the world, between 3000-3500 distinct objects. The museum also has a large and completely unique collection of over 350 copper type patterns, which were returned by Elkington from Newhall Street to the South Kensington Museum in 1915.³¹¹

The V&A's collection of copper type patterns, which remained in storage from c.1913-1914, are among the most fascinating and iconic museum artefacts of the Victorian era, because they attest to the sheer scale of ambition of the South Kensington Museum's aim to fully illustrate all 'human taste and ingenuity.' They represent the conceptual foundation of the formation of art museums in the post-industrial era. The generation that organised and witnessed the spectacle of the Great Exhibition, and International Exhibitions that followed, were not daunted by such a task. During the 1840s and 1850s, they witnessed the rapid development of electro-metallurgy and its collateral branches into an industrial art with seemingly unlimited potential for perfectly replicating and mass-manufacturing reproductions of works of art.

Most of the electrotypes commissioned were copies of works that were unique and unobtainable by the museum, and to which there was little or no public access.

³¹¹ Patterson, June 2012.

Works were copied from royal, aristocratic, and other private collections, ecclesiastical, civic, guild, collegiate, and other institutional collections, and after 1867, as the copying programme furthered its horizons, from the finest foreign collections:

“The Museum would identify an example of good design for copying and commission an electrotypist such as Elkinpton & C^o. and Franchi & Son to make it. The factory would take an impression of the original, usually in gutta-percha, but sometimes in plaster, and from this mould, electroform the impression in copper. This first copper impression became the type pattern. This type pattern then became the model from which future gutta-percha moulds could be made, to save going back to the original, which might be fragile or inaccessible. In these moulds the final electrotypes were made, before being trimmed and gilded, plated or patinated to look like the original object.”³¹²

Franchi & Son were Giovanni [Ferdinando] Franchi Snr. (c.1811-1874) and his son, Giovanni [Antonio] Franchi Jnr. (c.1832-1870?). They were Elkinpton’s only rivals for the electrotyping work at South Kensington Museum. Just before he died in 1874, Giovanni Franchi Snr. sold his business to Elkinpton & C^o., because his son had predeceased him.

The electrotype facsimiles made by Elkinpton for South Kensington Museum ranged in scale from medals to large electro cast sculptures like the three *Rosenborg Lions*, which are one of the star attractions of the V&A’s collection.³¹³ Ferdinand Kyblich made the originals in oxidised silver for Rosenborg Castle in Copenhagen c.1670. They still form a central part of the Danish royal regalia by guarding the king’s throne as protective symbols of national sovereignty. They represent the three waterways between the North Sea and Baltic: the Great Belt, the Little Belt and the Sound. They were electro cast by Elkinpton in 1885. Like the Newhall Street showroom, a technological deception is taking

³¹² Patterson, June 2012, p.67.

³¹³ *The Rosenborg Lions*, Elkinpton & C^o., electro-plated copper electrotype, V&A, London, Museum Ref. REPRO.1885-194.

place in the V&A's Silver Galleries, because the *Rosenborg Lions* are not made of silver but almost entirely of copper, electro-plated with silver only a few microns thick, which has been oxidised to look exactly like the real thing.

The V&A's large collection of electrotypes and type patterns testifies to the sustained ambition of South Kensington system. They also bear witness to the sheer scale of Elkington's production of copper electrotypes, and why the firm developed copper-refining as an important collateral branch of their business. In the aftermath of the Great Exhibition, at the same time that Elkington began commercially refining copper, they also began copying valuable works for the Department of Science and Art, the commercial potential of the replication and reproduction of all the world's art and ornament using the art of electro-metallurgy seemed limitless. The longstanding public association with South Kensington was undoubtedly beneficial to Elkington & C^o's creative reputation. Furthermore, access to so many valuable works of art through the Museum's electrotyping programme also allowed Elkington to make casts and moulds for their own commercial benefit. The South Kensington Museum far more effectively fulfilled the role of supplying casts that Schlick and Braun had begun, allowing Elkington & C^o. to continue building their own vast repository of copper type patterns as interchangeable components in the *compositional historicism* that had become the technical and stylistic basis of the art of electro-metallurgy.

In his jury report of 1851, Luynes astutely observed that two parallel strands were emerging in Elkington's art of electro-metallurgy, "...the application of the electrotype process for the exact reproduction of objects in copper, and of precious metals to ornamental purposes."³¹⁴ Following the Great Exhibition, the firm developed these two distinct, but interrelated strands of 'bronzed' copper electrotypes and ornamental precious metalwork, in tandem. By the time of the International Exhibition of 1862, the division

³¹⁴ *Catalogue*, 1851, pp.1121.

was clearly manifest in their exhibits, which were displayed in two separate parts of the venue. In his review of Elkington's contribution to the 1862 Exhibition, George Wallis described the "The exceptional and varied character to the productions exhibited by Messrs. Elkington" which, he stated, was "...one of the most remarkable displays in the Exhibition..." Like Luynes a decade earlier, Wallis saw that "Messrs. Elkington's exhibits may be divided into two groups. One of these formed a trophy in the nave... The trophy consisted of several tiers of works, so to speak, chiefly in bronze, the base being surrounded by works in gold and silver..."³¹⁵ The second group consisted of ornamental precious metalwork, which included "...an application of a high class of art to articles for the service of the table,"³¹⁶ along with showpiece works of art in silver and gold, most notably *repoussage*, and also a new venture for the firm, which was "the application of coloured enamel in combination with silver and parcel-gilding..."³¹⁷ The key people and artworks that developed these distinct but interrelated strands of electro-metallurgy, and that shaped Elkington's creative reputation from the 1850s until around 1890, are the subject of the following chapters.

³¹⁵ Wallis, 1863, p.24-25.

³¹⁶ Wallis, 1863, p.27.

³¹⁷ Wallis, 1863, p.28.

Chapter III.

ELECTRO CAST BY ELKINGTON & C^o.

1. Elkington's Artworks in Copper and Copper-alloys.

This chapter looks at Elkington & C^o.’s productions in non-precious metals, identifying and describing the artworks they produced in copper and copper-alloys under the self-designation ‘bronzists.’ It shows how Elkington became the preeminent British bronze foundry during the mid-Victorian years. Unlike the bronze sculpture makers that preceded them, notably Edward Thomason, Richard Westmacott and Francis Chantrey, and the specialist bronze founders that succeeded them, notably Robinson & Cottam, Henry Prince & C^o., Robert Masefield & C^o., the Thames Ditton Foundry, and J.W. Singer & Sons at Frome,³¹⁸ Elkington & C^o.’s venture was unique because it attempted to completely transform bronze sculpture making, seeking to replace the well-established liquid metal methods that used lost-wax, plaster mould, or sand casting with the art of electro-metallurgy, much as they had revolutionized plating and gilding.

The only notable historical survey of British bronze sculpture foundries is Jacob Simon’s pioneering online directory for the National Portrait Gallery,³¹⁹ which has collated and added to earlier research by M.G. Sullivan,³²⁰ Duncan James,³²¹ et al. Unlike other British foundries, Elkington applied the art of electro-metallurgy to an entire range of copper productions, very varied in scale, function, ornament, and form, from *objets de vertu* or domestic statuettes to large public sculptures. Elkington & C^o. also used traditional casting methods extensively alongside the art of electro-metallurgy, particularly plaster and sand casting. A branch canal that ran from the main Birmingham and Fazeley Canal, through the Newhall Street factory site connected it directly to the nearby Newhall

³¹⁸ See: *British bronze sculpture founders and plaster figure makers, 1800-1980*: <http://www.npg.org.uk/research/programmes/british-bronze-founders-and-plaster-figure-makers-1800-1980-1.php>.

³¹⁹ *Ibid.* See also: *Online Database of the Biographical Dictionary of Sculptors in Britain 1660-1851* (Henry Moore Institute); *Mapping the Practice and Profession of Sculpture in Britain and Ireland 1851-1951* (University of Glasgow/V&A/Henry Moore Institute); and the *Public Sculpture of Britain* series (Public Monuments and Sculpture Association/Liverpool University Press, since 1997).

³²⁰ Sullivan, 2005.

³²¹ James, 1984.

Hill sandpits. The Newhall Hill sandpits yielded rock sand, which was prized by the town's metal foundries and fictile wares makers for casting. As increasing quantities of sandstone rock were excavated the canal crept westward, and a map of 1825 shows it extending as far as Camden Drive. Henry Elkington's Camden Street works, where much of Elkington's early casting and monumental electrotyping was carried out was close to the Newhall Hill sandpits. It is an indication of the level of success that they attained in developing the electro-depositing process that there remains a great deal of doubt over which method was used in the manufacture of many of the statues attributed to them.

Elkington exhibited their first monumental electro-cast sculptures at the Great Exhibition of 1851, most notably *The Death of Tewdric Mawr* by John Evan Thomas and William Meredyth Thomas. This chapter provides a detailed study of the two editions of this sculpture made in 1850 and 1856, now at Brecknock and Cardiff respectively, which I believe are the most important Welsh sculptures of the modern era. Elkington's display of electro-cast sculpture at the Great Exhibition won them the commission to manufacture *The Magna Carta Statues* for the Lords' Chamber in the New Palace of Westminster, which were installed in phases during the 1850s. William Theed's *Scenes from Tudor History* for the Prince's Chamber at Westminster, and *Statues and Busts of British and Allied Commanders of the Napoleonic Wars* at Wellington College, and Joseph Durham's *Memorial to the Great Exhibition of 1851* in South Kensington quickly followed. Elkington & Co.'s involvement in this quartet of major public commissions of the 1850s was strongly advocated by Prince Albert. They secured the firm's reputation for monumental statuary and led to numerous other public and private commissions during the 1860s, some of which are also studied in this chapter.

A key factor in Elkington's manufacture of electro-bronzes was the technical development of the means of assembling sculptures and ornamental art in multi-part sections. The history of soldering, brazing, and welding in the 19th-century and its

application to the arts has never been studied in detail, but its technical development was of central importance in shaping the praxis of modern sculpture, decorative arts, and industrial design, and constitutes an important gap in the research, which I will redress here. From the early 1840s, Elkington pioneered the use of both hard soldering and autogenous soldering, now known as fusion welding, for the assembly of sculpture and ornamental art. This chapter studies, for the first time, the work of William Ryland, who was employed as a brazier by Elkington in November 1845, and subsequently developed and managed Elkington's soldering, brazing and welding department, overseeing the assembly of all their productions in base and precious metals, before managing the Newhall Street factory until the early-1870s.

My research on the subsidiary copper-refining business that the firm founded at Pembrey in Wales has been greatly informed by my study of Elkington's use of copper and copper-alloys. This has never been documented before, but constitutes an achievement in many ways equal to the company's invention and development of electroplating and electro-gilding. Styled Mason & Elkington's Pembrey Copper Works Company, the subsidiary supplier-manufacturer partnership was initiated as a straightforward backward integration in sourcing and refining ores to manufacture and supply copper for the electro-plating business, but it quickly became an important business venture in its own right. The discoveries in copper-refining by Alexander Parkes and James Napier in the 1840s and early-1850s, and by James [Balleney] Elkington in the early 1860s, developed as a collateral industrial branch of the art of electro-metallurgy, which was truly groundbreaking. It is outside the scope of this art historical thesis to detail my research into Elkington's copper-refining operations, but I feel it is important to provide a brief *précis* in particular of James Elkington's discoveries at Pembrey.

In 1865, James Elkington discovered, patented, and developed the process of electrolytic copper-refining at Pembrey, which was one of the most important and far-

reaching inventions of the modern era, because it made the subsequent electrical revolution possible. Refining copper of over 99.9% purity is essential in making electrical wire and electrical components, because copper's electrical conductivity is reduced by impurities. The purer copper is, the more easily the last two electrons of the 27 in orbit are transmitted to the next atom in an electrical flow. Pure copper in the coiled windings of the armature of dynamos allowed Siemens and Wheatstone in 1867, and Gramme in 1871, to transform electricity into a commercially viable source of power. James Elkington's invention of electrolytic copper-refining at Pembrey was the foundation of the modern era of technological products and utilities powered by electricity. Writing in 1903, Titus Ulke gave an historical perspective when he wrote:

“After the discoveries of magneto-electricity by Faraday in 1831 and of electrotyping in 1838 by Jacobi, the greater possibilities of the application of electricity to metal deposition began to be recognized, but not until Elkington's discovery of the art of refining copper in 1865 and the introduction of the dynamo in 1867 was its commercial future assured. Since that time the remarkable growth of electric copper-refining is scarcely paralleled in the history of any other industry. It was nearly thirty-eight years ago that James Elkington, the English silver-plater, invented the commercial electrolytic method of refining crude copper, and in 1869 that he founded the first custom plant using this process, at Pembrey, Wales. The works established by the father of modern copper-refining are to-day in successful operation, due chiefly to the remarkable fact that both Elkington's process and apparatus were well conceived and needed but little improvement to bring them up to present standards. However, it was not until the last two decades, when the spread of electric lighting led to an enormous demand for pure copper, and the perfection of the dynamo made possible the cheap generation of current,

that the great importance of Elkington's invention was fully realized.'³²²

On Tuesday 3rd November 1874, a suite of engravings appeared in the popular Saturday illustrated newspaper, *The Graphic*, which recorded a visit by the Prince and Princess of Wales to Newhall Street.³²³ It illustrates how the firm styled themselves at that time. Inscribed on the grand Palladian portico were the words 'PATENTEES ELECTRO-PLATE WORKS,' and beneath that was written, 'BRONZISTS & SILVERSMITHS.' (Fig.28.) The order of the self-designations: 'patentees electro-plate,' 'bronzists,' and 'silversmiths' is notable because it casts light on how the firm prioritized the marketing of its services and products to the public, and positioned themselves within the metalwork trade. After 1851, public commissions and major exhibitions of monumental 'bronze' statues were central to shaping the firm's creative reputation as electroplaters and silversmiths. Elkington & C^o. were always keen to stress that their works were made using the new art of electro-metallurgy, but often, somewhat duplicitously, also promoted their copper electrotypes as 'bronzes.' From the 1850s, their electro-gilded copper *objets de vertu* were often stamped with the registered trademark ELKINGTON'S ART GOLD BRONZE, whilst copper electrotypes were often marked ELECTRO DEPOSITED & PUBLISHED BY ELKINGTON & C^o. (Fig.29.) In the 1860s, the term they coined to describe the process by which their large imitation 'bronze' statues were made was 'electro cast,' and on the base of many of their life-sized figures and busts was the maker's mark: ELECTRO CAST BY ELKINGTON & C^o. (Fig.29.) However, less than a year after *The Graphic* engravings were published, Elkington & C^o. stopped promoting themselves as 'bronzists.' When they dropped the self-designation 'bronzists' and withdrew from making monumental 'bronze' sculpture c.1875, it marked an arrested revolution in the application of electro-metallurgy to sculpture and art metalwork.

³²² Ulke, 1903, p.1-2.

³²³ *The Graphic*, 7th November 1874, p.13.

2. Birmingham's Toymakers: An Infinite Variety of Articles.

In his jury report of 1851, the duc de Luynes described what he saw as the defining characteristics of Elkington's art of electro-metallurgy. Luynes realized that they were not traditional goldsmiths or silversmiths, and the variety of their productions distinguished them from traditional platers and gilders. Rather, Luynes portrayed them as a new kind of art-manufacturer, primarily of non-precious metal articles in copper and cupronickel alloy: "Messrs. Elkington and Mason are the first who introduced into England the application of the electro process to gilding and silvering. Their collection includes objects most varied in their forms and dimensions, intended for table service and for purposes of ornament, executed for the most part in copper, or in a compound metal alloyed with nickel, called German silver, and coated with silver by their electro process. The designs are generally produced in copper by the electrotpe process, and afterwards wholly or partially gilt or silvered by means of electricity, combined with the alkaline salts of gold and silver."³²⁴

The few studies of Elkington published to date have all focused on defining their place in the history of 19th-century precious metalworkers. Bury,³²⁵ Culme³²⁶ et al. have all seen Elkington & C^o. exclusively in the tradition of 19th-century British silversmiths and goldsmiths that followed Rundell, Bridge & Rundell and Storr & Mortimer; contemporaries such as R. and S. Garrard, C.F. Hancock, and Hunt & Roskell. However, at the International Exhibitions that followed 1851, Elkington's trophy (the Victorian term for an exhibition stand) was not always included in the same sectional category as those three illustrious companies, whose productions in precious metals were marketed exclusively to very wealthy, and largely aristocratic patrons. At the Paris *Exposition*

³²⁴ *Reports By The Juries*, 1852, p.1120-1121.

³²⁵ Bury, 1971.

³²⁶ Culme, 1977.

universelle in 1855, Elkington's productions were not defined as 'Manufactures of Precious Metals' but as 'Plated Goods,' and in addition to "Specimens of the electro-plate in dinner, dessert, and tea services. Centre pieces and work in solid silver," they were uniquely listed among the British exhibitors as manufacturers of "Bronze articles of vertu, and fine arts in the precious metals."³²⁷ In his survey of the 1862 International Exhibition, George Wallis observed: "The exceptional and varied character of the productions exhibited by Messrs. Elkington and C^o., together with the extent of their display, ...in themselves form no ordinary exhibition."³²⁸

As former Headmaster of Birmingham Schools of Design, Wallis knew that the wide variety of their productions had emerged from the very distinct tradition of Birmingham gilt-toymakers. The term 'toy' refers to a very broad array of small, often highly intricate artifacts made in a variety of metals and other materials. The first provincial trade directory in Britain was published by James Sketchley in 1763. Its main purpose was to list and categorize the Birmingham metalwork trades. The 3rd-edition of 1767 gave a good account of the diversity of the town's output: "An infinite variety of articles come under this denomination [i.e. toys] and it would be useless to attempt to give an account of the whole, but for the information of Strangers we shall here observe, that these Articles are divided into several Branches, as the Gold and Silver Toy Makers, who make Trinkets, Seals, Tweezer and Tooth Pick cases, Smelling Bottles, Snuff Boxes, and Filigree Work, such as Toilets, Tea Chests, Inkstands, etc. etc. The Tortoise Toy maker, makes a beautiful variety of the above and other Articles; as does also the Steel, who makes Cork Screws, Buckles, Draw and other Boxes, Snuffers, Watch Chains, Stay Hooks, Sugar Knippers, etc., and almost all these are likewise made in various Metals, and for

³²⁷ *Exposition Universelle*, 1855, No. 1147, p.44.

³²⁸ Wallis, 1862, p.24.

Cheapness, Beauty and Elegance no Place in the world can vie with them.”³²⁹ Essentially, Sketchley classified toymakers not by the kind of toys they made, their articles of manufacture, but by the materials with which they made them. Sketchley’s classification of Birmingham toymakers saw the function and form of the end product as immaterial compared to the artistry and skills required in working a particular material.

Following Sketchley, as the 19th-century progressed, the town’s trades were reclassified under more general occupational headings, but subsequent directories, like Pearson & Rollason, Holden, Wrightson, Pigot, and Bentley, continued to list, as a subclass, the materials that manufacturers dealt in. By the time that Kelly began publishing his Post Office directories for Birmingham in the 1840s, the trade-listings had become so comprehensive and voluminous that they included alphabetic, street-by-street, as well as classified listings. Nevertheless, the traditional grouping of manufacturers by materials rather than articles of manufacture came to the fore again at the Birmingham *Exhibition of Manufactures and Art* of 1849, where Elkington’s vitrines and tables were divided and classified, as Luynes later noted, between “SPECIMENS OF SILVER AND ELECTRO-PLATE” and “SPECIMENS OF BRONZES, &c.”³³⁰

At the Great Exhibition two years later, the Birmingham *Exhibition of Manufactures and Art* provided the blueprint for arranging and classifying the works. However, the London spectacle of 1851 was a vastly bigger and more diverse event, and the subclasses into which works in precious metals were divided at were a curious confusion of materials, artistic techniques, and articles of manufacture. The Great Exhibition was a vast agglomeration of socio-cultural interests, amateur and commercial, at which the classical education, antiquarianism, and connoisseurship of the arts establishment, represented by Royal Commission and Royal Society, imposed its own administrative and curatorial

³²⁹ *James Sketchley’s Birmingham Directory* was first published in 1763. A copy is held at Central Library, Birmingham. His 3rd classified directory of professions and trades was published in 1767.

³³⁰ *Catalogue*, Birmingham, 1849, pp.40-45.

overlays on the formative classifications of scientific organizations like the Royal Institution and British Association (whose annual meeting occasioned the Birmingham exhibition of 1849) and the occupational, commercial (wholesale and retail) and material subdivisions that had been established since the mid-18th-century by the trade directories to classify industrial arts, old and new.

Like earlier methods of gilding and plating it superseded, the art of electro-metallurgy was an imitative and dissimulative technology conceived to make non-precious metal objects look like solid silver and gold. Electrotyping, like casting, raising, and stamping before it was simply a new means to replicate and reproduce objects in metal, either as a one-off or in great quantity. However, by 1851, it was clear to most astute observers that the boundaries between art and commerce were shifting. “In the metropolis very large and wealthy firms exist, producing annually large quantities of silver goods, upon which great expenses are incurred, in order to give them the character of art-productions,” stated the ‘Introduction’ to Class XXIII, “Works in Precious Metals, Jewellery, Articles of Vertu, &c.,” in the *Official Catalogue* of 1851. “Since the introduction of the beautiful art of electro-plating, Birmingham has supplied very large quantities of silver and electro-plated articles, and a number of extensive factories exist in that town, in which this strictly chemical operation is practiced on a grand and commercial scale.”³³¹

As production methods became more complex in terms of the application of scientific knowledge and industrial process to artistic techniques, the manual, mechanical, electrical and chemical operations required to manufacture metalwork became an increasingly corporate rather than individual activity, employing large multi-disciplinary workforces with diverse knowledge and skills. Some close observers of the Great Exhibition, like Luynes, foresaw the implications of this: “But when it is considered that upon the reduction of the unshapen [*sic*] metal into its present form, the artist and

³³¹ *Official Catalogue*, 1851, p.671.

mechanic have both been occupied, and that the result is to indicate not less the talent of the one than the industrial skill of the other, these objects, whatever their size or intrinsic value, assume, in proportion to the degree of talent and labour employed in their manufacture, a new and higher value.”³³² As the world’s richest, most discerning, and prolific collector of ancient and modern metalwork, Luynes perceived that as the expedited production, reproduction, replication, and rescaling of articles of manufacture progressed, the boundaries between art and commerce irrevocably shifted, and so too did the intrinsic value of all objects. To Luynes the syntheses of artistic talents with scientific, technical, and industrial skills involved in the art of electro-metallurgy necessitated a critical revaluation of all precious and base metal *objets de vertu* that was not necessarily devaluation.

³³² *Ibid.*

3. A Colour Engraving of the Newhall Street Showroom, c.1855.

In 2003, a rare colour engraving was donated to the Elkington records.³³³ (Fig.30.) It depicts the Newhall Street showroom. It is undated, but having identified most of the artworks that are clearly visible in the image, it was published c.1855. The large figural group in the foreground, to the left of the archway, clearly depicts *The Death Of Tewdric Manwr, King Of Gwent*. Two editions were made in 1850 and 1856, the earliest of which was the first, large-scale, freestanding statue made by Elkington & C^o. The engraving shows the compositional *Pietà* of the dying king cradled in his daughter's arms raised on a 3-foot high plinth, just above the viewer's eye-level. At 160cm tall x 131cm long x 76cm wide the figures are not quite life-sized, and are modeled on a scale that enhances their sculptural qualities whilst still achieving monumentality.

Besides the colour engraving, only two other known images survive that depict the showroom at the midcentury. In the earliest engraving, the only large statue depicted is *The Death Of Tewdric Manwr*. The black & white engraving was published in the *Illustrated Exhibitor and Magazine of Art* of 1852,³³⁴ shortly after the new showroom was built. It shows that the statue was originally positioned inside the archway among the glass cabinets and tables containing the firm's electro-plated and electro-gilded hollowware and flatware. The last of the three surviving images is in the object file for *The Death of Tewdric Manwr* at Brecknock Museum. It is an unreferenced Xerox made in the late 1970s of an original engraving, which is currently untraced. The image depicts *Boadicea and her Daughters* (1855-56) by John Thomas, which suggests that it somewhat postdates the colour engraving, because from May–November 1855 *Boadicea* was on display at the *Exposition universelle* in Paris. After returning from Paris it was displayed in the Crystal

³³³ Elkington, AAD/2003/4.

³³⁴ *The Illustrated Exhibitor*, 1852, p.297.

Palace at Sydenham, and then was shown at the 1862 International Exhibition, where it surmounted Elkington's trophy.

Alongside *The Death Of Tewdric Mawr*, the colour engraving also depicts several of Elkingtons' best-known sculptures and *objets de vertu* of the early-1850s. To the right of the archway, the life-sized knight in armour is *William de Warrenne, 1st Earl of Surrey*, modeled by Patrick MacDowell in 1847, which was one of *The Magna Carta Statues* made by Elkington between 1851-58 for the House of Lords Chamber in the New Palace of Westminster. Next to *William de Warrenne* is *The Hours' Clock-case*, designed and modeled by John Bell. It was shown at the Great Exhibition where the *Official Catalogue* suggested it was "...exhibited as a specimen of metalwork applied to sculptural composition for useful purposes."³³⁵ Pevsner included an image of it in his study of the exhibits of 1851, spuriously comparing it to the Baroque-inspired silver of Hunt & Roskell's *Tweedale Testimonial* and the *Emperor of Russia's Ever* by Garrard's,³³⁶ despite the fact that the erotic figurative clock-case with an enameled dial was described in the *Official Catalogue* as an "electro-bronze." Pevsner's confounding of copper for precious metal is understandable because since 1851 *The Hours' Clock-case* has only been known only through engravings, its whereabouts unknown.

The display of electro-casts in the foreground of the colour engraving also contains several large electrotypes of historical works of art. Leaning against the plinth of *The Death Of Tewdric Mawr* is a "Large bas-relief, in electro-bronze, a cast from the original by Fiamingo,"³³⁷ which was also shown at the Great Exhibition. The Baroque sculptor François Duquesnoy (1597-1643) was better known to Victorians by his Italian nickname 'Fiamingo.' It is of one of Duquesnoy's early works, from the marble alto-relievo putti for

³³⁵ *Official Catalogue*, 1851, p.672.

³³⁶ Pevsner, 1951, p.80 and p.84.

³³⁷ *Ibid.*

the Villa Doria Pamphili in Rome.³³⁸ The edition in the colour engraving is now on display at Birmingham Museum & Art Gallery.³³⁹ Early in his career, in 1732, the French painter Jean-Baptiste-Siméon Chardin (1699-1779) painted a *trompe l'œil* version of Duquesnoy's putti, titled *Eight Children Playing with a Goat*. The Dutch painter Gerard Dou (1613–1675) also painted a version of Duquesnoy's sculpture. Chardin's *trompe l'œil* depicted the marble bas-relief in bronze. It may have been painted from an actual bronze cast of Duquesnoy's original that is now lost, or may just be imaginary. Chardin's works were widely circulated by 18th-century printmakers like Cochin, Filloeuil, Lépicié, Le Bas, and Surugue. After the Napoleonic Wars ended, French prints became more widely available again in Britain, which probably suggested the subject's suitability as an electro-bronze to Elkington.

Putti as a motif belong to a Hellenistic iconographical tradition that was later adopted in imperial Rome. The two famous *Putti del Trono di Saturno* bas-reliefs, which were sculpted in marble in the second half of the 1st-century B.C., and are now in the *Museo Archeologico* in Venice, inspired Duquesnoy's sculpture.³⁴⁰ Originally part of a monument in Ravenna, they were moved to the church of Saint Maria dei Miracoli in Venice where they became a popular source of inspiration for High Renaissance and Baroque artists. In 1812, at the instigation of Antonio Canova, they were acquired the *Museo Archeologico*. In an age when education was based on the study of classical antiquity, such figures and motifs of were widely recognizable. To Victorians, putti embodied the enduring influence of classical art on Renaissance iconography. Their resemblance to angels in the Christian tradition transformed easily from a pagan to Christian motif, so they became a popular subject matter for early-Victorian art collectors, and were

³³⁸ Ling, 2007.

³³⁹ Elkington & Co., "Large bas-relief cast from the original by Fiamingo," copper electrotpe, c.1850-51, Birmingham Museum & Art Gallery, Accession number: 1996 D00005.

³⁴⁰ The *Putti del Trono di Saturno* (Putti from the Throne of Saturn) are two marble reliefs depict two putto with a scythe (58.5/69/10cm) and two putto with a sceptre (57.5/69/10cm).

extensively used by Elkington as ornamental motifs on works in both copper and precious metals. Elkington's extensive use of putti typifies the way in which the art of electro-metallurgy was used to copy and recycle familiar motifs from art history that were most popular amongst the Victorian public. Because they were so instantly recognizable as classical and Renaissance-inspired motifs, putto, like Duquesnoy's, were often copied separately and incorporated into 'new' ornamental designs.

The Fiamingo bas-relief in the colour engraving of the Newhall Street showroom is perfect example of this. It is a mid-19th-century electrotype inspired by a *trompe l'œil* painting by an 18th-century French painter of a marble relief by a 17th-century Baroque sculptor inspired by a marble relief from classical antiquity. Reading about and recognizing the art historical attributions of artworks, as well as the subject matter and significance of ornamental motifs was of great importance to the increasingly literate population of early-Victorian Britain, where education and cultural refinement was a key determinant of social status. The appeal of electrotypes for the early-Victorians was that they made sculpture and *objets de vertu* from different dates, and different geographical, ethnic, and cultural origins reproducible, affordable, and immediately accessible. Historic artworks, which could only be seen *in situ* by visiting Europe, or which resided in the private collections of the very wealthy, might be reproduced as an electrotype and acquired at a fraction of the price of the original. Collecting electrotypes allowed the middling classes to become collectors for the first time in history. For the generation of Victorians that visited and were inspired by the Great Exhibition, electrotypes typified the primary sense of modernity represented in 1851, by making the works of industry of all nations available, like a three-dimensional encyclopedia of art and ornament. Soon it seemed all of art history might be available as an electrotype.

The large vase in the foreground on the far right of the image is another 'bronzed' copper electrotype of an historical object, a 2nd-century marble vase, now

known as the *Townley Vase*. The vase is three feet high, oval in form, with massive handles, and is decorated with symbols of the Eleusinian Mysteries and Bacchanalian figures in high-relief, which include Pan, Bacchus, and Ariadne dancing in revelry. An electrotype of the vase was displayed on Elkington's trophy at the Great Exhibition. In the *Official Catalogue* it was called the "Hamiltonian Vase" after Gavin Hamilton (1723-1798) who excavated the original at the Villa of Antoninus Pius at Lanuvium (Monte Cagnolo) in 1773. However, it is now more popularly known as the *Townley Vase* after the collector Charles Townley (1737-1805), who acquired it from Hamilton in November 1774. It was acquired by the British Museum in 1805. Elkington sold silver electrotype reductions of the vase, which were oxidized with nitric acid to look more antique, and which proved popular with the public.

At the Birmingham exhibition of 1849, Elkington also exhibited a 'bronzed' copper electrotype of the Proconnesian marble statue of the *Townley Venus*, which was also excavated by Gavin Hamilton and purchased by Townley, and also acquired by the British Museum in 1805.³⁴¹ The original is 2.13m. high so it is likely that the electrotype shown at Birmingham was also a reduction. Often Elkingtons displayed both life-sized and reduced electrotype editions alongside each other, marketing them simultaneously to art collectors from different social strata and financial means for display in varying domestic settings. For example, exhibited alongside the *Townley Venus* at Birmingham in 1849, were both life-sized and reduced editions of *Boy with a Bird and Girl with a Nest* by Antonio d'Este (1754-1837), the moulds for which were probably taken from the original in the *Galleria Borghese* in Rome by Emil Braun.

The *Townley Venus* was once part of Cardinal Scipione Borghese's collection of antique sculpture amassed in the early 17th-century. From the mid-1840s into the early 1850s, Elkington & C^o., like the powerful and wealthy art collectors of the 17th and 18th-

³⁴¹ *Catalogue*, Birmingham 1849, pp.40-45.

centuries, such as Scipione Borghese (1577-1633) and Henry Blundell (1724-1810), sought to acquire well-known sculptural works of classical antiquity and the Renaissance. Like Scipione, who also commissioned marble sculptures with Classical mythological themes by contemporary artists such as Gian Lorenzo Bernini, and Blundell, who commissioned works by Canova as well as his pupil Antonio d'Este, Elkington also began to commission contemporary sculpture and decorative art, often with historical or mythological themes, to exhibit and promote alongside their electrotype editions of antique works.

The eclectic array of electro-bronzes on display in the foreground of the colour engraving of the Newhall Street showroom is typical of Elkington's public exhibitions of the 1850s, exhibiting art-reproductions, like the Fiamingo bas-relief putto and the *Townley Vase* and *Townley Venus* alongside contemporary works, often with an historical subject matter, like *William de Warrenne, 1st Earl of Surrey* and *The Death Of Tewdric Manr*. This conscious array of different epochs of art history, comparing and contrasting the distinct characteristics of style between one era and the next, between figurative and ornamental art, was a relatively recent intellectual development. Elkington's reproduction of objects from the canon of western art, from classical antiquity to the present, made knowledge of art history, literature, history, mythology, and scripture central to the production and consumption of the modern art of electro-metallurgy.

4. The Conception of Technological Modernity.

In Elkington's Newhall Street showroom, art history fused with the fantasia of the factory. It was the idea of technological modernity surrounding the art of electro-metallurgy that elevated the visitors' experience to wonderment. "It is not the mere fact that here are reproduced the finest works of Greece and Rome; that an artistic taste gives beauty and coherence to the skill of the artisan," evinced *Cornish's Stranger's Guide Through Birmingham*, "...but it is the union of these with that marvelous discovery – plating by the agency of electricity – that gives more than mere artistic interest to these works. Here the union of science, art, and manufactures is fully consummated, realizing the fable of Pygmalion's statue of Galatea; the artist conceiving beautiful forms, the artisan giving them existence, and the Promethean fire, electricity, vivifying and glorifying the work."³⁴² I know of no critique that more simply and succinctly refutes Walter Benjamin's famous essay *The Work of Art in the Age of its Mechanical Reproduction* than this quote from 1851.³⁴³ Far from being 'withered' or 'stunted' (*verkümmert*) by illimitable copying, the aura of the original artwork is vivified and glorified by 'the Promethean fire' of its electrotpe reproduction. The reproduced object is by no means detached from the domain of artistic tradition by the technique of reproduction, because the art of electro-metallurgy imparts its own aura of technological modernity, which "gives more than mere artistic interest" to the imitation of the original artwork.

Behind the display of monumental electrotypes in the foreground, which was known as 'the bronze room,'³⁴⁴ stretching into the distance, are numerous vitrines displaying Elkington's electroplated and electro-gilded hollowware and flatware, which was the company's main output, and from which it derived its profits. All three

³⁴² *Cornish's Stranger's Guide*, 1851, p.80.

³⁴³ Benjamin, 1936/2008.

³⁴⁴ *Birmingham Daily Post*, Friday 30th May 1862, p.3.

engravings show well-dressed members of the Victorian middle-classes in the background, closely inspecting the vitrines filled with silverware for domestic utility and display. The middle-class visitors to the retail showroom, many of who had taken the guided-tour of the state-of-the-art electro-plating factory, are seen inspecting electro-plate in vitrines like a new class of mass-market antiquarian studying ‘modern specimens.’ Today this kind of conspicuous consumerism is commonplace, but the engravings of Newhall Street reveal how manufacturer’s retail showrooms were a precursor to both the public museums and galleries, and luxury department stores that developed in the latter half of the 19th-century.

However, the division between art and commerce is visible in all the engravings. It is noticeable that the eye-catching artworks shown at the International Exhibitions are in the foreground, whilst the mass-manufactured electro-plated items that gave Elkington their commercial success recede into the seemingly endless background of the plush showroom. From their first major exhibition at Birmingham in 1849, Elkington invariably curated their works not in groupings of historical style or period, nor by artist and designer, nor even by categories of function and form, but following Sketchley’s taxonomy by the metal and technique used in its manufacture. In the showroom, ‘the bronze room’ was an anteroom at the top of the wide staircase that led up from the entrance portico. According to written accounts, either side of the entrance staircase, which rose directly to the first floor showrooms, was lined with copies of fourteen of *The Magna Carta Statues* made by Elkington for the House of Lords. The famous statuary on the staircase and in ‘the bronze room’ was placed to captivate the public’s attention before leading them into the vast galleria of luxury hollowware and flatware, which most visitors might actually be able to afford to buy. By the early 1850s, Elkington were unequivocally marketing cultural and social aspiration to the Victorian public, who are shown peering into glass display cases containing highly ornamented designs in electroplated nickel silver and electro-gilded copper that looks like solid silver and gold.

5. Elkington's Bronzing Recipes.

In the foreground of the colour engraving, the large electro-casts are coloured green to suggest the weathered verdigris of bronze, but they are pure copper electrotypes, and all of them have a dark ruddy-brown patina. In truth, very few of Elkingtons' electro-casts were given the patina of verdigris, which depended on the formation of an acetate or carbonate made by steeping the pure copper statue in common salt, or exposing its surface to dilute acetic acid or bleaching powder.³⁴⁵ More commonly, Elkington's electro-casts were chemically treated with dilute nitric acid to give the appearance of ruddy-brown bronze. In a review of the Birmingham Exhibition of 1849, *The Journal of Design* praised Elkington's bronze patina: "In the difficult matter of obtaining a really good bronze tint Messrs. Elkington and Mason have been especially fortunate; two little boys, modeled (we fancy) after some French original, being more excellent in colour than anything we remember to have seen in England."³⁴⁶

Copper electrotypes emerge from the depositing trough a bright 'coppery' colour. Different colour bronzes could be achieved with chemical treatments, and the bronzing recipes used in the 19th-century were many and varied, and developed from decade to decade. The changes in methods, which I have traced through the succession of handbooks on the art of electro-metallurgy, were not always developed as aesthetic improvements. As the scale of commercial production increased, the quality and permanence of lengthier or materially costly physical and chemical treatments were substituted for quicker, cheaper, and more cost-effective processes. The following recipes appear to be the most enduring and commonly used: Black bronze simply required the application and drying of nitro-hydrochloric acid. The recipe for achieving the brown of

³⁴⁵ A good account of commonly used recipes for different bronzing patinas is: Byrne, 1864, Chapter XXVIII, 'Bronzing,' pp.573-574.

³⁴⁶ *Journal of Design*, No. 7, September 1849, p.14.

aged (but not ancient) bronze was called 'rouge,' and involved the application and drying of chloride of platinum and water. This appears to be the most popular method, and gave a chocolate brown with a rich depth of tone. Parisian bronze was 'rouge' plus sienna and plumbago (graphite) with hydrosulphate of ammonia and water. Another Parisian bronze recipe used chromate of lead, Prussian blue, plumbago, sienna, and lac carmine. A simpler brown bronze was achieved using dilute nitric acid, and was in widespread use commercially by the 1860s. 'Crocus' powder, also known as 'Jeweller's Rouge,' comprising ferric chloride oxide, which was a red amorphous powder widely used as an abrasive to polish metal, glass and gems, and to colour ceramic glazes, was also used followed by heat treatment.

The green verdigris bronzes, depicted in the colour engraving were rarely used as bronze patinas on Victorian electrotypes because they are more complex to achieve. Elkington & Co. tended to favour mid-brown bronzes, and does not appear to have used verdigris on any of its electrotype figures and busts. A truly convincing verdigris patina requires the formation of a green salt (i.e. acetate or carbonate) on the surface of the copper. It also requires varied colour tones that range from rich and deep on areas that would have been exposed to weathering over time, with thinner hues on more protected areas. Steeping for days in common salt and then washing with water worked well and permanently but was a lengthy process, and required skilled manipulation to avoid a crude uniform appearance. Sugar with acetic or oxalic acid achieves the same affect. For smaller electrotypes, exposing the copper surface to vinegar vapours in closed casks also produced rich verdigris. Often ammonia was used to give a quick green patina to copper but it was crude and impermanent. To create really authentic, ancient-looking bronze verdigris on figures and busts the whole statue needed to be exposed over the fumes of bleaching powder (calcium hypochlorite). The quantity of powder used, length of

exposure, and periodic rotation of the statue regulated the intensity, depth, and subtlety of the verdigris.³⁴⁷

By the 1860s, a more scholarly, antiquarian approach to the colouring and protecting of bronze statues was beginning to have an influence on the practice of artists and bronze founders, and the taste of art patrons. In 1865, William Burges wrote, “It must not be imagined that all of these statues were of the brown tint we give our modern bronzes by means of acids and pickles; ...from what we read in various authors, and from what we see in various museums, we can form a very fair idea of the decoration of metal statues. In the first place, there is great reason to believe that the bronze was often left in its natural colour, and simply protected from oxydation [*viz.*] by a varnish of some kind, perhaps encaustic.”³⁴⁸

Many of the methods of mimicking an aged and weathered look that are detailed in handbooks on the art of electro-metallurgy in the latter half of the 19th-century had been formulated in the preceding centuries by traditional bronze-casters. And yet, for Walter Benjamin, the patina of bronze was the acid test of authenticity. “The presence of the original is the prerequisite to the concept of authenticity. Chemical analyses of the patina of a bronze can help to establish this...” he wrote.³⁴⁹ The false verdigris depicted in Elkington’s colour engraving seems to openly acknowledge that various forms of duplicity were taking place in the Newhall Street showroom, and in Elkington’s marketing image: What appeared to be real was a replica; what appeared to be unique was a reproduction; what appeared to be solid gold or silver was a non-precious metal object coated with precious metal just a few microns thick, and what appeared to be antique, weathered bronze was the chemical treatment of pure, new, electrotyped copper.

6. Elkington’s Development of Autogenous Soldering.

³⁴⁷ For a history of verdigris in bronze sculpture see: Scott, 2002, pp.270-294.

³⁴⁸ Burges, 1865, p.42.

³⁴⁹ Benjamin, 2008, II.

Before they could be electro-cast, large-scale sculptures required moulds to be taken from the original model in sections. The electrotyped sections then required joining together using a great many fixed, soldered or welded joints, often with internal supports and plates to strengthen the statue structurally. The application of hard soldering and fusion welding techniques to the electro-plating trade also benefited the assembly of large multi-sectional sculptures. In October 1844, in one of the first in-depth essays about “the new art of *Electro-metallurgy*, or *Electro gilding* and *silvering*” to appear in a popular periodical, George Dodd writing for *The Penny Magazine* described in great detail the stages of manufacture through which articles passed in the different departments at the Newhall Street manufactory.³⁵⁰ The essay follows the industrial process that had been laid out in the reconstructed factory by Mason during the previous year. It follows the manufacturing process from artistic conception and design, “...where the taste of the artist devises those beautiful forms which are afterwards to be wrought in metal,” to the finishing operations, which were largely done by skilled female artisans.³⁵¹

Dodd makes explicit how the art of electro-metallurgy incorporated and re-invigorated many of the old metalwork trades, but also stimulated the collateral development of new materials, tools, and techniques that became important branch industries in their own right. Dodd particularly emphasizes “the striking advance” that the application of hard soldering and autogenous soldering to the art of electro-metallurgy made in the assembly process of metalwork manufacture. “It often happens, and generally does happen in a large and complicated piece of ornamental plate, that its manufacture from one piece of metal is utterly impracticable; it consists of numerous component pieces, some of which may be more fittingly prepared by casting than by any

³⁵⁰ Dodd, 1844, pp.417-424.

³⁵¹ Dodd, 1844, p.419.

other of the mechanical processes, others by stamping, others by hammering, and so on; together into one complex whole.”³⁵²

Alongside the re-training of traditional platers and gilders in the art and science of electro-metallurgy, the extensive use of hard soldering and autogenous soldering, now known as fusion welding, was the job where the adaptation of the skills of an old trade saw the greatest advances, transforming the solderer and brazier’s art with new industrial equipment and techniques. “This brings us to another remarkable department of the factory; one which exemplifies the recent striking advance made in this kind of work,” marveled Dodd, “...solder of a very different kind can be used; a solder indeed, so refractory that the common practice is inapplicable to it. Hence a powerful heat is required, and this heat is obtained by a method patented by M. Delbrück a few years ago, and known as “autogenous soldering,” the use of which to England is obtained by license from the patentee.”³⁵³

On 25th April 1840, *The Mechanics’ Magazine* published an extensive article titled “Richemont’s Autogenous Soldering,” which recognized the importance of “...a new method of joining one piece of metal to another without the use of any solder.”³⁵⁴ *The Mechanics’ Magazine* suggested that “the autogenous junction of metal” might be a better phrase to describe the invention of Eugène Panon, Comte Desbassayns de Richemont (1800-1859), which had been patented in Britain by Charles Delbrück, who also took out a further patent in March 1841 for improvements to the apparatus, which Richemont poetically termed a *Chalumeau Aerhydrique*, after the late baroque woodwind instrument. An engraving in *The Penny Magazine* showed a Solderer/Brazier/Welder at work with the new tool. (Fig.31.) “The method consists in the application of a forcible jet of mixed gases, in an ignited state, to the metal. In one of the ranges of shops are several iron stands or

³⁵² Dodd, 1844, p.421.

³⁵³ *Ibid.*

³⁵⁴ *Mechanics’ Magazine*, 25th April 1840, pp.545-552.

tables ranged in a row, each one contiguous to a jet affixed with a flexible pipe. The gases are forced along this pipe with great violence...” marveled Dodd.³⁵⁵

In 1840, *The Mechanics' Magazine* had described its first use in Britain at Andrew Clarke and Sons, plumbers in Southwark, and the article focuses entirely on its earliest application to making watertight and gastight joins in plumbing. On the cover of the magazine were detailed diagrams of the hydrogen gas generator and the blowpipe. The article describes how hydrogen and air were conveyed in caoutchouc (rubber) tubes, through regulating stopcocks, into a metal tool it terms a ‘beak,’ although the article later uses the term ‘blowpipe.’ “The beak or tool may be changed for others of every variety of form, to produce jets of flame suitable to the work to be done.” In conclusion, the article suggests that “...jewellers, goldsmiths, tinmen, manufacturers of plated good, of platina, of buttons, &c”,³⁵⁶ might use the equipment. By 1844, Dodd was able to report that an extensive soldering, brazing and welding department was in operation at Newhall Street, where the blowpipe was routinely used for both hard soldering and fusion welding. Delbrück’s improved design of Rochemont’s apparatus proved so robust and adaptable that the engravings in *The Graphic* of 1874 shows identical equipment still in use.³⁵⁷

³⁵⁵ Dodd, 1844, p.421.

³⁵⁶ *Mechanics' Magazine*, 25th April 1840, p.552.

³⁵⁷ “*The Graphic*, 7th November 1874, p.13.

7. William Ryland's Soldering, Brazing and Welding Department.

The scale of operations at the Newhall Street manufactory was unprecedented in art-metalwork in Britain. As I showed in Chapter I, Mason's investment facilitated a strategy of talent acquisition. One of the most notable examples was William Ryland (1804-1877), who, was employed as a brazier at Newhall Street on 7th November 1845. He was paid a salary of 33 shillings a week at a time when the national average weekly wage was around 8 shillings. A Memorandum of Agreement reveals that Ryland agreed work from 8 a.m. to 1 p.m., break for lunch-hour, and then work from 2 p.m. to 7 p.m. in the evening. Ryland was 41 years old when he joined the firm, and was a highly skilled and experienced brazier. According to the 1841 census, Ryland was then living in Matlock, with his wife Ellen Mary, and his father Thomas Ryland, who was aged 72 years. Thomas Ryland was born in 1769, and registered a mark at the Birmingham Assay Office in 1800. By the time of the 1841 census, he described himself of independent means. He died in Birmingham in 1844, and the following year his son William entered employment with Elkington. So it is likely that William was working for his father's business before his death. Thomas was the brother of John and James Ryland, and they were all nephews of the noted Birmingham silversmith Samuel Pemberton (1738-1803). There are surviving balance sheets dated 1811, 1812 and 1813 for a business partnership between John and James Ryland and William Hutton, and *Holders' Birmingham Directory* of 1812 records Ryland & Hutton of Paradise Street as manufacturers of close-plated articles.

William Hutton was the father of William Carr Hutton, who was sent to Sheffield c.1830-31 to establish a branch of the close plating business there. When his father died in 1842, William Carr Hutton moved all the manufacturing operations to Sheffield. So by employing William Ryland in November 1845, Elkingtons not only acquired a talented and experienced brazier, but also a well-respected senior employee with a good family

name and close trade connections throughout the metalwork fraternity in Birmingham and Sheffield. Given the increasing animosity they were encountering from the Sheffield trade, it was a shrewd appointment. Ryland quickly became an important member of Elkingtons' staff, and c.1849 he became manager of the Newhall Street manufactory, a post he held throughout the 1850s and 60s.³⁵⁸

In the early-1840s, Richemont's *Chalumeau Aerhydrique* transformed William Ryland's job. The art of electro-metallurgy proved particularly suitable for the assembly of multipart articles of hollowware such as tankards, cups, tea and coffeepots, candelabra and epergnes, which had formerly been the inventive and highly skilled specialty of Sheffield's best fused-plate manufacturers, and was known in the trade as 'the brazieri line.'³⁵⁹ Hard soldering, often called silver soldering, was used to join gold, silver, and copper and its alloys. The term 'hard' refers to the solder's melting temperature. Rochemont's blowpipe meant that solders with a high percentage of silver and therefore a far higher melting point (over 700 °C) could be applied, and that multi-part articles with intricate joints could be assembled with great accuracy. "The apparatus is so perfectly manageable, that the heat can be directed to any particular point; and the solder becoming melted, the two pieces of the metal become joined together with a firmness which never could be attained under the old process."³⁶⁰ The joints could then be abraded flush and smooth before being hidden by electro-plating or gilding. The reason for the strength of the joint is that hard solder is absorbed and alloyed to the surrounding metal, making the joints stronger than the component metals. It did however require that the sections being joined were engineered flush because hard solder does not act as filler between gaps. Nevertheless, the electrotype process ensured that so long as the original model was well

³⁵⁸ "Ryland, William, manager, (Elkington, Mason, & Co.,) Monument Lane." Listed in White, 1849, p.245.

³⁵⁹ Roberts, 1849, p.36.

³⁶⁰ Dodd, 1844, p.421.

engineered by hand every subsequent electrotype would be as accurate as the initial type pattern.

In electro-plating, hard soldering almost completely replaced soft soldering for mountings, which were filled with brass or German silver instead of lead or tin, to withstand the heat. “The hollow parts of some of the ornaments are filled up with hard metal... thereby forming a much more solid foundation than the lead and tin used in earlier times.”³⁶¹ With large-scale electro-casts, as in traditional bronze casting, when a sculpture was designed and modeled, a great deal of artistic forethought was required to conceal the joints. In a British Association trade report of 1866, W.C. [William Costen] Aitken (1817-1875) wrote of what he termed Elkington’s ‘electro-deposit statuary:’ “It is now customary to cast bronze statues in several pieces, and the same plan is observed in those produced by electro-metallurgy; the belts, or other ornamental projections in clothing or armour, offering the means of effecting the junctions without rendering them obtrusive.”³⁶² Aitken also claimed that the final assembly was often given a thin, uniform, protective coating that hid the joints, and could be given a bronze patina. “After being taken from the mould, the several parts are trimmed up and fitted together, and the whole statue is coated with a liquid bronze to give uniformity of colour. An oxide once formed on the surface decay is arrested, the density of the metal preventing its penetrating beyond a mere line in thickness.”³⁶³

By the mid-1840s, Elkington had brought hundreds of skilled artisans and mechanics from across the old metalwork trades together into one enterprise at Newhall Street. Dodd’s article in *The Penny Magazine* describes each department in turn, from the art department to the modeling process, through the manufacture of the various component parts, and the soldering together, trimming, filing, and electro-plating of an

³⁶¹ *Ibid.*

³⁶² Aitken, 1866, p.519.

³⁶³ *Ibid.*

artwork, and then the various finishing processes, which may include planishing, hammering, and engraving, as well as burnishing and polishing. Reading Dodd's article of 1844, it is striking how much of Elkingtons' labour force were still engaged in old trades. Only two small departments of solderers and electro-metallurgists (who were known colloquially as 'dippers') were engaged in what could be described as distinctly new technological trades. The complexity of the assembly process is analogous to Birmingham's gun-making trade. Every artwork was a team production, passing through numerous skilled hands from diverse trades before it was finally pieced 'together into one complex whole.'

8. *The Death Of Tewdric Mawr.*

The Death of Tewdric Mawr is the only statue that appears in all three known engravings of Elkington's Newhall Street showroom. (Fig.32.) It is the most eye-catching artwork in the images, and the fact that the engravings span the 1850s shows how enduring its popularity was. The sculpture's full title is *The Death Of Tewdric Mawr, King Of Gwent, At The Moment Of Victory Over The Saxons, Near Tintern Abbey, On The Wye*. It was designed by John Evan Thomas, and modeled in plaster by his brother William Meredyth Thomas, in 1848-9. Elkington published two editions of *The Death of Tewdric Mawr*. The original electrotyped version was made especially for the Great Exhibition. It was subsequently exhibited in Dublin in 1853, and was displayed in the Newhall Street showroom. It is now at Brecknock Museum & Art Gallery. It was Elkington's first monumental copper electrotype. *The Death of Tewdric Mawr* founded Elkington's reputation for making monumental statues.

The 2nd edition of 1856 is now on display at Amgueddfa Cymru in Cardiff. It was acquired for £45,000 in 2003 from the Powysland Library Trust, a charitable organization descended from the Powys-land Club, which purchased the statue from Elkington in October 1876 to present as a testimonial to the club's founder Morris Charles Jones: "...in recognition of his services as the Editor the *Montgomeryshire Collections*, and as the Originator of the Powys-land Club and Museum."³⁶⁴ Members and associates of the Powys-land Club paid it for by subscriptions limited to two guineas each. At Jones's request the subscription fund was used for to purchase a sculpture for the Powys-land Museum. A committee, chaired by Edward Herbert, 3rd Earl of Powis, was appointed to choose the artwork and raise the money.

³⁶⁴ *Montgomeryshire Collections*, 1976-77, p.xli.

The testimonial was presented at the Wrexham Eisteddfod in 1876, a brass plate mounted on the original pedestal recorded: “This bronze group represents the death of Tewdric Mawr, King of Gwent and Morganwg, 610 A.D. Tewdric Mawr, in his old age, was induced to appear in defence of his country against the Saxons, whom he thoroughly vanquished near the junction of the Severn and the Wye. The Welsh King, though mortally wounded, urged his brave followers to pursue the flying Saxons. In his dying moments he was comforted by his daughter Marchell, mother of Brychan; while an aged Bard proclaimed to him by harp and song, the victory. This group was designed, from suggestions by Lady Llanover, by the late J.E. Thomas F.S.A., and modelled by his brother W. Meredyth Thomas, Medal Student R.A., London. Elkington and C^o.³⁶⁵ Another brass plate on the front of the pedestal recorded that the statue, illustrative of Welsh history, was presented by subscription to Jones in recognition of his services to the Powys-land Club and Museum.

The original pedestal was replaced when it was installed at Amgueddfa Cymru and its original brass plates are now lost. The loss of the plates as historical artifacts is significant because they documented the important Welsh provenance of the 1856 edition of *The Death of Tewdric Mawr*. Its purchase by the Powys-land Club demonstrated the statue’s huge significance to the Welsh National Revival in the mid-19th-century. It is also regrettable that at 52cm (20½ inches), the wooden plinth currently used to display the statue at Amgueddfa Cymru is half the height of the original pedestal, which was 91.44cm (3ft.) high. All the engravings of Elkington’s showroom depict a 3ft. high pedestal, which deliberately elevated the 160cm (5ft. 3”) group above eye-level. The composition of *The Death of Tewdric Mawr* is a Christian *Pietà*. Tewdric’s daughter Marchell cradles her dying father in her arms, while a druidic bard plays harp and proclaims victory over the Saxons. The bard emphasizes that the scene is Welsh, but also, by visibly narrating the scene

³⁶⁵ *Montgomeryshire Collections*, 1976-77, p.xli.

before him, signifies that the historical event is being transmuted and elevated into literary myth, and, by extension, into sculptural conformation.

The figure of the bard is based on an aquatint by Philippe-Jacques de Loutherbourg the younger, which the Thomas brothers probably knew from the frontispiece of the popular *Musical Poetical Relicks of the Welsh Bards* published by Edward Jones in 1794. Loutherbourg's image of the bard was widely copied, and a painting of 1840, attributed to John Harrison, is now in Amgueddfa Cymru.³⁶⁶ Thomas Jones's painting, *The Bard*, of 1774 is also a possible source.³⁶⁷ It too is in Amgueddfa Cymru, but Thomas's painting has only been on public display since 1965, and Harrison's copy of Loutherbourg was acquired in 1958, so whether the Thomas brothers ever saw either work is speculative. Other possible visual sources were Benjamin West's painting, *The Bard*, of 1778, now in the Tate,³⁶⁸ or the apocalyptic painting by John Martin, *The Bard* of 1817.³⁶⁹

All of these visual artworks, like *The Death of Teydric Mawr*, refracted the ancient origins of Welsh national identity through the prism of Romanticism and a sublime response to the conceptual framing of the subject, and all were inspired by the vivid imagery of Thomas Gray's poem *The Bard, A Pindaric Ode* of 1755-57:³⁷⁰

On a rock, whose haughty brow
Frowns o'er old Conway's foaming flood,
Robed in the sable garb of woe,
With haggard eyes the Poet stood;
(Loose his beard, and hoary hair

³⁶⁶ John Harrison (attributed), *The Bard*, after P.J. de Loutherbourg the younger, 1840, oil on canvas, H84.6/W67.5cm, Amgueddfa Cymru, Accession Number: NMW A 3492.

³⁶⁷ Thomas Jones, *The Bard*, 1774, oil on canvas, H114.5/W168cm, Amgueddfa Cymru, Accession Number: NMW A 85.

³⁶⁸ Benjamin West, *The Bard*, 1778, oil paint on oak, H29.2/W22.9cm, Tate, Museum ref. T01900.

³⁶⁹ John Martin, *The Bard*, c.1817, oil, 213 x 155 cm, TWCMS: C6976, Laing Art Gallery, Newcastle upon Tyne,

³⁷⁰ *Poems by Mr. Gray*, 1768, p.73-74.

Stream'd, like a meteor, to the troubled air)
 And, with a Master's hand and Prophet's fire,
 Struck the deep sorrows of his lyre.

An 'Advertisement' that prefaces Gray's ode recounts the legend that when Edward I conquered Wales in the 13th-century he executed all the Welsh bards in order to suppress the oral tradition and crush the national spirit. Gray's bard foresees the restoration of a native Celtic poetry to Britain, which, the poet claims, fell silent with the ethnic cleansing of the bards.³⁷¹ Historians all agree that no such massacre ever took place. According to Gray's literary executor and biographer William Mason, Gray's poem was inspired by a concert given by the Welsh triple harp player John Parry (Parri Ddall).³⁷²

Gray's ode, Louthenburg's aquatint, Martin's painting, and the Thomas brothers' sculpture all confound Christian and pre-Christian, English and Welsh iconography, history, and myth into a Romantic visual narrative. Asa Briggs wrote of Martin's painting: "The painting which... John Martin made of Gray's poem emphasizes its Romantic qualities to the point of exaggeration. The landscape is unbelievably precipitous, and the wild bard with his harp confronts the endless line of King Edward's army like a being from another world."³⁷³ Like the literary, historical, and visual source material that was available to him, Thomas' sculpture also overstates the antiquity of the Welsh bardic tradition and heavily imposes the values and beliefs of early-Victorian Christianity on the ancient Celts. Tewdric's outstretched arm offers to the ideal viewer, which is the Welsh people, a crucifix, which emphasizes that Saint Tewdric the Martyr died, not just repelling Saxon (which means English) invaders, but also preserving Welsh Christianity. As he narrates the scene, the bard's gaze is fixed upon the crucifix in Tewdric's outstretched hand.

³⁷¹ *Poems by Mr. Gray*, 1768, p.70.

³⁷² Gray, 1807, p.95.

³⁷³ Briggs, 1971, p.292.

The original source of the historical/mythical story of Tewdric was the 12th-century (c.1125) compilation, *Liber Landavensis*, known in Welsh as *Llyfr Llandaf* and in English as *The Book of Llandaff*. In the 1840s, John Evan Thomas would not have had direct access to the original Owston-Gwysaney manuscript,³⁷⁴ and the account of Tewdric's victory on which Thomas based his sculpture was the 1840 edition of *The Book of Llandaff*. Based on later manuscripts in the libraries at Hengwrt and Jesus College, Oxford, it was published for the Welsh MSS Society and translated into English by J.W. Rees who freely-embellished the Hengwrt version with his own Christian values and quasi-Biblical interpretation and phrasing. Longman published it in London, where Thomas read it. In Rees's retelling, Tewdric, who had been in retirement "leading a hermetical life among the rocks of Tintern," is visited by an angel: "Go-tomorrow to assist the people of God against the enemies of the church of Christ, and the enemy will turn their face in flight... and on his face being seen, the enemy turned their backs, and betook themselves to flight, but one of them threw a lance, and wounded him [i.e. Tewdric] therewith, as had been foretold to him..."³⁷⁵

The two works that throughout the early 19th-century were the most widely referred to and respected scholarly studies of the ancient Welsh bardic and Arthurian traditions written in English were William Owen's *Cambrian Biography: or Historical Notes of Celebrated Men among the Ancient Britons* (1803) and Edward Davies' *Mythology and Rites of the British Druids* (1809). However, the popular rediscovery of Welsh myths and legends from a pre-Christian Celtic tradition, and the other likely literary source of J.E. Thomas' inspiration and imagery, was the publication of Lady Charlotte Guest's translations of the Welsh cycle of Arthurian tales, which she published as *The Mabinogion* in several volumes between 1838-1849. *The Mabinogion* distilled stories from medieval Welsh manuscripts including elements of the *The Book of Llandaff*. Lady Guest's edition of *The Mabinogion*,

³⁷⁴ The history of the Gwysaney MS. of the *Liber Landavensis* is chronicled in Evans, 1893, pp.vii-xlii.

³⁷⁵ *Liber Landavensis*, 1840. pp.383-385.

along with Thomas Price's *Hanes Cymru* formed the basis of Alfred Tennyson's popular Arthurian poems, *Idylls of the King*, published in 1856.

I have detailed these literary sources to show why *The Death of Tewdric Mawr* was chosen by Elkington & C^o. to demonstrate at the Great Exhibition how the art of electro-metallurgy could be applied to manufacturing monumental bronze sculptural groups. Like the *Iliad Salver*, it took as its subject a profoundly allusive literary work, which narrates a historical/mythical story. The original plaster was first shown at the *Eisteddfod y Fenni* (Abergavenny Eisteddfod) of 1848, where it won a competition to design "a sculpture illustrative of Cambro-British history." Instigated by Lady Llanover, the most prominent patron of Welsh arts, the competition was a patriotic spur to Welsh artists, who she felt had been slow to respond to the Fine Arts Commission's call in 1844 for British artists to create an ideal sculptural group in bronze depicting subjects illustrative of British history for the New Palace of Westminster.

Following the Eisteddfod, in May-June 1849, the plaster of *The Death of Tewdric Mawr* was exhibited at the Royal Academy. In the exhibition catalogue it is listed as a "Group in plaster... illustrative of Cambro-British history." Unusually for an R.A. catalogue the subject and narrative of the sculpture is explained, and there is even a page reference, "See *Liber Landavensis*, page 383," to draw attention to the literary inspiration for the sculpture in *The Book of Llandaff*.³⁷⁶ It is unknown whether it was at the *Eisteddfod* in 1848, or Royal Academy in 1849, that the original plaster version of *The Death of Tewdric Mawr* first caught the attention of Elkington & C^o.

More than any other visual artwork on an overtly Welsh subject by a Welsh artist, *The Death of Tewdric Mawr* represents how the 19th-century revival of national identity in Wales looked backward into the mists of Cambrian Medieval Celtic history, and its ancient bardic traditions, to find the roots and establish the prehistory of its modern

³⁷⁶ *Exhibition of the Royal Academy*, 1849, p.51.

identity. The *Book of Llandaff* sets Tewdric's heroic stand against the pagan Saxon invasion in the historical Kingdom of Gwent c.584. The book also names him as the king of Glywysing, the petty kingdom to the west of Gwent, and it is likely that he ruled both kingdoms. From the 6th-century to mid-10th-century, Gwent and Glywysing's histories were often entwined, until the two kingdoms effectively united under the name Morgannwg. By 1845, that area of Wales was producing 55% of the world's output of copper.

In the late 1840s, G.R. Elkington and Josiah Mason decided to establish a smelting and refining works to supply copper to their electro-plating business. During the 1840s, the commercial development of electrical applications, like electro-metallurgy and the electric telegraph, steadily increased the demand for copper as an electrical conductor. Copper was used to generate electricity in the cells of batteries and copper windings of magneto-machines, and for the wiring used to carry electricity. But copper, brass, and other copper-alloys had long been staple materials in the Birmingham trades, and by midcentury the demand for copper-alloy wire in pin-making, button-making, and other mass-market industries, had made Birmingham the unrivalled centre for wiredrawing. Copper was also used for copper tubes and boilers in steam engines, and throughout the 1840s the price of copper steadily increased. By 1848, the consumption of copper and cupronickel (German silver) as the staple non-precious metals used in Elkington's electro-plating business, and by others electroplating under license, had grown to such an extent that the partners decided to manufacture their own copper. The prospective growth of the art of electro-metallurgy seemed limitless. Initially planned as a subsidiary supplier to the electro-plating trade, Mason & Elkington's Pembrey Copper Works Company quickly became a profitable collateral branch of the business.

Elkington & C^o. electro-cast the first edition of *The Death Of Tewdric Mawr*, now at Brecknock Museum, especially to promote public awareness of its modern mode of

manufacturing bronze sculpture at the Great Exhibition. As a sculpture commissioned for exhibition in the public realm it was primarily an audacious exercise in corporate PR, which certainly caught the attention of the Victorian press and public. On Saturday 3rd July 1852, *The Death of Tewdric Mawr* was illustrated on the cover of *The People's Illustrated Journal of Arts*. (Fig.33.) It was made with copper manufactured by Mason & Elkington's new copperworks at Pembrey in Wales. So, although the sculpture's artistic subject looks backwards at a key moment in the prehistory of Welsh nationhood, its corporate objective represented something that became far more important than the chronicles of *The Book of Llandaff* to the development of Welsh national identity. The mining and refining of copper was the foundation of Wales's modern industrial economy and society in the 19th-century, and gave rise to a vast nexus of global industries. Looked at today, *The Death of Tewdric Mawr* appears emblematic of the Welsh copper industry, and the remarkable pioneering discoveries in industrial copper-refining made at Pembrey. The first edition of *The Death Of Tewdric Mawr* was the first monumental sculpture in British art to be manufactured 'grain by grain' by electrodepositing copper. At the Great Exhibition of 1851, it was displayed as a masterpiece in the traditional sense. Its technical bravura proclaimed that Elkington & C^o. were now "bronzists" equal to their British precursors Chantrey and Westmacott, and technologically superior to their French contemporaries, Société Collas et Barbédienne and Susse frères.

9. Elkington's Electro Casts in the 1850s.

As an art form redolent of Ancient Rome and Renaissance Italy, bronze statues had a high cultural cachet for early-Victorians. In the late-1840s, two major public art commissions were instigated in London; the bronzes planned for the Lords Chamber of the New Palace of Westminster, and the four large bronze bas-relief panels at the base of Nelson's Column, which were cast from captured French guns, and installed in 1849-1852. Both were both highly patriotic commissions, but highlighted the fact that despite Britain's industrial supremacy it possessed neither the art-metalworkers nor foundries to equal the French at bronze casting. In October 1849, Henry Cole gave a speech to influential merchants and bankers at The Mansion House to promote the idea of the Great Exhibition. Supporting Prince Albert's importunity over ensuring the event was an open and fair comparison of 'the works of industry of all nations,' Cole turned to bronze casting as an example. "We may learn from it how much the French are in advance of us in the manufacture of bronzes; but it may be a comfort to us and to others to know that the great bronze manufactories of France have grown up within the last 30 years."³⁷⁷

By the early-1850s, Elkington's exhibition of electro-bronzes at Birmingham in September 1849, Elkington's Art Gallery in May 1850, and the Great Exhibition, appeared to have changed that irremediably. "The visiter [*sic*.] will not fail to notice some articles in bronze, which are also produced by the agency of electricity," wrote *Cornish's Stranger's Guide Through Birmingham* in 1851, before claiming that Elkington's 'bronzes' surpassed those made by French foundries. "Before the discovery of this art the manufacture of bronzes was almost completely confined to France; for there, in addition to the facilities which an educated taste afforded for the reproduction of statuary, abundance of skilled labour and cheap material them gave the French a virtual monopoly

³⁷⁷ *The Times*, 18th October 1849, p.6.

of the trade. To use their own phrase, *Nous avons changé tout cela* – we have changed all that – and the bronzes in this establishment are proofs of the fact. In perfection of drawing, the specimens in these rooms are quite equal to those of continental manufacture, and they surpass in surface finish and richness of colour.”³⁷⁸

When the Crystal Palace reopened at Sydenham in June 1854, Elkington effectively acquired another showroom in the Birmingham Court, and it was their monumental electro-casts that they pushed to the fore. In the light airy spaces of the Crystal Palace at Sydenham Elkington had room to display a large collection of life-size statues. What is striking is that at the same time that Elkington was preparing for the 1855 *Exposition universelle* in Paris by employing a Frenchman, Pierre-Emile Jeannest, to direct their artistic staff, oversee their creative design, and make exhibition showpieces, and fulfil important commissions, they were almost exclusively promoting British sculpture in electro-bronze. A review in *The Art-Journal* in October 1856, shows that Elkington’s display in the Crystal Palace at Sydenham was a who’s who of the British sculptors of the 1850s: “Referring to the exhibition of Messrs. Elkington in the corridor of the gallery, we must point out the collection of life-size statues – all, if not most of them, from the sculptures of British artists: here is MacDowell’s “Day-Dream,” Durham’s “Fate of Genius,” Thomas’s “Racket Player,” the latter two exhibited in the Great Paris Exhibition [of 1855]; and others after Gibson, Weekes, Bell, Kirk, Cumberworth, &c.”³⁷⁹

Correspondence reveals that in the headily optimistic days after the Great Exhibition Henry Elkington had planned to expand his manufacture of small electro-bronze statuettes from the casts of historical works provided by Braun to contemporary works by British artists. Letters of 13th and 29th July 1852 from the sculptor James Sherwood Westmacott to Henry detail negotiations over manufacturing statuettes of *The Peri*, which Westmacott had recently modeled, “...to make some arrangement with regard

³⁷⁸ *Cornish’s Stranger’s Guide*. 1851, pp.81-82.

³⁷⁹ *Art-Journal*, 1st October 1856, p.307.

to executing it in bronze.”³⁸⁰ Westmacott’s original 14½-inch model of the female figure of a winged angel, which he sketched in outline in a letter, was, like so many of Elkington’s artworks, derived from a literary source, the quartet of narrative poems, *Lalla Rookh, An Oriental Romance* (1816) by Thomas Moore: (Fig.34.)

“One morn, a Peri at the gate
Of Eden stood disconsolate ;
And as she listen’d to the springs
Of Life within, like music flowing,
And caught the light upon her wings
Through the half-open portal glowing,
She wept to think her recreant race,
She e’er have lost that glorious place !”³⁸¹

Westmacott agreed to sell the model of *The Peri* to Henry Elkington, along with the copyright to manufacture it in bronze, for £20, with the proviso “...that I am at liberty to execute it larger at any time should I think fit.” Westmacott later sculpted it in marble and it was exhibited at Paris in 1855 and at London in 1862, when engravings of it appeared in *Illustrated London News* and *The Art Journal*.³⁸² In 1852, *The Peri* was an attempt to market fashionable art for middle-class British mantelpieces in imitation of the Parisian vogue for bronze statuettes.

In 1851, *Cornish’s Stranger’s Guide* had optimistically claimed that Elkington rivaled the Parisian foundries, like Société Collas et Barbédienne and Susse frères, which were established in 1838 and 1839 respectively.³⁸³ By 1865, William Burges was refuting the idea that any British foundry could compete with Paris for large or small bronzes. “In the present day the numberless small bronzes which decorate our houses are produced in

³⁸⁰ Elkington, AAD/1979/3/1/8.

³⁸¹ Moore, 1884, p.103.

³⁸² *Art-Journal Illustrated Catalogue*, 1862, p.313.

³⁸³ *Cornish’s Stranger’s Guide*. 1851, pp.81-82.

Paris, which city, somehow or other, has obtained a specialty for this branch of the arts.”³⁸⁴ He suggests that there simply was not a profitable market for small bronzes in Britain like there was in Europe. “It will probably be asked why do we not make small bronzes in England. I also have asked the same question. The reply was, that there exists no sufficient reason beyond the very sufficient one that it does not pay. Messrs. Elkington have attempted it, but I believe with the above result, and accordingly turn their attention more to electrotypes.”³⁸⁵ However, Elkington’s volte-face on manufacturing small bronzes to focus solely on monumental commissions and the manufacture of electrotype reproductions was a direct consequence of Henry’s illness in the summer of 1852, and his unexpected death on 26th October. A letter to Henry from W.H. Finlay, the manager of Elkington’s London showroom at 22 Regent Street, reveals that Finlay had taken over liaising with Westmacott because Henry was absent from work due to the decline of his health.³⁸⁶

The link between Elkington and James Sherwood Westmacott, who had studied under his uncle Sir Richard Westmacott (1775-1856) at his studio and foundry in Pimlico, highlights the lack of longevity and continuity in bronze sculpture foundries in Britain. In the early decades of the 19th-century, Richard Westmacott’s foundry, at which he cast both his own statues and those of other sculptors, had been the leading foundry in Britain. Nevertheless, with an effusive mid-Victorian belief in industrial progress, Aitken concluded his 1866 trade report by predicting that the art of electro-metallurgy would soon completely replace traditional bronze casting: “On the whole, judging from the progress made within the last five years, it seems highly probable that, in the production

³⁸⁴ Burges, 1865, p.47.

³⁸⁵ Burges, 1865, p.48.

³⁸⁶ Elkington, AAD/1979/3/1/8.

of bronze statuary, the process of casting will ere long be entirely superseded by the simpler, safer, and more certain operations of electro-metallurgy.”³⁸⁷

³⁸⁷ Aitken, 1866, p.519.

10. Elkington's Electro Casts in the 1860s.

Aitken's trade report of 1866 was titled "Cast and Electro-deposit Statuary in Bronze and Copper." It vividly described the industrial scale of operations required to make Elkington's monumental electro-casts. The scaling-up of the electrotypes process that Aitken described typifies many of the new features of industrialization in the 1860s. "The process is simply that of depositing metal, restored to its metallic form from a solution, on a surface exposed to the action of a galvanic battery – the apparatus being enlarged, the battery power increased, the solution vats widened and deepened according to the requirements of the moulds, and the quantity of the solution in which after being prepared they are immersed. Troughs are now provided as much as 15ft. in length, 8ft. in width, and 9ft. in depth, capable of containing 6,680 gallons. The strength of the solution of sulphate of copper is maintained by immense sheets of copper suspended in the vat."³⁸⁸ During the 1860s, incremental growth in the scientific understanding of electro-chemistry led to constant developments and improvements in the materials, tools, and techniques that were applied to the art of electro-metallurgy, which demanded an increasingly specialized division of labour. By the end of the decade the arrays of batteries and early magneto-machines were augmented by Henry Wilde's invention of the dynamo-electric machine, or self-energizing dynamo. Faraday read Wilde's paper to the Royal Society in 1866, which suggested replacing the permanent magnets of earlier magnet-electric machines with electro-magnets to generate far greater electrical power, and increase the scale of production. "The moulds are in plaster," Aitken reported, "and taken from the original model in pieces of such a shape and size as to be easily removed, and readily put back together again. After being varnished, to hinder absorption of the solution, the interior of the mould is coated with black lead, which attracts the copper

³⁸⁸ Aitken, 1866, p.517.

thrown down from the solution when decomposed by the electric current, and which, grain by grain, builds up the statue.”³⁸⁹

No other writer on metalwork in the Victorian period wrote about the history of the brass and bronze trades of Birmingham with greater technical insight than Aitken. He was born into the brass-foundry trade at Dumfries in Scotland, and after working at his father’s works he moved to Birmingham, aged 27. From 1844-c.1862, he worked for Robert Walter Winfield (1799-1869), eventually becoming Clerk of Works at his vast Cambridge Street brassworks: “For many years Mr. Aitken, whose name in Birmingham will always be remembered in connection with Art, was at the head of the designing department of the works. His correct knowledge and wonderful skill in the application of correct principles of form and colour to articles of manufacture for daily use, raised the fame of Mr. Winfield’s house as high, artistically, as it was for excellence of material and workmanship.”³⁹⁰ Soon after the untimely death of the founder’s heir, John Fawcener Winfield, who died aged 37 on 1st January 1861, Aitken left R.W. Winfield & C^o. to manage [Francis Alfred] Skidmore’s Art Manufactures and Constructive Iron C^o. at Alma Street in Coventry, but returned to Birmingham c.1863 to manage the youthful John Bernard Hardman’s works on Newhall Hill, remaining there until he retired in 1872.³⁹¹

Aitken’s report began with a description of ‘the *cire-perdue* or wax process,’ and gave a brief history of traditional bronze casting in before to the invention of electro-metallurgy. Prior to 1823, Aitken asserts, Richard Westmacott the younger (1775-1856) was the only notable caster of bronze sculpture in Britain, and he credits the revival of life-sized bronze statues to Thomason in Birmingham, and portrays Elkington as his successor. “With this feat, probably, would have terminated the history of bronze casting in Birmingham,” he writes after describing Thomason’s achievements, “but for the spirit

³⁸⁹ *Ibid.*

³⁹⁰ ‘S.D.R.’ [Eliezer Edwards], *Personal Recollections*, 1877, p.41

³⁹¹ *Birmingham Daily Post*, 25th March 1875.

and enterprise of the Messrs. Elkington, who subsequently added this to their other processes connected with fine art manufacture.”³⁹²

Aitken’s report concludes by listing twenty-three monumental “electro-bronze” statues by nine different artists, none under 6ft. in height, which had been made by Elkington since 1860. British sculptors modeled all but one, and almost all of them are commemorative portraits of distinguished men, including four of the Prince Consort. Joseph Durham sculpted eight of the statues and William Theed sculpted seven. Aitken’s list of 1866 includes the six statues by Durham that Elkington electro-cast for the *Memorial to the Exhibition of 1851* in the Royal Horticultural Society’s garden in South Kensington, which was unveiled on 10th June 1863. The commissioning of the memorial endured a troubled and protracted history of dissension, which saw it in turn tacitly opposed and then enthusiastically supported by Prince Albert. After his death in December 1861, it was transformed into a memorial to his role in the 1851 Exhibition. The other two statues listed by Aitken as designed by Joseph Durham and electro-cast by Elkingtons were also memorials to the Prince Consort. A second electro-cast edition of the statue of Prince Albert on the 1851 Memorial was erected on the seafront in St. Peter Port, Guernsey. Another edition, which Aitken erroneously claims was erected at Wellington College, was actually acquired for the terrace of Albert Memorial Middle Class College at Framlingham, Suffolk, which opened in 1865. Aitken’s list does however correctly locate five statues of officers and statesmen who served alongside the Duke of Wellington in the Napoleonic Wars, which were sculpted by William Theed for the exterior architectural niches at the newly-established Wellington College. Elkington eventually electro-cast twenty-seven statues and busts by William Theed for the school, a commission that was instigated by Prince Albert.

³⁹²Aitken, 1866, p.513.

Aside from the Wellington College busts and statues, the geographical spread around Britain, and the kind of the patrons commissioning Elkingtons' electro-casts in the 1860s, and the subjects they were commemorating is interesting. Besides the four statues of the Prince Consort, which were sculpted following his death in December 1861, there are four statues of Lords, one of an Earl, two Generals, and one of Malcolm Canmore, King of Scotland, sculpted by William Theed for Balmoral. Two commemorate men of letters: John Henry Foley's highly-acclaimed statue of Oliver Goldsmith, which is in front of the main entrance of Trinity College, Dublin, and Alexander Munro's *Naiad with an amphora* for the base of the colossal marble statue of the editor and journalist, Liberal politician, and social reformer, Herbert Ingram, who founded the *Illustrated London News*, which is in Boston, Lincolnshire. The Ingram sculpture was unveiled without the *Naiad* on 6th October 1862, which was electro-cast and installed on 13th July 1863.³⁹³ Munro's *Naiad* is the only statue by Elkington designed by a sculptor associated with the Pre-Raphaelite movement.

Two of the electro-cast statues of men commemorated are manufacturers from the industrial northwest of England. John Fielden (1784–1849) was the owner of Fielden Brothers at Waterside Mills in Todmorden. He was one of the largest cotton-manufacturers in Britain, and M.P. for Oldham. Samuel Crompton (1753-1827) was the inventor of the spinning mule. The 2.44m high statue of Crompton was unveiled on 24th September 1862 in Nelson Square, Bradshawgate, Bolton. Paid for by public subscription, including contributions from cotton-spinners in the town's factories, it honoured his contribution to the town's industry.³⁹⁴ Gilbert James French, a wealthy textiles merchant from Bolton, who was a keen antiquarian and Crompton's first biographer, instigated the subscription for the statue.³⁹⁵

³⁹³ *Illustrated London News*, Saturday 26th September 1863.

³⁹⁴ Wyke, 2004, pp.209-211.

³⁹⁵ *Bolton Guardian*, 1862, *Cuttings Book of Gilbert French, 1859-1927*, p.204.

In 1863, the statue of John Fielden, also by the Irish sculptor John Henry Foley (1818-1874) was electro-cast by Elkington. It was erected outside Todmorden Town Hall in 1869. It commemorates Fielden's factory reforms, and specifically his role in proposing the *Ten Hours Act* of 1847, which reduced the maximum working hours allowed for women and children to a 10-hour day and 58-hour week. Like the statue of Crompton, it was also paid for by public subscription, including factory workers from across Britain. Todmorden Town Hall straddles the Walsden Water, a tributary of the River Calder, which, until January 1888, was the county boundary between Lancashire and Yorkshire. One of Britain's finest municipal buildings, it has remarkable carved pediments at either end, which represent the two counties whose boundary it once crossed. The pediment in Yorkshire represented engineering and agriculture; the Lancashire pediment represented the cotton-spinning industry, with the statue of Fielden beneath it. The Fielden statue has now been moved to Centre Vale Park, Todmorden. Amongst the various statues of distinguished figures by Elkington from the 1860s, the statues of John Fielden and Samuel Compton were an altogether new subject matter in British portraiture. Although standing figures commemorating illustrious figures, royalty and nobility, military and political leaders, and men of letters, arts and sciences were the mainstay of Victorian sculpture, these two electro-cast figures had distinguished and elevated themselves from the manufacturing classes during the industrial revolution by virtue of the cotton-spinning trade.

The number of British sculptors that designed monumental electro-cast statues in copper made by Elkingtons is in marked contrast with the designers and modelers in silver and gold that they were employing in-house, who, by the early 1860s, were predominantly French. The only electro-cast statue designed by a foreign artist that was listed by Aitken in 1866, is one the most exotic and intriguing of all the foreign artists that Elkington worked with. Aitken incorrectly spells his name "De Epegry." Prosper Charles

Adrien d'Epinay (1836-1914) was a French sculptor born a British subject, and the son of a prominent lawyer and proslavery lobbyist in Mauritius. From 1857-1860 he studied caricature with the sculptor Jean-Pierre Dantan in Paris, and from 1861 he studied at the studio of Luigi Amici in Rome. He was active in Rome and London from 1864-1874 but in the mid-1870s turned his focus from London to Paris. He also maintained a studio in Mauritius, and in 1865, he sculpted a memorial statue of Sir William Stevenson, a friend of his father, who had been the British governor of Mauritius from 1857-1863. Electro-cast by Elkington, it was originally erected in the *Jardins de la Compagnie*, the garden of the French East India Company at Port Louis, but was later moved into the courtyard of Government House, a French colonial building dating from 1738.³⁹⁶

It is clear from Aitken's list of statues that most of the large electro-casts that followed *The Death of Tewdric Mawr* were commissions that Elkington were contracted to manufacture. Public subscriptions or public institutions paid for most of them, with the subject, site, and sculptor selected by committees, who subsequently employed Elkington to execute the statue from the artist's designs and model. Unlike their works in precious metals, few were designed and modeled in-house. In the 1850s and early-1860s, Elkington & C^o. were involved in a quartet of major public art commissions that established them as the preeminent bronze foundry in Britain.

³⁹⁶ Foujols, 1996.

11. *The Magna Carta Statues* in the House of Lords.

In 1847, the same year that they made the original plaster model of *The Death of Tewdric Mawr*, the Thomas brothers were also working on an important commission for two life-size statues representing *William, Bishop of London*, and *William Marshall, Earl of Pembroke*, which were to be installed on niches in the Lords' Chamber of the New Palace of Westminster. (Fig.35.) Elkington eventually made seventeen of the eighteen statues of *The Magna Carta Statues* commissioned by the Fine Arts Commission, which were designed and modeled by nine different British sculptors. The first of the statues made by Elkington for the Lords' Chamber was a copper electro-cast and was exhibited alongside *The Death Of Tewdric Mawr* at the Great Exhibition. Its description in the *Official Catalogue* of 1851 was, "Geoffrey de Mandeville, Earl of Gloucester, A.D. 1215; made for the Royal Commission of Fine Arts, in electro-bronze, being one of the statues designed for the new House of Lords: modeled by J. Sherwood Westmacott at Rome."³⁹⁷ The decision by Elkington to electro-cast and exhibit *The Death Of Tewdric Mawr* at the Great Exhibition was undoubtedly aimed at procuring major public commissions, especially the monuments of distinguished figures and events illustrative of British history that were planned for the New Palace of Westminster.

It is beyond the scope of this thesis to fully chronicle the history of the commissioning process of *The Magna Carta Statues*, or the re-emergence in January 2013 of the plaster casts from which they were made. Following recent restoration work on two of the statues in the House of Lords, Rupert Harris, the Managing Director of Rupert Harris Conservation Ltd., has asserted that the zinc statues were not in fact electro-cast by Elkington & C^o., but were sand-cast at the foundry of Muritz Geiss in Berlin. This contradicts not only the accepted historical account, but also documentary evidence in the

³⁹⁷ *Official Catalogue*, 1851, p. 672.

Elkington & C^o. records. Further research, including metallography analysis on the statues, which are immured in niches high on the walls of the Lords Chamber, and accessible only with great difficulty, needs to be done to clarify the important matter of the mode of manufacture used for the zinc substrates. However, what is certain are that the zinc statues were electro-coppered by Elkington and given a dark ‘rouge’ bronze patina.

The Magna Carta Statues for the House of Lords were the first major public art commission that Elkington received, and played a considerable role in establishing their reputation for making monumental statuary. The decision, although ostensibly made on the basis of cost, was a resounding official endorsement that the new art of electro-metallurgy was equal, if not better, and certainly cheaper, than traditional bronze casting. Following protracted parliamentary wrangling over the commissioning process and expenditure, the manufacture and installation of *The Magna Carta Statues* was finally begun in 1852, just after Lord John Manners, 7th Duke of Rutland was appointed First Commissioner of Works and Public Buildings, a government position that had been created the previous year to take over the administering of public art and architecture from the Commissioner of Woods and Forests. Sir Benjamin Hall, 1st Baron Llanover, oversaw the completion of the statues when he took over as Commissioner from July 1855 – February 1858. Benjamin Hall was married to Lady Llanover, at whose instigation *The Death Of Tewdric Mawr* had been made, but the real impetus behind the appointment of Elkington to manufacture the statues was undoubtedly Prince Albert, who chaired the Fine Arts Commission overseeing the procurement of art for the New Palace of Westminster.

The Elkington company records reveal that in May 1852, Henry Elkington wrote a letter to Charles Eastlake, expressing satisfaction at “Having now completed the

Experimental Figure in Zinc Electroplated & Bronzed...”³⁹⁸ The letter informed the Commissioners that the firm were confident they could complete the series of figures intended for the Lords Chamber in zinc. Elkingtons’ letter proposes both the price at which they would be prepared to make each figure, and gives reassurances “with regard to the colour of the bronze.” They “humbly propose” that “the price... be extended to £80 for each figure, at which price we engage to deliver them in that style of finish, both as regard the artistic details and the perfection of the copperplating, which we feel would not fail to give satisfaction...”³⁹⁹ They reassured the Commissioners that there would be no difficulty with the “color of the bronze... on account of the body being of Zinc, & the whole Series may be the same colour & effect as if the same were of Electro-copper – the difference of color now apparent in this Specimen figure will disappear by the effect of time & the General look of the bronze be much improved.”⁴⁰⁰ The reason that the Fine Arts Commission turned to Elkington was entirely to do with meeting the cost out of the public purse, and the shortage of reliable British bronze foundries to undertake the work. The decision by Parliament to select Elkington to electro-cast the statues in copper-plated zinc instead of casting them conventionally in bronze was heralded as innovative.

The statues comprised eighteen life-sized standing effigies of the pre-eminent barons and bishops who gathered at Runnymede Field to meet King John on 15th June 1215. They were designed and modelled by nine different sculptors, who made two each: Frederick Thrupp, John Thomas, and William Frederick Woodington were already established and well known artists; the young James Sherwood Westmacott and Thomas Thornycroft, the Scottish sculptor, Alexander Handyside Ritchie, the Irishmen Patrick MacDowall and Henry Timbrell, and the Welshman John Evan Thomas were slightly less well known. Despite the resolutely British choice of subject matter, the artists were

³⁹⁸ Elkington AAD/19793/1/8, p.153.

³⁹⁹ *Ibid.*

⁴⁰⁰ *Ibid.*

selected to represent all of the United Kingdom. No other major public art commission in British art history has presented such a snapshot of established and up-and-coming British sculptors like *The Magna Carta Statues*.

In 1848, by commissioning the statues, the *Fine Arts Commission* revived and transformed the story of Magna Carta as a powerful political allegory of the longevity and solidity of Britain's social and political system in the wake of the wave of revolutions that were sweeping across Europe. Halévy in his *History of the English People* wrote, "In 1848, revolution broke out on the Continent, and brought its trail of destruction. Everywhere revolutionaries were massacred, there was disorder and reaction, England, alone exempt from both, realized, after witnessing four years of anarchy abroad, that the superficial disintegration of 1847 had concealed from her how solid her institutions really were. They were free, yet firm. Why not say they were firm because they were free."⁴⁰¹ That is why the Magna Carta statues were chosen by the Commissioners, which included the historians Hallam, Mahon, and Macaulay, to stand in the House of Lords, as perhaps the most politically and historically symbolic public art commission in British art history. However, like Elkington's showroom they present an anachronism of multi-layered visual deceptions: A national monument to the origins of British constitutional democracy, they are installed in the House of Lords, where, paid for by public money they are largely hidden from public view and seen only by aristocrats. Immured like upright sepulchral statues on A.W.N. Pugin and Charles Barry's Victorian Neo-Gothic niches, they look like they could have been plundered from a medieval cathedral, but were sculpted by Victorians; seemingly ancient bronzes, they are 'experimental figures in zinc, electroplated and bronzed.'

⁴⁰¹ Halévy, 1961, p. 413.

12. William Theed's *Scenes from Tudor History* in the Prince's Chamber.

The Prince's Chamber is a small antechamber between the House of Lords and the Royal Gallery at the Palace of Westminster. Its decoration celebrates the Tudors, with a gallery of twenty-eight royal family portraits set into the paneled compartments of the walls. Below these, also set into paneled compartments, are twelve 'bronze' alto-relievs, which were designed and modeled by William Theed (1804-1891) between 1853-1856, and cast in phases by Elkington beginning in May 1854. As the tableaux were completed, many were shown at the annual Royal Academy exhibitions between 1853-59. They depict famous scenes from Tudor history. The influence of the French history painter Paul Delaroche is profound in the compositional design of Theed's historical tableaux, in the literary character of his style, and theatrical *mise-en-scène* of Tudor subjects refracted through a wistful, Romantic 19th-century lens: In the two compartments on the east and west sides of the chamber are *The Field of the Cloth of Gold* and *The Visit of Charles V to Henry VIII*. In the three compartments on the south side, west of the door are *The Escape of Mary Queen of Scots*; *The Murder of Rizzio*, and *Mary Queen of Scots Looking Back at the Coast of France*. In the three compartments on the south side, east of the door are *Queen Elizabeth Knighting Drake*; *Raleigh Spreading his Cloak as a Carpet for the Queen*, and *The Death of Sir Philip Sidney*. On the north side of the chamber is *Edward IV Granting a Charter to Christ's Hospital*; *Lady Jane Grey at her Studies*; *Sebastian Cabot before Henry VIII*, and lastly *Catherine of Aragon Pleading Her Case Against Divorce from Henry VIII*. (Fig.36.)

Looking at Theed's Tudor tableaux today, the particularity of the events depicted and omitted bring to mind the popular engravings in High Victorian history books, like *Cassell's Illustrated History of England*, published in multi-volume installments from 1865, which had over 2000 illustrations, and sold over 250,000 copies in its first edition. The Prince's Chamber is dwarfed by the two rooms adjacent to it; the Lords Chamber and the

even larger Royal Gallery, which is dominated by Daniel Maclise's huge, 45 feet long, frescoes of *The Death of Nelson* and *The Meeting of Wellington and Blucher after Waterloo*. Delaroche also profoundly influenced Maclise, but moving from his vast history paintings to Theed's alto-rilievos involves a pronounced transition, not simply of scale, but between crowded visual panoramas of triumphalist history and distinctly literary scenes of emotional intimacy. The most famous of Theed's Tudor tableaux depicts the chivalry of Walter Raleigh placing his cloak over a muddy puddle, a story almost certainly elaborated, if not wholly invented, by the historian Thomas Fuller, and perpetuated by Walter Scott in his Elizabethan romance, *Kenilworth* (1821).

Two letters relating to the Prince's Chamber commission survive, written by Charles Eastlake, secretary to the Fine Arts Commission, to Elkington & Co. The first, dated 8th May 1853, accepted Elkington's estimate of the 10th March "...amounting to five hundred and fifty pounds for casting in metal, including bronzing and chasing in the very best style, twelve *alto-rilievos*..."⁴⁰² The second letter of 4th June 1855, is an appraisal of the 'metal cast' of *Raleigh Spreading his Cloak*, and the list of 'proposed corrections' reveals the extent to which the Commissioners insisted on a very particular bronze-like colouration to the metal casts. "The colour of the separate specimen – a head which you have sent – is preferred to that of the cast, and the Commissioners are desirous that all the casts should be bought exactly to the tint of that head, with as little blackness in the hollows as possible."⁴⁰³

William Theed III was born in Staffordshire, where his father William Theed II (1764-1817) was an artist in the employment of Wedgwood. He attended the Royal Academy Schools and then worked in the studio of E.H. Baily. In 1826, Theed moved to Rome where he studied under Thorwaldsen, Richard James Wyatt, and John Gibson,

⁴⁰² Elkington, AAD/1979/3/1/8, p.163.

⁴⁰³ Elkington, AAD/1979/3/1/8, p.165.

whose white marble ensemble of Queen Victoria flanked by allegorical female figures representing Justice and Clemency dominates the Prince's Chamber.

13. William Theed's Statues and Busts at Wellington College.

As sculptural portraits of the main British protagonists in the Napoleonic Wars, William Theed's *Statues and Busts of British and Allied Commanders of the Napoleonic Wars* at Wellington College, which were electro-cast by Elkington from 1858-1862, comprise a truly unique body of work. They are not only a magnum opus in 19th-century portraiture and the art of electro-metallurgy, but also of huge importance in terms of the social, military, and political histories, and individual life stories that they represent. The inclusion of some of the key political, economic, and diplomatic leaders alongside the military commanders reveals how profoundly the Napoleonic Wars affected the whole of British society.

However, because of their exclusive location on niches in the quadrangles and façades of a private school they have been almost entirely neglected by art-historians. Only one essay has been dedicated to them, a 14-page booklet printed by the college in 1979, titled: *"So Noble a Work:" the Story of the Statues and Busts Made for Wellington College (1858-1862)*. Mark Baker, a Common Room member and Tutor at Wellington College from 1936-1970 and the College Archivist from 1970-1985, wrote it. Long out of print, it provides an interesting and informative account of the commissioning of the statues and busts from the College's point of view, especially of the role of the Prince Consort in the selection and arrangement of the statues and busts, and the funding of the sculptures through the subscription of the families of the officers commemorated.

They have also been overlooked because, like the House of Lords' statues and Prince's Chamber's alto-relievos, although ostensibly public artworks, they are part of the architectural fabric of a private institution where public access has been very limited ever since they were installed. However, all three sculptural suites were commissioned for illustrious British institutions that have enjoyed a financial stability and continuity of existence, which has ensured their preservation in situ. All three series also demonstrate

categorically that Elkington did not only use the electrotype process to make reproductions of art historical works, but also to make unique contemporary artworks that were electro-cast rather than traditionally cast. By the early-1860s, the public perception of Elkington as mere copyists had been irrevocably changed. This was very largely due to their eye-catching monumental copper electro-casts. That was certainly the case after Elkington's trophy, in the richly-coloured clerestory nave of the 1862 International Exhibition, was seen, quite possibly given its central position, by over six-million visitors. It is also undoubtedly the case that the Wellington College statues and busts have been overlooked by art-historians since the 19th-century precisely because they are electro-casts rather than traditional bronze casts.

Some measure of how differently they were regarded when the first array of statues and busts were completed can be gauged from an article in *The Times* of 11th July 1861. At Prince Albert's instigation, before they were permanently placed in their niches at the newly built Wellington College, they were publicly exhibited at a flower show in the Horticultural Society's new gardens at South Kensington, which until from 1861-1888 were where the Royal College of Music and Imperial College now stand.⁴⁰⁴ Its opening on 10th July-August 1861 was reviewed by *The Times*, which dedicated over half of its article to the artworks and the 'peculiarity' of their manufacturing process rather than horticulture. After listing the figures portrayed in the twenty-four sculptures displayed on the garden's pedestals and niches, *The Times* wrote, "They are not remarkable as likenesses, but the peculiarity of them is that they have all, even to the largest, been made by Messrs. Elkington by the electrotyping process. This is opening up a new era for bronze statues and busts, for while the most exquisite finish is secured by this process the cost of the

⁴⁰⁴ *Survey of London*, 1975, pp.124-132.

work is reduced to little more than half what it would be if cast in metal by the ordinary method.”⁴⁰⁵

The pedestals and niches had been included in the design of the Horticultural Society’s new gardens at the insistence of Prince Albert, much as he had insisted on niches in the initial planning stages of John Shaw’s architectural designs for Wellington College in 1856. *The Times* suggested that the two full-length statues of *Lord Hill*,⁴⁰⁶ and *Marshal Lord Beresford*,⁴⁰⁷ (Fig.37.) and twenty-two busts exhibited at South Kensington gave grounds for optimism for the Society and College in the fundraising both still required to permanently fill all their niches. At Wellington College, wrote *The Times*, “...it was considered that the niches for statues and busts would never be filled, but already six statues have been presented, and no less than 22 fine busts, all in bronze. It was probably with a view to stimulating the Fellows to making individual offerings of the same kind that two of the statues and all of the busts were shown yesterday for the first time at Kensington.”⁴⁰⁸ However, it was the ambitious scale of the series of life-sized statues and busts seen as an integral composition that most captivated *The Times*. Although only 33 families eventually proved willing and able to pay for their ancestor’s bust, Prince Albert had drawn up a list of 103 distinguished officers and politicians to be commemorated with busts, and eight full-length statues were planned for the niches on the north and south façades of the College. “The statues we have mentioned (all of which have been presented by relatives to Wellington College) are the largest and most important examples of electrotyping yet cast, and the success of the experiment is considered to be so perfect that it has now been decided to execute the bronze figures for the ’51 Exhibition Memorial in the same manner.”⁴⁰⁹

⁴⁰⁵ *The Times*, 11th July 1861, p.12.

⁴⁰⁶ Rowland Hill, 1st Viscount Hill (1772-1842).

⁴⁰⁷ William Carr Beresford, 1st Viscount Beresford (1768-1856).

⁴⁰⁸ *Ibid.*

⁴⁰⁹ *The Times*, 11th July 1861, p.12.

14. Joseph Durham's *Memorial to the Great Exhibition of 1851*, 1852-1863.

Joseph Durham's *Memorial to the Great Exhibition of 1851* was unveiled in June 1863, having endured an ignominious, backbiting commissioning process that lasted over a decade. Those travails have been thoroughly documented in the *Survey of London*.⁴¹⁰ Originally, it surmounted a water-feature in the original Royal Horticultural Society gardens at South Kensington, roughly where Prince Consort Road now is. The monument was to have been erected in Hyde Park on or near the site where the Crystal Palace has stood, but by November 1859, at the instigation of Prince Albert it was included into the designs for the Horticultural Society's garden in South Kensington. The organization, which acquired Prince Albert as its President in early-1858, and became the Royal Horticultural Society after his death in 1861, contributed £800 to provide an ornamental base suitable for their water feature.

After initially distancing himself from the project, and firmly opposing the sycophantic aims of the commissioners to place his statue atop the monument, Prince Albert subscribed £250 to the project, and became closely involved with overseeing its design. In July 1861, the foundations and base of the memorial were begun, but on 14th December Prince Albert died, and within a few days the Prince of Wales informed the Horticultural Society that Queen Victoria now wanted Prince Albert's portrait to replace her own on the statue, and that he would pay for his father's statue. Durham was commissioned to sculpt Prince Albert's likeness, and the memorial was finally unveiled at a major public ceremony on 10th June 1863.

The travails of Durham's *Memorial to the Great Exhibition of 1851* make it probably

⁴¹⁰ *Survey of London*, 1975, pp.133-136.

the most troubled public art commission in British art history, which utterly confused its meaning, design, and sense of purpose. No art historical account of the monument has yet looked at Durham's *magnum opus* beyond the history of dissension, which remains a very British embodiment of poor planning through the haughty abuse of public art by self-seeking patrons. A project initiated as a monument to the sycophancy of a few civic dignitaries, self-serving subscribers and journal editors was justly mired in opposition and controversy from the outset. Its removal to the gardens at South Kensington under the auspices of the Horticultural Society at the inspired insistence of Prince Albert gave it a vague sense of purpose and place, although as the *Survey of London* rightly said, "It offered a setting in some ways highly suitable for the memorial, although a monument to an exhibition becomes still more otiose when it does not even mark the site."⁴¹¹ (Fig.38.)

After Prince Albert's death in December 1861, it was belatedly transformed once again from a testimonial to a memorial of his personal role in the 1851 Exhibition. Durham's memorial statue became an archetype for the frenetic spate of memorial statues of Albert that followed, although according to the *Survey of London*, "The memorial did not give the Queen a high opinion of Durham's abilities." There is little doubt that Durham's career was thwarted by the intrigues against him during the protracted commissioning process, and by the fact that his *magnum opus* became inextricably linked to both Queen Victoria's and the country's outpouring of grief for Prince Albert. It was inevitably seen as a memorial to the Prince Consort rather than the Great Exhibition, and was almost immediately supplanted by formal approval of George Gilbert Scott's design for the *Albert Memorial* in April 1863, and in 1888 it was removed from the being the centerpiece of the Horticultural Society's gardens to its present position outside the rear entrance of the Albert Hall.

⁴¹¹ *Ibid.*

When looked at aside from their vivisepture on a flawed memorial, each of Durham's sculptures is a remarkable figurative statue in its own right. Considered together with *The Magna Carta Statues* in the House of Lords, Theed's *Scenes from Tudor History* in the Prince's Chamber, and his statues and busts for Wellington College, Durham's *Memorial to the Great Exhibition of 1851* completed a quartet of major public art commissions of the 1850s, which were all supported and actively overseen by Prince Albert. All of the commissions were testimonials to his huge personal enthusiasm, unstinting support, and ambitious vision for Elkington's application of the art of electro-metallurgy to monumental electro-cast sculpture.

Chapter IV.

Elkington's French Artists:

Pierre-Emile Jeannest, Auguste Willms, and Léonard Morel-Ladeuil.

1. The Influence of *l'orfèvrerie française* on Elkington & C^o.

In concluding Chapter II, I analyzed how, in 1851, Luynes perceived two parallel strands emerging in Elkington's art of electro-metallurgy. In this chapter, I will demonstrate how the Great Exhibition also inspired a concurrent transformation in the artistic style and quality of their productions in ornamental precious metalwork, and how and why their enduring reputation rests on the artworks they produced under the designations of electroplaters, silversmiths, and enamellists. This chapter traces the historical development of Elkington's ornamental precious metalwork and enamelwork after 1851, which, in a review of the International of 1862, Wallis categorized as art-metalwork for the dining table and sideboard; showpiece artworks, especially silver repoussé, damascene in steel and gold, and champlevé enamelwork combined with copper, silver, and parcel-gilt.⁴¹² This chapter will also study the East Asian inspired cloisonné enamelwork that they debuted at the Paris *Exposition universelle* of 1867, and which were among their most creative contributions to Vienna's Weltausstellung 1873, and Philadelphia's 1876 Centennial.

In the previous chapters I have shown that a key characteristic of the art of electro-metallurgy was the wide range of complex artistic, scientific, and industrial processes that Elkington's developed and synthesized and then applied to the production of a vast variety of articles of manufacture. In Chapter I, I showed how this ability to exploit complex synthetic systems arose from their origins as Birmingham gilt-toymakers and steel-pen manufacturers, and was further developed through the close-relationships they established, from 1836, with the Parisian gilding ateliers, and especially, after 1842, with Charles Christofle et Cie., their exclusive electro-plating partner in France. I believe that this particular nexus, uniting the industrial processes of Birmingham's gilt-toymakers

⁴¹² Wallis, 1863, p.27-28.

with the artistry and artisanal practices of the *doreurs* and *orfèvres* of Paris, was the basis of Elkington's (and Christofle's) success. However, it has also often placed them at odds with the snobbish and insular categorizations that British historiography has imposed upon precious metalwork and cast-bronze sculpture. This was already evident at the time of the *Exposition universelle* of 1867, when E.S. Dallas addressed the issue in one of his 'special correspondent' reports from Paris in *The Times*. "The gold and silver plate of the exhibition is but part of its metalwork, and the same work which is displayed in one metal may be displayed in another. Thus, Messrs. Elkington and C^o., who of all the English exhibitors have attained the greatest distinction in metalwork, offer to our notice articles not only of gold and silver, but also of copper and bronze and steel; and it is difficult to speak of their works in one sort of metal without speaking of their works in another."⁴¹³

In his range of scholarship, acute critical intelligence, and felicity of his style, the Scottish journalist E. S. Dallas was the most astute British arts-critic of the 1860s. Despite various attempts to revive his reputation by Drinkwater (1932),⁴¹⁴ Roellinger (1941),⁴¹⁵ et al., his expansive and profoundly insightful journalism and books remain unjustly neglected. By examining the variety of Elkington's designs, materials, and techniques in 1867, Dallas apprised his British readers of the broader designation that the French used to describe ornamental art-metalwork. "The artist in metal is called a goldsmith – *orfèvre* – from the most noble of the metals with which he has to do; but his labour would be limited if he had only to do with a metal so precious as gold. So it happens that – at least in French usage – *orfèvrerie* is a name which designates nearly all metallic work that has any pretension to be fine."⁴¹⁶ Dallas adduced that Elkington were more like some of the Parisian *orfèvres*, drawing extensive comparisons with Christofle, and also Odiot, founded in 1690, the doyen of virtuosic experimentation, whose trophy was next to Elkington's in

⁴¹³ *The Times*, 4th September 1867, p.8.

⁴¹⁴ John Drinkwater, 1932, p.201-223.

⁴¹⁵ Roellinger, 1941, pp.652-664.

⁴¹⁶ *The Times*, 4th September 1867, p.8.

1867, rather than British silversmiths like Garrard, Hancock, Hunt & Roskell, or Harry Emanuel, who also exhibited in Paris that year. “As with Messrs. Christofle and C^o., nothing is too great for them and nothing is too small. They will sell you spoons that cost a few shillings (better spoons, too, than the French can make), or they will sell you a shield of rich and rare workmanship that will cost hundreds of pounds, that has exhausted two years of a fine artist’s life, and that is all alive with fancy.”⁴¹⁷

By 1867, it was quality of their design, and innovative synthesis of styles and techniques, and not just the novelty of electro-metallurgy as applied science that distinguished Elkington from their peers in the British silver industry. “They resolutely aimed at the very highest art; they sought out the best designs and the best designers;” Dallas wrote of Elkington, “and now they stand before the world in the first ranks of silversmiths, carrying off the chief prize from all their English rivals. The variety of the work they produce is remarkable. They are not only silversmiths and goldsmiths, but bronze-workers, also enamellers and electrotypists.”⁴¹⁸ Dallas felt his use of the French appellation *orfèvre* to describe Elkington was particularly apt because their two leading artists were Frenchmen.

Shortly after the Great Exhibition, the death of Henry Elkington meant that Frederick Elkington took over his uncle’s creative role just as the company began making preparations for the Paris *Exposition universelle* of 1855. It was under Frederick’s youthful direction in the mid-1850s that the company began to look predominantly for aesthetic inspiration from *l’orfèvrerie française*. Between 1853-99, Elkington & C^o. employed three very talented and distinguished French artists: Pierre-Emile Jeannest, Auguste Willms, and Léonard Morel-Ladeuil. It is beyond the scope of this thesis to provide the extensive monographs that these artists deserve, but I believe that the lack of literature on these three artists is a glaring omission from 19th-century art history. This chapter will provide a

⁴¹⁷ *Ibid.*

⁴¹⁸ *Ibid.*

summary of their early careers and influences, subjects and source materials, and then identify and analyze their key artworks to demonstrate their respective contributions to Elkington's œuvre and reputation.

G.J. Cayley in his official "Report on Gold and Silver Plate" at the *Exposition universelle* of 1867 observed how reliant the creative reputation of Elkington's commercial electro-plate was on its association with the artistic showpieces they commissioned for International Exhibitions. Cayley was an accomplished goldsmith and he commented how much better their trophy would have looked "...if the best of what the firm possessed had been set out to advantage, instead of being crowded higgledy-piggledy into a corner in order to show a mass of electro-plate, which acts merely as dead weight to be floated by their works of art."⁴¹⁹ There was a striking parity between Elkington and Christofle's strategy of employing artists to push the parameters of design and technical research across a wide variety of different art-manufactures in different ornamental styles. Both firms sought to creatively elevate their commercial activities and corporate image through the continual association of their maker's marks with the artists that they employed primarily to exhibit at the International Exhibitions. The artists that Charles Christofle, and his successor Henri Bouilhet, employed were Pierre-Louis Rouillard, Mathurin Moreau, Auguste Madroux, Émile-Auguste Reiber, Charles Rossigneux, and Albert-Ernest Carrier-Belleuse.

Under Frederick Elkington's creative direction, employing artists in-house was a natural corollary to his father's lateral hiring of consulting chemists and technically-skilled artisans, and the relationships his uncle fostered with Schlick and Braun to acquire casts. Integrating in-house designers, sculptors, and specialist art-metalworkers with the firm's scientific and industrial technicians involved art, science and industry in constant dialogue. By bringing artists into the factory, it encouraged the syntheses of scientific, industrial,

⁴¹⁹ Cayley, 1868, p.487-498.

and artistic processes. Working in such close proximity, electro-metallurgy and other collateral technologies could be introduced at any stage of a creative process, which fostered an environment of constant experimentation.

In return, the art of electro-metallurgy offered artists like Jeannest, Willms, Morel-Ladeuil, et al., the opportunity for their artworks to be widely-published to a far broader demographic. More pragmatically, Elkington & C^o. provided the steady income of salaried employment that freed artists from the vagaries of working for wealthy individual patrons. Jeannest and Morel-Ladeuil's Memoranda of Agreement show they were guaranteed regular, well-paid, full-time work, all-the-year-round. Corporate employment in also provided an escape from political upheavals in France, which was especially germane for all three artists. Willms, like many Frenchmen, first came to work in Britain after the 1848 Revolution, where Jean-Valentin Morel employed him in London throughout the duration of the 2nd Republic. Both Jeannest and Morel-Ladeuil began their long sojourns in Britain because they had accepted youthful commissions for patrons associated with particular political causes, which tainted their personal reputations in Paris. Whilst neither artist appears to have been passionately committed to those causes, naively allowing their artistic talents to be used for propagandist purposes by politically ambitious patrons curtailed their early careers in France. By 1862, Willms was able to state in a letter to John Thadeus Delane, editor of *The Times*, that the firm employed "ten French artists," and "also a numerous body of English artists, including draughtsmen, modellers, chasers, fitters, &c. all of unquestionable ability..."⁴²⁰ Literature about the three major French protagonists in Elkington's story is scant enough, but art history has completely forgotten the major supporting cast that helped create their remarkable œuvre. The diversely talented team of French and British art-metalworkers working under Willms, included the repoussé sculptors, Théodore Mainfroy, Thomas Spall, William Stace, and Frank G.

⁴²⁰ *The Times*, 28th May 1862, p.5.

Jackson, and the damascener Joseph Roucou.

Since Hobhouse and Shand in 1937,⁴²¹ and a flurry of publications around its centenary in 1951,⁴²² a great deal has been written about the impact of the Great Exhibition on British art and design. Walton (1992) showed how a combination of artisanal manufacturing methods and bourgeois market demand for high-quality products in France led to a major haul of the prizes, and universal public acclaim, for *les orfèvres français* in 1851, and the subsequent influence that had on the industrialization of design in Britain.⁴²³ However, comparatively little has been written about the equally profound impact of the *Exposition universelle* of 1855 on ornamental art-metalwork in Britain. The British Jurors placed a notice on the back cover of the *Official Catalogue*, dated 2nd July 1855, which announced “That it is desirable an early intimation should be given to the British Public of the great excellence of the Exhibition, and of its marked advance in the objects exhibited over that of 1851.”⁴²⁴ If 1851 stimulated greater aesthetic demands in the retail market for ornamental design among the Victorian public, 1855 was a revelatory masterclass in the superior artistry of *l’orfèvrerie française*. The impact of 1851 on Elkington & Co. was only a foreshock to the creative influence of 1855. The Great Exhibition left the Victorians with an insatiable enthusiasm for design, but it was the *Exposition universelle* of 1855 that imbued and transformed British design in the late-1850s with a more sophisticated sense of French subtlety and grace. “The stirring and good-humoured fifties had left a grace and lightness behind them, which we can feel in the dress and decoration of the time; in the layout of the dinner tables, no longer burdened with gargantuan tureens and processional silver camels...”⁴²⁵

Truesdell (1997) has shown how Louis-Napoléon used *la fête impériale* to

⁴²¹ Hobhouse, 1937; Shand, 1937, pp.65-72.

⁴²² Gibbs-Smith, 1950; Pevsner, 1951, and French, 1951.

⁴²³ Walton, 1992.

⁴²⁴ *Exposition Universelle*, back cover, 1855.

⁴²⁵ Young, 1936 (1969), p.154.

consolidate his coup d'état by energizing the 2nd Empire with imperial pageantry and spectacles of prosperity, which promulgated a sense of luxuriance among the French bourgeoisie.⁴²⁶ The *Exposition universelle* of 1855 effectively transferred *la fête impériale* onto an international stage. The Anglo-French alliance against Russia in the Crimean War prompted an unprecedented rapprochement, which in summer 1855 was only just beginning to unravel because of public outrage at the military debacles reported by William Russell in *The Times*. Louis-Napoléon visited Windsor in April 1855, and Victoria and Albert took their children to Paris from 18th-27th August, specifically to see the *Exposition universelle*.⁴²⁷ In January 1860, the *Cobden-Chevalier Treaty* was signed, a Free Trade agreement that more than doubled the value of Anglo-French trade in the early-1860s. The impact of 1855 on the Francophile sensibility of the 29-year old Frederick Elkington, just as he inherited his creative role in the family firm was profound and lasting.

⁴²⁶ Truesdell, 1997.

⁴²⁷ Starcky, et. al., 2008.

2. Pierre-Emile Jeannest (1813-1857).

On 29th September 1853, Pierre-Emile Jeannest was appointed to “undertake the entire management, care and direction of all French work people” employed by Elkington & C^o. His initial term of service was for 4¼ years, at a salary of £450 per annum. This was later amended to 5 years at £500 per annum.⁴²⁸ This was a considerable annual salary, almost twice that of doctors and clergy.⁴²⁹ Before his untimely death, just four years later, aged 44 on 7th February 1857, Jeannest had transformed Elkington’s creative reputation. His friend, George Wallis, whose tenure as Headmaster of the Government School of Art at Birmingham coincided with Jeannest’s employment by Elkington, wrote his obituary in *The Art-Journal*, which stressed the key role he played in raising Elkington’s creative reputation: “The success of his productions were co-incident with the success and reputation of the important house for which he laboured, and it is not too much to say that the genius and versatility of M. Jeannest, his remarkable knowledge alike of the minutest detail in ornament as in the human figure and animals, did much to elevate the productions of Messrs. Elkington to the position now almost universally assigned to them.”⁴³⁰

As Headmaster at Manchester (1844-46) and Birmingham (1852-57) Schools of Design, Wallis was an early advocator of art-education in Britain. In 1858, a year after Jeannest died, he left Birmingham to join South Kensington Museum, where, in 1863, he became Senior Keeper of the art collections, and was a prime instigator in circulating electrotype reproductions of works of art to regional museums and art schools. Wallis felt Jeannest had an important influence on raising the standards of ornamental design in Britain that would take some time to be fully appreciated. “That it will be a long period

⁴²⁸ Elkington, AAD/179/3/1/8.

⁴²⁹ Lindert and Williamson, 1983.

⁴³⁰ *Art-Journal*, 1st July 1857, p.227.

before M. Jeannest's place will be fully supplied in the decorative and ornamental arts of this country is certain. His influence, however, has been too great to be easily obliterated; and his best works will, at some future period, be quoted as examples of that influence at a period when professors of Art, *par excellence*, knew little or nothing of ornamental design..."⁴³¹

All of Jeannest's 'best works' were made for Elkington, where he was able to return to his *métier* of designing and modeling metalwork, having previously been employed making Parian ware and Majolica for Mintons at Stoke. His father, Louis-François Jeannest (1751-1856), was a medalist of some note, and Emile was trained as a bronzier. He left his father's atelier to study drawing and composition under Paul Delaroche. Details of Jeannest's early life and education are uncertain, but the influence of Delaroche's teaching was profound and lifelong. Jeannest's great artistic innovation for Elkington was to translate Delaroche's highly finished style of painting dramatic scenes from British history into the *ronde-bosse* and *bas-relief* of precious metalwork. Like Delaroche, Jeannest was regarded, especially by Wallis, as a great art teacher, working as a modeling master at both the Potteries School of Design and Birmingham School of Art. Wallis recalled the "thorough worship... with which he was at all times met by his pupils, ...the effect of his touches upon the work of a student was, at times, something marvelous..."⁴³² Alongside his own design and modeling work, Jeannest taught Elkington's artistic staff, imparting the French methods of art-education he learnt from Delarcoche, who became professor at the *École Nationale Supérieure des Beaux-Arts* in 1833.

Whilst at Mintons, Jeannest designed the "Victoria" pattern dessert-service that Queen Victoria acquired in 1851, and, after his appointment at Elkington, Jeannest became a favourite artist of Victoria and Albert who purchased several important works by him, including a set of twelve three-branched candelabra for their new private

⁴³¹ *Ibid.*

⁴³² *Ibid.*

residence at Balmoral, and the spectacular equestrian silver statue *Lady Godiva*, which was also purchased by Queen Victoria, and given as a birthday gift to Prince Albert in 1857.

3. Royal Patronage: The *Balmoral Candelabra*, December 1855.

Queen Victoria and Prince Albert commissioned the *Balmoral Candelabra* in 1855. (Fig.39.) They were heavily themed with Scottish motifs in gold and oxidized silver. The royal apartments of the new castle had been completed that autumn, and an invoice of 19th December 1855 survives revealing that two pairs cost £160.⁴³³ Prince Albert suggested ideas for the design, which is a Walter Scott-inspired Scottish fantasia, with real stags' horns inset into the shaft, and cairngorms (smoky brown-grey crystal quartz found in the Cairngorm Mountains near Balmoral) inset around the nodes at the top and bottom of the shaft. Each of the three-branched candelabra has four gilt candleholders in the shape of a thistle. There are gilt stags' heads about the base, which has stags' hooves as feet. Perhaps the most striking feature, which is typical of Jeannest's designs for candelabra, are the pendant folds draped about the three branches, which are a silvered plaid design. Between the cairngorms on the nodes is a Celtic knot design, and the cross of St. Andrew is repeated around the base.

The Scottish-themed candelabra typify the furnishings and ornaments commissioned by Victoria and Albert to complement William Smith's Scottish Baronial architecture at Balmoral. For Albert, Balmoral and Deeside was a reminder of his childhood in Thuringia, but what Victoria and Albert shared there was the joyous escape they had both found in Scott's *Waverley Novels* during their youth. Some of the candelabra were loaned back to Elkington by the Queen to be exhibited alongside the statue of *Lady Godiva* at the 1862 Exhibition, shortly after the Prince Consort's death. Prince Albert's hand in their design, and the sense of an intimate glimpse into the personal furnishings of the royal couple's private Highland retreat, gave the *Balmoral Candelabra* an enduring public appeal, and some of the candelabra and *Lady Godiva* were loaned again by the

⁴³³ Royal Collection, Ref. RA PP/VIC/15/6180.

Queen to be exhibited at Vienna in 1873.

Although now burnished, the *Balmoral Candelabra* were originally oxidized, which was a fashionable patina applied, almost de rigueur, to silver in the mid-1850s, and Jeannest frequently used oxidization. ‘Oxidizing’ involved various recipes containing sulphides that blackened silver to create an antique, tarnished appearance. The vogue for oxidized silver was an aesthetic reaction to the perceived vulgarity of over-burnished silver exhibited *en masse* at the Great Exhibition, but it originally emerged as a counterfeiting technique that made new fake articles look old. In the early-mid 1850s, connoisseurs and critics effused over how oxidization brought *chiaroscuro* and *sfumato* to silverware; contrasting oxidized shadows with burnished silver and gilt highlights to accentuate the depth and sense of volume of three-dimensional modeling and chasing. As the 1850s progressed Elkington’s commercialized the technique, using it on the hollowware they marketed to socially aspirational Victorians, who wanted their newly-acquired electro-plate to look like antiques or ancestral heirlooms. That movement of a scientific technique devised to imitate an historic object or style into an artistic technique that can be industrialized and applied commercially, typifies the role that Elkington’s artists played within the company.

On Saturday 21st February, just a fortnight after Jeannest died, the Society of Arts held its first *Conversazione* of the 1857 season. According to the *Journal of the Society of Arts*’ review “the attendance was unusually large. ...In the lower-rooms were arranged numerous specimens of Art-manufactures in enamel, gem work, gold and silver plate, bronzes, electro deposits, fictile wares, tapetry, &c.”⁴³⁴ Elkington contributed 24 artworks, 11 of which were by Jeannest. They represented the full range of Jeannest’s work, in what was seen by many as a mini-retrospective. Ornamental objects, like two flower-stands; a “Jug, enriched with figure of cupids;” more themed candelabra, “with figures in German

⁴³⁴ *Journal of the Society of Arts*, 1857, p.222.

military costume,” and themed caskets enriched with figurative chasing, at which Jeannest excelled, were exhibited alongside three figurative-groups depicting historical *tableau vivant*, which were Jeannest’s specialty showpieces. These included an electrotyped reduction of *Queen Elizabeth Entering Knebworth Castle, A.D. 1575*, which they had shown in 1851, and two scenes, also reduced electrotypes, depicting the first pitched-battle of the Civil War in 1642: *Charles 1st At Edge-hill*, and *Queen Henrietta Maria And Prince Rupert At Edge-hill*. The *Journal of the Society of Arts* wrote: “The above three groups are from portions of the history of Warwickshire; and the full-sized groups were made expressly as prizes for the Warwick races, for which several other pieces have been produced by this firm, from models by Jeannest.”⁴³⁵ From 1851-56, Elkington was commissioned annually to make a series of prizes for Warwick Races. Jeannest’s great innovation was to translate the dramatic *mise-en-scène* of Delaroche’s history painting into figurative sculptural groups and reliefs.

Jeannest came to Britain c.1845-46, shortly after he had turned 30. Why he left Paris is unknown. Unlike many French émigrés he did not leave because of social upheaval or political reasons. Wallis speculates, “Prior to leaving Paris... he appears to have been employed by the late Duc d’Orléans, the eldest son of Louis-Philippe, and by several of the French nobility. It is probable that the untimely death of his royal patron might have had something to do with his determination to try his fortune in Britain. He was resident in London for about two years but does not appear to have been very successful.”⁴³⁶ In 1848, Jeannest was recruited by Herbert Minton in Stoke-on-Trent as a figure-modeller for Parian and Majolica wares. A year later Minton recruited Joseph-Léon-François Arnoux (1816-1902) from the Sèvres porcelain factory as his art director. Jeannest continued to make occasional designs for Minton after he left to work for Elkington in September 1853.

Art-historians always cite the “group representing Queen Elizabeth entering

⁴³⁵ *Journal of the Society of Arts*, 1857, p.223.

⁴³⁶ *Art-Journal*, 1st July 1857, p.227.

Kenilworth Castle, A.D. 1575,” exhibited at the Great Exhibition, as the first work that Elkington commissioned from Jeannest before employing him full-time two years later. The Jury, chaired by the duc de Luynes, especially praised the work in their report: “The Jury have particularly noticed, among the works of Messrs. Elkington and Mason, the beautiful group entirely of cast silver representing Queen Elizabeth on horseback between a gentleman in waiting and a page, after a model executed by M. Jeannest, a French artist. This group is, in the opinion of the Jury, a very choice work of art...”⁴³⁷ There is little doubt that the Jury’s specific praise for *Queen Elizabeth Entering Kenilworth* in 1851, and subsequent press coverage, made Jeannest’s public reputation, and secured him his position with Elkington. However, two years earlier at the Birmingham Exhibition of 1849, Elkington exhibited a “Tankard, silver gilt (electro-deposited and gilt), designed and modeled by E. Jeannest.” Besides supervising the firm’s French workmen, Jeannest was also employed to design and model showpieces for the forthcoming *Exposition universelle* at Paris in 1855. Elkington & C^o. was officially fêted by the French, being awarded the grande médaille d’honneur, and made Chevalier de la Légion d’honneur.

Delaroche’s reputation diminished greatly after he died, but when Jeannest moved to Britain his former tutor was one of the most acclaimed artists in Europe. To have been taught by Delaroche had great cachet. In 1849, *The Art-Journal* wrote, “Perhaps no modern historical painter has achieved a wider or more deserving popularity than Paul Delaroche, arising not less from his high attainments as an artist, than from his choice of subjects, which generally have been selected from some well-known passage of history, to which all may lay a prescriptive claim on the score of knowledge.”⁴³⁸ Delaroche had a populist touch when it came to portraying history. The greatest cultural influence on Delaroche’s generation was The Waverley Novels of Walter Scott: “The decisive event was the vogue in France for Walter Scott,” wrote Luc-Benoist, “I should say madness,

⁴³⁷ *Reports by the Juries*, 1852, p.1121.

⁴³⁸ *Art-Journal*, 1st February 1849, p.60.

because his influence was prodigious, unbelievable. At the death of the novelist (1832) two million volumes of his works circulated in France.”⁴³⁹ In 1828, Sainte-Beuve declared that French arts were, “In an epoch when the imitation of Walter Scott is almost a necessary contagion, even for the very highest talent...”⁴⁴⁰ Scott’s popularity in France was partly due to the way in which the early translations by Defauconpret adapted his prose for the French readership, but also Scott set large parts of *The Waverley Novels* in France, and interwove his picaresque fictions with serious interpretations of European history.⁴⁴¹

Extrapolating on a quote by abbé Prévost, Maxwell (2006) termed Scott’s writing ‘Particular History,’ which he defined as “a distinctive kind of biography that effectively doubles as history because of the way it manipulates effects of foreground (the life of an individual) and background (public events). Public events can come into view sharply and abruptly, then once more recede. Conversely, a hero or heroine can seem to enter or exit history, somewhat as actors go on and off a stage.”⁴⁴² Like Delaroche’s *Lady Jane Grey*, Jeannest’s *Queen Elizabeth Entering Kenilworth* and *Lady Godiva* are ‘Particular Histories.’ Rather than representing the Earl of Leicester’s lavish reception of Queen Elizabeth in 1575, at the medieval castle he had refurbished into a Renaissance palace, Jeannest depicts an intimate moment as she arrives on horseback and is attended by Leicester and a page from his retinue. Three individuals caught in moment of practicality dramatically evokes of one of the great romantic pageants of thwarted love and ambition in Elizabethan history. However to the Victorian audience at the Great Exhibition the Elizabethan courtship that the sculpture evoked was filtered through the vivid narrative of Walter Scott’s historical novel *Kenilworth: A Romance* (1821). Jeannest’s first great success for Elkington was indebted to the French vogue for Scott.

⁴³⁹ Luc-Benoist, 1928, p.17.

⁴⁴⁰ Sainte-Beuve, 1901, pp. 173-174.

⁴⁴¹ Pittock 2006, pp. 11-45.

⁴⁴² Pittock 2006, pp. 12.

4. Jeannest's *Lady Godiva* of 1856-1857, and the *History of Warwickshire* Series.

Jeannest's great masterpiece, the equestrian silver statue *Lady Godiva*, is from his *History of Warwickshire* series. (Fig.40.) It was the artwork that he designed and modelled shortly before he died. Because Queen Victoria acquired *Lady Godiva*, and perhaps because of its erotic subject, it has remained in the private quarters of the Royal Collection ever since, where very few art-historians have seen or written of it. None have mentioned that it was originally intended as a racing trophy at Warwick. Shortly after it was made in 1856, it was described in the 'Sporting Intelligence' section of *The Times*. "'The Cup," or rather group, illustrates one of the most popular legends of Warwickshire – that of the compassionate Lady Godiva. It was modelled by Mr. Jeannest, chief of the fine art department at Messrs. Elkington and Mason's. The group is mounted on a richly adorned pedestal, on the sides of which are bronze chasings in high relief. Permission has been obtained to allow the prize to be forwarded to the King of the Belgians for His Majesty's inspection.'"⁴⁴³

The Art-Journal of October 1856 acclaimed Jeannest's *History of Warwickshire* series of bronzes, comparing them to the famous *Iliad Salver*: "'The Iliad Salver," although it is the latest, and perhaps the best, of the numerous salvers produced by Messrs. Elkington, is certainly not the only work of the kind which will interest the visitor: there are many others in the Court that will well repay close inspection; so too will the large collection of shields, vases, dishes, candelabra, statuettes, and bronzes of infinite variety, and for useful and ornamental purposes. We would particularly direct attention to the bronze groups, illustrative of "Warwickshire History." Since those in the Crystal Palace were executed, others have been produced, as "Guy of Warwick and the Dun Cow," the Lady Godiva riding through Coventry:" these have not yet made their appearance at Sydenham, though we presume they will do so in time. The "Lady Godiva" has just paid a visit to the King

⁴⁴³ *The Times*, 4th September 1856, p. 7.

of Belgium, at Brussels, who expressed a great desire to see her ladyship; it has, we hear, elicited the admiration of all who have seen it, especially of the gentlemen of the turf, who pronounce it one of the most splendid prizes ever seen on a race-course; for we should remark, it was executed for a prize, and was won recently by Lord Clifden. We presume it will be reproduced by the manufacturers.”⁴⁴⁴

The 3rd Viscount Clifden was the courtier and racehorse owner Henry Agar-Ellis, whose horse Eugenie won the Great Warwick Handicap that year. He had been Gentleman of the Bedchamber to the Prince Consort from 1846-1852, but how and when Queen Victoria first viewed *Lady Godiva* is unknown. The original silver statue of *Lady Godiva* that was once in the possession of Lord Clifden is now part of the civic art collection in Coventry. The city Archives at the Herbert Museum and Art Gallery reveal that a local benefactor from Coventry named Alfred Harris acquired it in 1953 to give as a gift to the city to celebrate the award of Letters Patent to Coventry, and in memory of his mother Clara Ann Harris. Just as *The Art-Journal* predicted, Elkington reproduced it: Five months after Jeannest died, on 27th July 1857, Queen Victoria purchased a second edition of the *Lady Godiva* statue for £250, and presented it to Prince Albert as a birthday present on 26th August 1857.⁴⁴⁵

The legend of Lady Godiva became a popular subject for Victorian artists after the publication of Tennyson’s poem *Godiva* in 1842. Daniel Donoghue claimed the popularity of Tennyson’s poem among mid-Victorians was not due to the usual sensationalism of portraying public nudity in the name of art, but the way in which the poem draws the reader into seeing contemporary themes in its historical narrative.⁴⁴⁶ Concerns about the transformation of the public and private roles of men and women, and compassion for the plight of the industrial working class were very 19th-century

⁴⁴⁴ *Art-Journal*, 1st October 1856, pp.307-308.

⁴⁴⁵ Royal Collection, Ref. QV Bills, 25/816725/8167.

⁴⁴⁶ Donoghue, 2003, pp. 81-84.

concerns disrobed by an 11th-century legend that many Victorian scholars doubted was true. Tennyson's modern reflections on the narrative, whether history or myth, begin as he waits at Coventry station for the train from Birmingham to London, along a railway line built only two years earlier.

“I waited for the train at Coventry;
I hung with grooms and porters on the bridge,
To watch the three tall spires; and there I shaped
The city's ancient legend into this...”⁴⁴⁷

Tennyson's opening gambit about reshaping a well-known legend to fit the present is of course an analogue of all historical art, but assumes a particular poignancy in the modern mode of manufacture applied by Elkington to Jeannest's plaster model of *Lady Godiva*. The expressive sculptural marks made by Jeannest's rasp on the plaster are caught in the minutest detail by the process of electro-deposition. Silver, partly gilt, with copper-alloy bas-reliefs and champlevé enamel on the base, it is uncommonly large for a silver statuette, but far smaller than most equestrian bronzes; it has a truly opulent and unusual sculptural presence. Although immaculately finished, it is dramatic and expressive in its treatment of subject and material. The innovative, but restrained use of champlevé on the base suggests the influence of the generation of French enamellists that were inspired by the goldsmiths Charles Wagner and François-Désiré Froment-Meurice to revive European enamelling techniques. The two varying designs of the champlevé borders running horizontally around the top of the base, and vertically down either side of the copper bas-relief, subtly complements the otherwise heavily-gilded base. It is resonant of the delicate use of champlevé set into geometric strapworks of gold in the religious enamelwork of Léon Cahier. It is one of the earliest known uses of champlevé enamelling by Elkington.

⁴⁴⁷ Tennyson, 1842, p.112.

A likely visual source for Jeannest's study is the equestrian plaster statuette by William Behnes inspired by Tennyson's poem and sculpted c.1844, which was shown twice at the Royal Academy in 1842 (No. 1346) and 1844 (No. 1271), and again at the Great Exhibition, where Jeannest probably saw it. It is now in the Draper's Room of St. Mary's Guildhall in Coventry. Another source, which Jeannest might have seen at the Royal Academy in 1854 (No. 1386), is William Calder Marshall's full-length plaster sculpture of Lady Godiva of c.1850, also now in St Mary's Guildhall, in front of the Oriel Window of the Great Hall. The enameled and gilt copper *Jewel-cabinet* designed by Lewis Grüner that was exhibited by Elkington at the Great Exhibition possibly inspired the base of the statue.

There is no escaping the fact that Jeannest's *Lady Godiva* appears to be an idealized and sexualized likeness of the young Queen Victoria. A comparison of Jeannest's statue with Albert's favourite portrait of Queen Victoria, 'the secret picture' she commissioned in 1843 as a 24th birthday present for her husband;⁴⁴⁸ reveals a likeness in the shape of the face, the long straight nose, limpid eyelids and protuberant eyes, the small mouth with the distinct philtrum and Cupid's bow of the top lip. Just like 'the secret picture,' it was an intimate and erotic birthday gift from Victoria to Albert. Given the strong sexual undercurrent in the Lady Godiva myth, and the manner in which that has been so extensively exploited by artists it was a very risqué commission. Equally, the subtext in the Lady Godiva myth of the public exposure and scrutiny to which the young queen's private life was subjected to must have spoken powerfully to both Victoria and Albert. After it was exhibited at the Weltausstellung 1873 in Vienna it disappeared from public view into the private confines of the Royal Collection. It was exhibited for the first time in 137-years in *Victoria & Albert: Art & Love* at The Queen's Gallery, London in 2010. Whereas the *Balmoral Candelabra* were ornamental objects of domestic utility, albeit

⁴⁴⁸ Franz Xaver Winterhalter, *Queen Victoria, 'the secret picture,'* 1843, oil on canvas, 64.8 x 53.3 cm, Royal Collection, RCIN 406010, Ref. OMV 813.

the kind of showpiece silverware few homes other than a royal, aristocratic, or very wealthy residence could accommodate, *Lady Godiva* is a work of fine art. The tense muscularity, dramatic flared nostrils, and startled open-mouthed expression of the horse is like a bronze study by Mêne or Barye. (Fig.41.) It is juxtaposed to the serenely dispassionate gaze, and silvery-fleshed nudity of Lady Godiva, the detailed naturalistic rendering of the skin's surface variations across the body prefigures many of the characteristics of the New Sculpture. It is as if the issues of propriety in the public realm evoked by the Godiva narrative, coupled to the statue's evocation of the idealized youthful beauty and sexuality of Queen Victoria, subsumed it back into the innermost private realm of royal domesticity.

Following Charles Grant's *Iliad Salver*, whose fame rested on a silver-gilt electrotype of it being presented as a testimonial to Charles Dickens, the development of Jeannest's *History of Warwickshire* series, from *Queen Elizabeth Entering Kenilworth* to *Lady Godiva*, were of cardinal significance to the development of the art of electro-metallurgy because they were conceived and executed primarily as public relations exercises to enhance Elkington's creative reputation, and were the precursors of Morel-Ladeuil's famous narrative plate showpieces for Elkington between 1859-1888. Like Jeannest at the *Exposition universelle* of 1855, Morel-Ladeuil was initially employed specifically to make eye-catching artworks for the International of 1862. Jeannest's *History of Warwickshire* series were, in the 1850s, what Wallis unaffectedly termed "the more important productions of the eminent house,"⁴⁴⁹ and were the first masterpieces of the art of electro-metallurgy. That the forum through which Jeannest's *History of Warwickshire* series was presented was a race meeting reveals the transformational impact that 1851 had on middle-class art patronage and mass spectatorship. Although royal and aristocratic patronage prevailed, testimonials and trophies, like ornamental shields and salvers, increasingly

⁴⁴⁹ *Art-Journal*, 1st July 1857, p.227.

metamorphosed into public relations exercises. No longer just conversation pieces at exclusive society events like banquets and *conversazioni*, they became the main event at the International Exhibitions; in the galleries of the South Kensington Museum; in the new commercial galleries of international art dealers like Gambard, Goupil, Agnew, and Colnaghi, and in the opulent gallery-showrooms of retail-manufacturers, like Elkington & C^o. at Newhall Street and Regent Street.

5. Auguste Willms (1827-1899).

Charles Grant's initial term of service was for three years, and there is no indication it was renewed, which suggests he left in May 1855. From then until February 1857 it appears Jeannest was Elkington's sole artistic director, and, shortly after his unexpected death, the partners recruited another Frenchman, Auguste Adolphe Willms. There is no record of exactly when Auguste Willms first employed at Newhall Street, but it seems likely he was recruited quite quickly after Jeannest died. In a letter Willms wrote to John Thadeus Delane, editor of *The Times*, in May 1862, he stated: "...during five years I have held the position of chief artist and sole "director" of the artistic staff of the Messrs. Elkington and hope to enjoy that advantage for some time to come."⁴⁵⁰ He remained the director of Elkington's artistic staff for over forty years, until just before he died on 12th September 1899.

Born in 1826, Willms was just 29-years old when he became Elkington's chief artist. He was 13 years younger than Jeannest, and 25 years younger than Grant. It was a bold decision to recruit a young Frenchman, but G.R. Elkington was 55 years old, and Mason was 62, and by appointing Willms they were clearly planning for the company's future. Willms was closer in age to Frederick Elkington, the heir apparent to the company. When Jeannest was appointed, he had lived in Britain for almost a decade and had previously worked for Mintons. In contrast, Willms was appointed for his up-to-date knowledge of *l'orfèvrerie française*, and the vibrant new 2nd Empire style. Although he had lived and worked in Britain previously, it had been at Jean-Valentin Morel's exiled French enclave in London. Notwithstanding this, and his youthfulness, Willms was already a hugely experienced designer who had learnt modeling, engraving, and designing under a series of mentors that included many of the leading figures in French industrial arts.

⁴⁵⁰ Willms, *The Times*, 1862, p.5.

He began his career in Paris working for Henri Duponchel and Jean-Valentin Morel at *Morel et Cie*. In Morel's workshop he first encountered the designs of Jules-Pierre-Michel Diéterle, and Louis-Constant Sévin, and the sculptors Jean-Baptiste-Jules Klagmann and Jean-Jacques Feuchère. It was also in Morel's ateliers in Paris and London that Willms first encountered the revival of enamelling techniques by Louis-Hippolyte-Auguste Lefournier. Willms introduced enamelling at Elkington & C^o., and developed it into an important department in the 1860s and 70s. Morel had formerly been the foreman of Jean-Baptiste Fossin at *Maison Fossin (née Chaumet)*, and in 1848, when the dissolution of the partnership with Duponchel resulted in a lawsuit that prevented Morel from establishing a new business in Paris, Morel left for London where he set-up a workshop with Jules Fossin *filz*, financed by Edmond Joly de Bammerville. After the 1848 Revolution many of the Parisian ateliers closed, and Willms followed Morel to London, where he worked, under Sévin's direction, on the Council Medal winning designs for the Great Exhibition. Returning to Paris in 1851, Willms worked on contributions to the 1855 *Exposition universelle* by Victor Paillard, François-Désiré Froment-Meurice, and Elkington's close associate Charles Christofle. By the time of the International of 1862, Willms had recruited ten other French artists to work under him, including Léonard Morel-Ladeuil.

Besides the recruitment and management of the artistic department, amongst Willms' earliest tasks at Elkington was to design and oversee the execution of a vast electro-plated dinner service commissioned by the Duke of Brabant, later King Leopold 2nd of Belgium. The royal extravagance of the *Brabant Service* enraptured the Victorian press and public. The *Birmingham Journal* and its sister publication the *Birmingham Daily Post* both regularly reported on the progress of the *Brabant Service* as it was being manufactured. The *Post* even reported on a visit to Newhall Street by Prince Albert of Prussia, implying that he had inspected the *Brabant Service* with princely envy, before the newspaper exaggeratedly exclaimed, "Though only a very minor part of the service will be of silver, it

will cost nearly £20,000.”⁴⁵¹ It was recorded in Elkington’s ledgers in August 1859 as costing £5096.5s.⁴⁵² The public fascination with extravagant commissions for royal, noble, or just very wealthy patrons was because they could feel some affinity with the purchase of electro-plated service for the table. Whilst they might admire the artistic showpieces they saw at the International Exhibitions or in Elkington’s showrooms, they could actually purchase electro-plated flatware and hollowware, albeit on a far more modest scale than the *Brabant Service*.

Sales and commissions of table services and flatware, and domestic hollowware, like tea and coffee services, were what the company’s profits relied upon, and were Willms’s forte throughout his career. In November 1890, the *Birmingham Daily Post* reported that “Messrs. Elkington have just completed, and have now on view in their showroom in Newhall Street, an exceptionally important silver dinner-service, executed for a South American gentleman. The magnitude of the work will be understood when we say that it includes 210 large pieces, and fifty dozens of spoons and forks, specially made to harmonize with it; that it weights 7,000 ounces; and that its money value is £5,000.”⁴⁵³ Elkington undoubtedly courted such press coverage for their grand table services through what today would be termed as a public relations (PR) strategy. Grand table services were also exhibited on Elkington’s stands at the International Exhibitions. At the Vienna Weltausstellung in 1873 Elkington displayed *The Triton Dessert Service*, gilt and oxidized, *The Jardinière Dessert Service*, in frosted silver, and *The Herculaneum Dessert Service*, in silver gilt and oxidized, all designed by Willms. Public exhibitions and PR coverage for grand services, from the duc de Brabant’s in 1857 to the South American gentleman’s in 1890, helped the firm to win even larger and more lucrative corporate commissions for services and flatware for the steamship and railway companies. A

⁴⁵¹ *Birmingham Daily Post*, 1st February 1858, p.2; *Birmingham Journal*, Saturday 30th January 1858.

⁴⁵² Elkington, AAD/1979/3/3.

⁴⁵³ *Birmingham Daily Post*, 6th November 1890, p.3.

selection of articles from the *Brabant Service* were included in a vitrine that formed part of Elkington's trophy in the central nave of the International Exhibition of 1862, where it was highly visible to over six-million visitors.

6. August Willms, *Græco-Pompeian Dessert Service* of 1862.

One of the highlights of Elkington's trophy of works in precious metals at the 1862 International Exhibition was another showpiece table service designed by Willms. Considering that the *Brabant service* accommodated one hundred people, the thirteen-piece enameled silver and parcel-gilt *Græco-Pompeian Dessert Service* of 1862 was sensationally priced at £1,400. The provenance and whereabouts of the original service is currently unknown, but Elkington's made editions of various parts of the service shown in 1862, which were sold separately, and have emerged periodically at auctions. A pair of wine coolers was auctioned in November 2013, which revealed that Willms refined and simplified some of his designs for commercial reproduction. Elkington sold the wine coolers, which were electrotyped, in 1898 to Wilson, Sons & C^o. Ltd., a South American shipping company, which presented them as a testimonial to a retiring director. (Fig.42.)

The art-critics acclaimed Willms's 'Græco-Pompeian' figures and ornament in 1862. Wallis called it "...quite *unique* of its kind... an application of a high class of art to articles for the service of the table..." He praised its "Lightness, elegance, purity of form and colour, and perfect adaptation to use..." as something new in British art-metalwork: "The lines of construction were very pure, and so thoroughly well considered and adapted as to leave nothing to desire; while the details tended, as all details should do, to give increased value to the general arrangement of the parts. These details were brought out with charming effect by means of the enamel, in combination with parcel-gilding on the silver, of which the service was made; whilst the delicate chromatic effects produced by the combination of light blue, deep red, and black enamel, with the white of the silver and the rich gold colour, was something quite new in application to services of this

character.’⁴⁵⁴

In 1862, Willms’s *Græco-Pompeian Dessert Service* exemplified the eclectic, polychromatic abstractions and syntheses of the *néo-grec* style that was in vogue in the first decade of the 2nd Empire. It publicly announced the arrival in Britain of a continental style that Elkington was to popularize in the mid-1860s. Its rich decoration set gold and silver against the stark colour contrasts of stencil-style Pompeian motifs; black outlines and infilling emphasized carmine and vermilion reds and their complementary cyan-blues. The *Græco-Pompeian Dessert Service* was lavished with praise by the Victorian press in 1862 because it showed that Britain was not only attuned to French fashions, but, as with electro-bronzes, could improve French artistry with British industrial technology.

Willms’s introduction of the *néo-grec* into the art of electro-metallurgy sought to reanimate the hackneyed ornamental vocabulary of late-neoclassicism that had become so listless in the hands of the British silversmiths that followed Rundells. With Willms, the subject always seems secondary to the ornamental abstractions of the design scheme. When he did include figures, whether in the round or on bas-relief panels, they were invariably classically attired, but often seem divorced from any allegory or meaning. He habitually included panels and borders busily decorated with arabesques, repetitive patterns of engraved guilloche, and intricate fret patterns, studded with isolated Greco-Roman motifs, like masks, monsters, and medallions. Certain of these *néo-grec* traits never left Willms’s design, and bizarre syntheses and abstractions of ornamental styles were sometimes pushed to their limits; Greco-Roman motifs, like palmettes and anthemions, fused to Louis XVI and Egyptian-revival, and after 1867, East Asian motifs were introduced too. Willms’s eclecticism was a ‘borrow-the-best-of-everything’ approach to design, an unending revival of revivals that was perfectly suited to the art of electro-metallurgy.

⁴⁵⁴ Wallis, 1863, p.27.

The *néo-grec* style that Willms introduced to Elkington was also a natural progression to the electrotypes of casts of works from classical antiquity supplied by Schlick and Braun's in the late-40s and early-50s. Willms was highly influenced by Wilhelm Zahn's studies of figures and motifs from Pompeii, Herculaneum, and Stabiae.⁴⁵⁵ As an artist, classicist and archaeologist who had superintended excavations at Herculaneum and Pompeii, Zahn's three-volume pictorial study, published between 1828-1852, was regarded as the definitive sourcebook on Pompeian ornament and style. Even Owen Jones deferred to "Zahn's magnificent work"⁴⁵⁶ in his chapter on "Pompeian Ornament" in *The Grammar of Ornament*.⁴⁵⁷ Jones however was scathing of Pompeian-inspired designs, having concluded that Pompeian "...decoration is so capricious that it is beyond the range of true art, and strict criticism cannot be applied to it. It generally pleases, but, if not absolutely vulgar, it oftentimes approaches vulgarity."⁴⁵⁸ Nevertheless, Zahn's Pompeian line drawings, like Flaxman's line drawings, were easily transposed into architectural and decorative arts designs, and were widely used by the designers that shaped the neo-Pompeian style of the 1850s and 1860s. The ornamental motifs designs for the *Græco-Pompeian Dessert Service* could have been directly transposed from Zahn or Jones plates, and the classically attired figures are particularly resonant of Zahn. (Fig.43.)

As archaeological excavations progressed at Herculaneum and Pompeii, and new studies were published, and more and more tourists visited the site, the neo-Pompeian style was revived and revised repeatedly throughout the 19th-century. The Pompeian influence had been present in British decorative schemes since the Adam brothers, but it was John Goldicutt in 1825 that encouraged a vogue for incorporating at least one Pompeian showroom in a house's decorative scheme as a display of wealth and taste that

⁴⁵⁵ Zahn, Volume 1, 1828-29; Volume 2, 1842-44; Volume 3, 1852-59.

⁴⁵⁶ Jones, 1856/2001, p. 115.

⁴⁵⁷ Jones, 1856/2001, p.115-123.

⁴⁵⁸ Jones, 1856/2001, p. 118.

endured for decades.⁴⁵⁹ When the vogue finally expired in Europe, Harriet Spofford imported Goldicutt's neo-Pompeian affectations to America in 1878.⁴⁶⁰ Prince Albert decorated a room of the Garden Pavillion at Buckingham Place in the style in 1844. Such de rigueur decoration was perhaps the cause of Jones's accusation of vulgarity. When the Crystal Palace relocated to Sydenham in 1854, the Pompeian Court proved enduringly popular, broadening the demographic appeal of Pompeian style in the late-50s and early-60s. Howard and Snodin have shown how Castellani created a pan-European craze for 'wearing archaeology,' which was lampooned by *Punch* in July 1859.⁴⁶¹

Although Willms's design of the *Græco-Pompeian Dessert Service*, especially his colourful interplay of materials, was proclaimed as a fresh approach to art-metalwork in Wallis's review of the 1862 Exhibition, many of its elements appear to have been directly influenced by Diéterle's designs for the two *Service pompéien* of 1856 and 1862, commissioned by Prince Jérôme Napoléon, the cousin of Napoléon III. Prince Napoléon commissioned it for the *Maison pompéienne*, which he constructed on Avenue Montaigne for his mistress, the great tragic actress Rachel. The repeated motifs of the highly stylised parcel-gilt palmettes on a deep red enamel ground, edged with black, could have been lifted straight from Jones's *Grammar* or Zahn's sourcebook, but they are also strongly resonant of the ornamental borders of Diéterle's 1856 ceramic service, which were drawn from those same sourcebooks. When it was shown in 1862, The *Græco-Pompeian Dessert Service* designed by Wülms and executed by Elkington appears like a riposte to the *Service à dessert pompéien* designed by Diéterle and executed by Christofle that same year.

Willms's *Græco-Pompeian Dessert Service* of 1862 typifies the eclectic approach to design that he brought to his role as chief artist at Elkington. Whilst the stylistic influence of Zahn's line-drawings and Diéterle's *pompéien* designs were a direct influence on

⁴⁵⁹ Goldicutt, 1825.

⁴⁶⁰ Spofford, 1878.

⁴⁶¹ Snodin and Howard, 1996, p.120-121.

Willms's early designs for Elkington, it was Constant Sévin's radical eclecticism that most shaped Willms's creative and managerial approach to overseeing the designs of such a large art and design team. It was Sévin's ability to fuse together all manner of styles and materials by drawing on his extensive knowledge of the history of ornament, and his mastery of a huge range of materials and techniques, which was the most profound and enduring influence on Willms' career. In 1855, Sévin became chief artist at Barbédienne's bronze foundry in Paris. Willms was appointed chief artist at Elkington & C^o. two years later. Of all his erstwhile mentors, Willms most emulated Sévin's stylistically diverse designs, his experimental combinations of materials, and the inspirational, bravura-style of leadership he used to mesh together a large multi-disciplinary team of talented artists, designers, and technicians.

7. The Revival of Enamelling in early-19th-century France.

Anne Dion-Tenenbaum has written of how the advent of the July Monarchy in 1830 instigated a stylistic and technical revolution in French decorative arts. She has described how a new generation of goldsmiths, notably Jean-Charles Cahier, Charles Wagner, and his successor Frédéric-Jules Rudolphi, and François-Désiré Froment-Meurice, and the designers Claude-Aimé Chenavard, Michel-Joseph-Napoléon Lienard, Jean-Baptiste-Jules Klagmann, and Jean-Jacques Feuchère, began to look for fresh sources of inspiration in the Middle Ages and Renaissance to escape the strictures of late-neoclassicism.⁴⁶² Dion-Tenenbaum has shown how, by eschewing bland imitation, Wagner and Froment-Meurice's application of the ideals of Romantic Historicism to ornamental art-metalwork provided an enduring stimulus for innovative research into old materials, tools, and techniques that had been abandoned since the late Renaissance, which included various methods of enamelling, repoussé, damascene, and niello work. All of these techniques were introduced into Elkington & C^o.s artistic repertoire under Willms's creative direction.

The revival of enamelling in the ateliers of Wagner and Froment-Meurice in the 1830s, and at the manufacture de Sèvres in the 1840s, under the inspired directorship of the chemist Alexandre Brongniart, encouraged a whole generation of enamellers to embrace the art. Dion-Tenenbaum specifically identifies Jacob Meyer-Heine, who worked for both Wagner and Froment-Meurice before being recruited by Brongniart as chief enameller at Sèvres; Louis-Joseph Grisée, and Louis-Hippolyte-Auguste Lefournier, who worked for both Wagner and Morel. Daniel Alcouffe has also shown how the technical revival and artistic development of enamelling was continued and developed during the 2nd Empire and his research has identified a second generation of *orfèvres-émailleurs* that

⁴⁶² Dion-Tenenbaum, 2005, p. 145-164.

included: Claudius Popelin, Alfred-Thomson Gobert, Charles Lepec, Achille Legost, Alfred Meyer, Théophile Soyer, and Antoine Tard.⁴⁶³ Alongside these enamellers, I would also mention the jeweler Alexis Falize's enamelwork collaborations with Antoine Tard. Falize's cloisonné lockets depicting birds, insects, and flowers were influenced by Japanese prints and exemplify the spirit of French Japonisme that emerged c.1867. This second generation of enamellers had an inspirational impact on Frederick Elkington and Auguste Willms at the *Exposition universelle*.⁴⁶⁴

I have mentioned the names of these French enamellers, because it is admirable that French art-historians from Émile Molinier⁴⁶⁵ and Lucien Falize (the son of Alexis)⁴⁶⁶ in the 1890s, to Alcouffe, Dion-Tenenbaum, and Pierre Sanchez⁴⁶⁷ more recently have made concerted efforts to research the careers and œuvres of these talented enamelworkers, whereas, apart from Willms, the names of the technical and creative staff at Newhall Street who were responsible for creating Elkington's enamelwork are unknown. Pierre Sanchez's monumental 3-volume dictionary has attempted to account for all the French enamellers that contributed to the universal exhibitions. Whilst British scholars, from James L. Bowes⁴⁶⁸ to Sir Harry Garner,⁴⁶⁹ and, more recently, Gregory Irving,⁴⁷⁰ have all made sterling contributions to the history of Chinese and Japanese enamels and their reception in Britain, and Erika Speel has collated an extensive and well-researched reference book on the evolution of techniques,⁴⁷¹ there has been no substantial research prior to my study on Elkington's major contribution to 19th-century enamelwork.

Like the development of the art of electro-metallurgy, the 19th-century revival of enamelling applied modern science, technology, and industrial process to traditional arts.

⁴⁶³ Alcouffe, 1978, p.40-47.

⁴⁶⁴ Alcouffe, 1980, p.102-121.

⁴⁶⁵ Molinier, 1891.

⁴⁶⁶ Falize, 1893, pp.418-435.

⁴⁶⁷ Sanchez, 2005.

⁴⁶⁸ Bowes, 1884 and 1895.

⁴⁶⁹ Garner, 1962.

⁴⁷⁰ Irvine, 2011.

⁴⁷¹ Speel, 1998.

Dion-Tenenbaum mentions how Froment-Meurice's desire to re-introduce polychromy into art-metalwork led him to study the chemistry of dyes, and 'simultaneous contrast' of colours proposed by Michel Eugène Chevreul, the chief chemist and director of dyes at the Manufacture des Gobelins. Chevreul's theory of colour interaction was described in *De la loi du contraste simultané des couleurs* (1839),⁴⁷² and was translated into English in 1854, which greatly inspired the introduction of polychromy into mid-century French and Anglo-French art-metalwork.⁴⁷³

Waring's beautiful chromo-lithographed photographs of the industrial art and sculpture at the 1862 Exhibition confirms that polychromatic designs were in vogue and displayed everywhere in the form of fabrics and wallpapers, mosaics and marquetry, porcelain and majolica, stained glass and enameled-metalwork. It was also reflected in J. G. Crace's variegated and subdivided colour scheme for the exhibition building's interior decoration. "Particularly in the upper parts of the nave and transepts he used rich colours to balance the brightness of the exhibits below, which were given a much quieter background."⁴⁷⁴ One of Waring's chromo-lithographic plates shows Willms's *Græco-Pompeian Dessert Service*, which typifies Elkington's initial use of champlevé enamel to introduce colour into the art of electro-metallurgy. Wallis particularly highlighted that the interaction of colours was an exciting new concern to the art of electro-metallurgy in his review of 1862. His use of *italics* showed that he had read Chevreul when he haughtily complained about the backdrop against which Willms's polychrome enamelwork was initially offset: "We took exception to the colour, a grey or pearl-coloured violet, upon which the service was first displayed. No doubt any violent contrast of colour would have seriously affected the appearance of the enamel, but there are such things in chromatics as *contrasts in harmony*, and such should be aimed at in arrangements of this kind. A properly

⁴⁷² Chevreul, 1839.

⁴⁷³ Chevreul, 1854.

⁴⁷⁴ *Survey of London*: "The Exhibition Building of 1862," 1975, pp.137-147.

selected green did wonders for the *ensemble* in a later and more maturely considered grouping and fitting up.”⁴⁷⁵ Waring’s chromolithograph shows it on the green.⁴⁷⁶ (Fig.44.)

Waring also commended the enamelwork in various other smaller works that Elkington displayed in 1862, which included candelabra, tazze, and vases, and he urged “...still greater development of one of the most beautiful and effective adjuncts of the goldsmith’s art.”⁴⁷⁷ *An Enameled Vase – Pompeian Style* was depicted in Cassell’s Illustrated Exhibitor of 1862 that typifies Willm’s early use of enamel. The hackneyed neoclassical form of a two-handled vase is greatly enlivened with opaquely coloured neo-Pompeian motifs, and it is studded with small translucent enamel circles that imitate the faceted designs of lapidary work. It is a frugal simulacrum of the high-quality inlays Willms had helped prepare for the Great Exhibition in Jean Valentin Morel’s New Burlington Street atelier.

Walton has shown that it was the domestic demands of bourgeoisie taste that shaped the quality of design and workmanship of French luxury metalware, which won all the plaudits and prizes in 1851.⁴⁷⁸ Morel’s multi-medium, enameled *objets de vertu* of 1851 were pitched exclusively at wealthy patrons, but the British market for such outré design was small compared to that of France in the early-1850s, and both aristocratic and bourgeois tastes in silver were too constrained in Britain to keep Morel in business, forcing his return to France. G.M. Young has written that “...in the fifties England was becoming keenly aware of the narrowness and meagerness of her middle-class tradition.”⁴⁷⁹ In 1851, Elkington applied the art of electro-metallurgy to every popular sentimental style, like ‘Crown Imperial,’ or the aptly named ‘Convolvulus’ with its spirally arranged leaves and trumpet-shaped flowers enwreathing everything like the problematic

⁴⁷⁵ Wallis, 1863, p.28.

⁴⁷⁶ Waring, 1863. Plate 211.

⁴⁷⁷ *Ibid.*

⁴⁷⁸ Walton, 1992.

⁴⁷⁹ Young, 1936/1969, pp.87-88.

bindweed it actually is, and calling anything of an indistinct style 'Elizabethan.' In 1862, under Willms, rather than pandering to British market demands, Elkington & C^o. boldly challenged conservative national tastes, with daringly eclectic, polychromatic designs that could have been made in Paris.

8. Elkington's Champlevé and Cloisonné Enamels.

Whilst the 19th-century enamels of France and Japan are fairly well documented, the historiography of Elkington's enamels is almost non-existent. All of Elkington's major exhibitions of cloisonné enamels occurred abroad, at the International Exhibitions of Vienna 1873, Philadelphia 1876, and Paris 1878. Consequently, Elkington's enamels were far better known in Europe and America than in Britain. The visitors' book for the International Exhibitions at Vienna in 1873, Paris in 1878, and most especially Philadelphia in 1876 reveals how popular they were with European and American art patrons. The only significant exhibition of Elkington's cloisonné in Britain was in April 1877. After the Philadelphia Centennial, Elkington exhibited the artworks they had taken to America at their Church Street showroom in Liverpool. *The Liverpool Mercury* wrote of their cloisonné enamels, "...in the execution of works of a Chinese and Japanese character, Messrs. Elkington stand unrivalled. The entire stock of enamels was sold at the Philadelphia exhibition; but as the works are now being reproduced for the forthcoming exhibition at Paris [1878], the visitors will have an opportunity of seeing the variety of this department of art decoration."⁴⁸⁰

The only known image of the enamelling workshop at Newhall Street appeared in 1874, at the height of the fashion for Japanese art in Britain. It was part of the suite of engravings in *The Graphic* depicting the visit of the Prince and Princess of Wales to Newall Street.⁴⁸¹ (Fig.45.) It shows that enamelling was a very small operation compared to other departments in the factory. Compared to images of the electro-plating operations it appears artisanal rather than industrial, and not unlike Japanese cloisonné workshops.

Both champlevé and cloisonné enamelling techniques begin with the basic metal vessel or dish to be ornamented. This substrate is invariably copper or copper-alloy. A

⁴⁸⁰ *Liverpool Mercury*, 2nd April 1877, p.6.

⁴⁸¹ *The Graphic*, 1874, p.13.

line drawing of the decorative design to be enameled is then gently etched onto it. In *champlevé* the areas where enamel is to be applied are engraved with burins to make shallow recessions areas in the metal substrate called ‘fields’. The French termed the technique *champ-levé*, meaning ‘raised-field,’ because when enamel paste was added and fired it was raised in the engraved fields.

In *cloisonné*, thin strips of metal, usually gold, sometimes copper, brass, or silver, approximately 1-2mm wide and 2-3mm high, are bent along the lines of the design and then attached firmly to the metal substrate. In Japanese *cloisonné* the strips were first glued with pieces of solder along the lines of the design, before the object was thinly coated with flux. Then the object was fired at a low temperature to fuse the strips to the substrate.⁴⁸² To expedite this process, Elkington’s strips were probably attached using autogenous soldering. Once attached, the strips create partitioned areas into which enamel paste can be spread to form the ‘cloisons,’ or panels, hence the French term *cloisonné*, which means ‘panelled.’

In both *champlevé* and *cloisonné*, all the fields or panels are filled with different coloured enamels mixed to a paste-like consistency, which are positioned into the decorative design using special spatulas. The object is then fired in a muffle-kiln. Depending on how soft or hard the enamel pastes are, the enamel fuses onto the metal at between 700°C to 820°C. European muffle-kilns were not dissimilar to the Japanese charcoal-fueled clay kilns (*nishiki-gama*).⁴⁸³ To ensure the enamel fields or panels are the required thickness and level with the top of the metal strips, more enamel is added and fired, repeatedly, until all the fields or panels are flush with the metalwork design. After it has cooled and hardened, the surface is gently abraded and polished until the raised-fields or panels are in unity with the enclosing metalwork.

Elkington’s objective was to use the art of electro-metallurgy to expedite the

⁴⁸² Irvine, “Japanese Cloisonné Manufacture.”

⁴⁸³ Coben and Ferster. 1982.

laborious stages of the process in order to industrialize the technical artistry of *champlevé* and *cloisonné*, as they had gilding, plating, and bronze casting. The chief advantage they hoped to gain was to use electrotyping to reproduce the metal substrates once a design had been engraved or soldered. The precision of Elkington's elastic-moulds and electrotyping meant that once the metal substrate was at the stage where the enamel could be added, a mould could be taken and a copper type pattern made, which would allow for any number of subsequent editions to be replicated. Electrotyping facsimile editions was especially useful in the manufacture of pairs of Chinese and Japanese style vases, which were popular. Alternatively, the colour scheme could be varied. It is perhaps a moot point, but any electrotype reproductions made from an original *cloisonné* substrate were, strictly speaking, *champlevé*.

Frederick Elkington's enthusiasm for Japanese enamels and metalwork probably began after seeing Rutherford Alcock's display of 623 Japanese artifacts at the International of 1862.⁴⁸⁴ In December 1862, after the exhibition closed, Christie's auctioned Alcock's collection. The sale was reported in *The Times*,⁴⁸⁵ and stimulated the market for Japanese style in Britain, prompting a few wealthy patrons to start collecting *cloisonné*. Quite when Frederick Elkington began collecting Chinese and Japanese *cloisonné* is unknown, and the earliest documented reference I've found is April 1871, when the *Birmingham Daily Post* reported the gratitude of the new Corporation Free Art Gallery to "...Mr. Frederick Elkington for the loan of a most important collection of Japanese and Chinese enamels, of an extent and quality unsurpassed by any collection in the kingdom."⁴⁸⁶

In December that year, Frederick also loaned other items of Japanese metalwork; including bronze vessels decorated with various specialized techniques of inlaying termed

⁴⁸⁴ Alcock, 1862.

⁴⁸⁵ *The Times*, 5th December 1862 p.5.

⁴⁸⁶ *Birmingham Daily Post*, 4th April 1871.

bon zogan, similar to European damascene work, and personal accessories, like cloisonné belt buckles.⁴⁸⁷ “Of a more elaborate and ornate character are some examples of Japanese objects of personal decoration, as clasps for belts, buckles, and guard chains, and others in which the minuteness of the workmanship is rivaled only by the fidelity and painstaking care with which the objects, animate and inanimate, are copied. These are rendered more by skillful inlays of various metals – as gold, silver, copper, – bronzing, and oxydising [sic.], in so varied a manner as to excite wonder and admiration at the skill and industry of a people, who, so far as we know, are still ignorant of electro-metallurgy.” That Frederick collected ‘examples of Japanese objects of personal decoration,’ as well as cloisonné vases, is interesting because, aside from electro-plated flatware, Elkington’s profits relied on mass-manufactured articles like electro-brassed belt-buckles. On 26th October 1872, G.A. Sala⁴⁸⁸ of the *Daily Telegraph* was guided on a tour of Newhall Street by “the kindly intelligence of M. Willms,” where he “...saw great bunches of metal buckles receiving a brazen bath... even such apparently trifling articles as electro-brassed buckles are not to be despised, and may be made to yield a very fair margin of profit.”⁴⁸⁹ Nothing could evoke Elkington & C^o.’s roots at a Birmingham gilt-toymaker better than Sala’s image of “...great bunches of metal buckles receiving a brazen bath...”

Japan was not “ignorant of electro-metallurgy.” A decade earlier, on Friday 30th May 1862, a month after the International Exhibition opened in London, The Japanese Embassy to Europe visited Birmingham, and a tour of Newhall Street was included in their itinerary, which was reported by the *Birmingham Daily Post*.⁴⁹⁰ Takenouchi Yasunori, the head of the mission, two other ambassadors, and John Macdonald, the Supernumerary Assistant from the British Legation in Japan, who had accompanied the

⁴⁸⁷ *Birmingham Daily Post*, 15th December 1871.

⁴⁸⁸ George Augustus Henry Sala (1828-1895).

⁴⁸⁹ *Universal Exhibition Vienna 1873*.

⁴⁹⁰ *Birmingham Daily Post*, 30th May 1862.

mission on their tour of Europe, all signed Elkington's showroom visitors' book.⁴⁹¹

(Fig.46.) At a time when access to Japan was limited to just a few foreign merchants, the visit probably provided Elkington & C^o. with introductions that helped Frederick develop his collection. On Friday 8th June 1866, four years after the Japanese ambassadors, the *Birmingham Daily Post* reported the visit of the Chinese Commissioner and his suite to Newhall Street, where Hyla Elkington and Auguste Willms greeted them.⁴⁹² The Chinese mission also signed the visitors' book.⁴⁹³ (Fig.47.)

After Alcock's exhibition of 1862, the fashion for Japanese art developed from the avant-garde whimsy of a few British aesthetes and collectors until by the time of the *Exposition universelle* of 1867 the South Kensington Museum was acquiring its first Japanese cloisonné enamels. The extent to which the popularity for all things Japanese had reached in Britain by the early 1870s is revealed in an article titled "The Japanese Fashion," which first appeared in *The Art-Journal*, but was subsequently syndicated in newspapers around Britain, including *The Bradford Observer*. The article begins: "Fashion has declared for Japanese art, and our French friends who are always her readiest worshippers, have warmly taken to it." It concludes by proudly claiming that two Britishmen had set the trend, "...there are some gentlemen who have led the fashion, and before the crowd followed, have got together collections of most precious examples. Foremost amongst those who have been so fortunate are Mr. James L. Bowes, of Liverpool, and Mr. Frederick Elkington, of Birmingham, whose collections are unrivalled in Europe, and doubtless also in Japan."⁴⁹⁴

Elkington's catalogue for 1873⁴⁹⁵ shows that European champlevé and East Asian cloisonné designs were developed in tandem after 1867. (Fig.48.) The champlevé designs

⁴⁹¹ Elkington & C^o., *Visitors' Book: 1860-1867*, p.31 reverse.

⁴⁹² *Birmingham Daily Post*, 9th June 1866, p.3.

⁴⁹³ Elkington & C^o., *Visitors' Book: 1860-1867*, p.113.

⁴⁹⁴ *Bradford Observer*, 31st January 1874.

⁴⁹⁵ *Universal Exhibition Vienna 1873*.

borrowed forms from Medieval and Renaissance Europe and the Near East, whilst the cloisonné designs took the form of ancient Chinese bronze dishes and vessels, especially vases. Cao Zhao first documented cloisonné in China in 1388.⁴⁹⁶ Its genre characteristics, and forms, techniques, and designs that were adopted in Japan and Europe in the 19th-century were largely those developed in China during the 15th-century when enamellers borrowed the forms of ancient bronze dishes and vessels, and decorated them with subjects and motifs borrowed from contemporary porcelain designs.

In the exhibition catalogue of 1873, the large circular dish at the back of the cloisonné display depicts Saint George slaying a dragon, a subject that appears utterly incongruous amidst the birds, flowers, and insects so redolent of Chinese and Japanese enamels. Positioned at the top of the display, the medieval knight subduing the dragon seems to symbolize both Elkington's assertion of mastery over an ancient East Asian art form, and British imperial ambitions in China. The ornamental border depicts the alternating foliage and flowers of an English rose, but it is stylized on a black ground like a Greek or Etruscan vase. The *St. George cloisonné dish* was exhibited again at the 1876 Centennial Exposition at Philadelphia, where, on 16th October, the Elkington's visitors' book records that it was acquired by the American banker and art-collector William Wilson Corcoran for The Corcoran Gallery of Art in Washington, which had opened in 1874.⁴⁹⁷ Corcoran typifies the wealthy American patrons that purchased all of Elkington's cloisonné collection in Philadelphia, almost all of whom were industrialists and financiers who had made fortunes from the modernization of the country's economy. Another buyer of cloisonné was William Weightman, the chemical manufacturer. On 17th October he paid \$550 for three cloisonné vases.⁴⁹⁸

⁴⁹⁶ Cao Zhao and Sir Percival David, 1388/1971.

⁴⁹⁷ Elkington & Co., *Visitors' Book: 1855-1878*, p.22 reverse.

⁴⁹⁸ Elkington & Co., *Visitors' Book, 1855-1878*, p.23.

The *St. George cloisonné dish* appeared in a chromolithograph in *The Art-Journal* depicting Elkington's cloisonné at the 1876 Centennial.⁴⁹⁹ (Fig.49.) It was pictured alongside a large Chinese-style trumpet-shaped vase depicting birds, flowers, and insects. The vase was part of a non-identical pair. In 2012, an edition of the pair emerged from a house in Stockport and was sold at an auction in Macclesfield for £86,000 (plus 18% buyers premium). The vases appeared in a photograph of Elkington's showroom in St. Ann's Square, Manchester, which was published in the company's sales catalogue of 1904. (Fig.50.) The gilt-copper pierced mounts add an authentic Chinese appearance to the vase, but the subject material is typical of Willms's eclectic designs: "Measuring an impressive 2ft 3in (71cm) high, one was decorated with two flamingos, two dragonflies and an exotic bird among irises and water lilies, the other with a hawk and garden birds among various flowering branches with a wetland landscape beyond. The border decoration and the cast and pierced gilt-bronze mounts similarly combined Oriental and European motifs."⁵⁰⁰ The most prominent flower on the vase shown in the 1876 chromolithograph is the yellow iris, *Iris pseudacorus*, common in British wetlands, but not native to China nor Japan. Many of Willms's designs are an allusive syntheses of Chinese, Japanese, and European motifs, rather than explicit imitations, in which East Asian motifs are often represented by European substitutes.

Tracing the evolution of Willms's enamelwork designs for Elkington & Co. is a complicated and fascinating exercise. Willms was uniquely advantaged in being able to draw upon Frederick Elkington's personal collection of Chinese and Japanese cloisonné enamels, which contained examples of both Chinese and Japanese cloisonné enamels. However, Willms's designs were never as directly inspired by Japanese cloisonné and prints as his peers in France, especially Christofle. The subjects and motifs of older Chinese cloisonné designs, and the Chinese tradition of bird-and-flower painting, which

⁴⁹⁹ *The Art-Journal*, 1876.

⁵⁰⁰ Arkel, 2013.

includes fish and insects, exerted a greater influence on Willms's designs.

A beautiful pair of vases in the V&A depicts chrysanthemum flowers and foliage with butterflies. (Fig.51.) The chrysanthemum is an important symbol in both Chinese and Japanese art, representing lamentation, longevity, and rejuvenation. In Japan, the chrysanthemum is a symbol of the Emperor and Imperial family, and is the Imperial Seal of Japan. As well as Frederick Elkington's collection, another local source for Willms's designs was to be found at the Birmingham Botanical Gardens, which were established in 1832, and from 1868 was curated by the noted horticulturist William Bradbury Latham, who had worked at the Jardin des Plantes in Paris. In the 19th-century, the widespread cultivation of chrysanthemums in Europe began when nurseries started growing varieties developed by hybridization. The earliest chrysanthemums, cultivated in China from the 15th-century B.C., and introduced to Japan in the 8th-century A.D., were a small daisy-like flower that had little resemblance to the European hybrids depicted on the Elkington vase in the V&A. Willms's cloisonné are perfect examples of artistic simulacrum. They are intricately designed, exquisitely crafted, and exotic looking, perfectly convincing impressions of the real thing. But they are allusive hybridizations of an imagined real rather than strict pastiche. They seem to be Chinese or Japanese, but the eclectic syntheses of stylistic elements, subjects and motifs are submerged and abstracted to a point that the cultural origins and traditional symbolism from which they were seemingly appropriated has become abstruse and arcane to the point of being immaterial. They are "...models of a real without origin or reality."⁵⁰¹

Elkington's visitors' book for the Philadelphia Centennial of 1876 reveals how popular their enamels were with wealthy American art-buyers of The Gilded Age.⁵⁰² It also reveals how expensive they were, costing between \$220 for a small pair of enameled vases, and around \$300 for the larger vases. A typical buyer was William Weightmann, the

⁵⁰¹ Baudrillard, 1994, p.1.

⁵⁰² Twain, 1873.

manufacturing chemist, who made his fortune by introducing quinine to America, which was used in the treatment of malaria, arthritis, and cramps. On 17th October 1876, Weightman purchased a pale green cloisonné vase with birds and flowers for \$300, and a pair of enamelled vases for \$220.⁵⁰³ It is notable too how many purchasers of Elkington's cloisonné vases in Philadelphia were women, like 'Mrs. Arthur A. Burt' (née Annie Fleming), who on 30th June 1876 paid \$225 on account for cloisonné vases, which eventually cost her \$550.⁵⁰⁴ The international appeal of Elkington's cloisonné is further evidenced in the visitors' book at Vienna 1873 and Paris in 1878, but the transatlantic sales prefigure how American demand for European art became an important catalyst in the globalization of fin de siècle markets for art and personal luxury goods.

⁵⁰³ Elkington & Co., *Visitors' Book: 1855-1878*, p.23.

⁵⁰⁴ Elkington & Co., *Visitors' Book: 1855-1878*, p.15 reverse.

9. Léonard Morel-Ladeuil (1820-1888).

Although Willms was ‘chief artist’ for forty years, the Frenchman whose name became most synonymous with Elkington & C^o., and who did more than any other figure in the company’s history to shape its lasting creative reputation, was Léonard Morel-Ladeuil. Willms was the conductor, but Morel-Ladeuil was the prodigiously talented soloist that the press fêted, and the public came to see. A Memorandum of Agreement confirms that Elkington & C^o. employed him on 1st July 1859.⁵⁰⁵ Frederick Elkington’s recruitment of Léonard Morel-Ladeuil in July 1859 to work alongside Willms as a ‘Designer and Chaser’ in repoussé appears to be a calculated move to emulate the working relationship that Constant Sévin developed with the great chaser Désiré Attarge at Barbédienne. Morel-Ladeuil’s initial term of service was five years at an annual salary of £400 per-annum, but the acclaim that followed his contributions to the International of 1862 persuaded Frederick Elkington to increase his salary to £600 per-annum when the contract was renewed on 1st July 1864.

From 1834, he had served an apprenticeship in the Parisian bronze foundry of his paternal cousin, before learning repoussé in the atelier of Antoine Vechte, whilst also studying drawing and composition with Jean-Jacques Feuchère. Writing in 1867, Dallas observed, “Vechte has two pupils who are worthy of the master. One of these is M. Fannièrre,⁵⁰⁶ who exhibits works on his own account in France of exceeding merit. The other is M. Morel-Ladeuil...”⁵⁰⁷ François-Joseph-Louis Fannièrre, like Vechte, sculpted other people’s designs, most notably, from c.1862, those of his elder brother, François-Auguste. However, Feuchère encouraged Morel-Ladeuil to design his own compositions. It was an indication of his talent and promise that he was admitted to study in the ateliers

⁵⁰⁵ Elkington, AAD/179/3/1/8.

⁵⁰⁶ François-Joseph-Louis Fannièrre (1820-1897) learnt repoussé in Antoine Vechte’s studio before establishing a partnership, *Fannièrre Frères*, with his older brother François-Auguste Fannièrre (1818-1900).

⁵⁰⁷ Dallas, *The Times*, 1867, p.8.

of both Vechte and Feuchère. It was a remarkable dual education, studying repoussé under the enigmatic Vechte, who almost single-handedly revived the technique, and design and composition under Feuchère, who Henri Bouilhet and others have claimed was the most profound influence on *l'orfèvrerie française*.⁵⁰⁸

The success of Antoine Vechte's repoussé showpieces for Hunt & Roskell at the exhibitions of 1851 and 1855 encouraged Elkington to employ his pupil in much the same vein, with the specific remit of designing and sculpting original repoussé showpieces for the International of 1862. Beginning in 1859, with a wondrously elegant pair of silver repoussé tazzas, representing *Le crépuscule* (Twilight) and *L'aurore* (Dawn) as simple figurative allegories, (Fig.52.) Morel-Ladeuil stayed in Britain for 25 years, and was employed by Elkington until he died in 1888. His contribution to their œuvre was a series of thirty-three remarkable showpieces in repoussé silver, often with damascened steel, almost all of which were exhibited at Universal Expositions between 1862-1878. The artist's son, Léon Morel, enumerated all of his artworks in a *Catalogue Complet* appended to his biographical monograph of 1904, which remains the only study of the artist's life and work to date.⁵⁰⁹ Two years after he died, a short essay by Lewis F. Day, "The Work of Morel-Ladeuil," appeared in Cassell's *Magazine of Art* in 1990.⁵¹⁰ More recently, Aurélia Léchelon has provided academic research into his early life and training in Clermont-Ferrand and Paris, c.1820-1859, using the archives, drawings, and models conserved at the Musée d'Art Roger Quillot de Clermont-Ferrand.⁵¹¹

Léchelon's 2011 essay, which is subtitled 'l'orfèvre oublié,' reveals that Morel-Ladeuil has been equally neglected by French and British historiography. As French artists working in Britain, Jeannest, Willms, and Morel-Ladeuil have been seen as marginal to the national interest/*la raison d'État* of both countries' art-historians. Furthermore, they

⁵⁰⁸ Bouilhet, 1908, p.186.

⁵⁰⁹ Morel, 1904, pp.39-47.

⁵¹⁰ Day, 1990, pp.271-275.

⁵¹¹ Aurélia Léchelon, 2007 and 2011.

worked as industrial artists, precious metalworkers employed by the patentees of electro-plate. Yet it was precisely the synthesis of French artistry and artisanal practice with British industrial processes that made the art of electro-metallurgy into such a globally popular art form.

Like Willms, Morel-Ladeuil was employed to bring *l'orfèvrerie française* to Newhall Street, and this was evident in his earliest works for Elkington & Co. Writing in 1867, to apprise his French readers of Morel-Ladeuil's work in Britain, Mesnard chose to highlight only his first productions for Elkington, the beautiful tazzas he had made eight years earlier, *Le crépuscule* (Twilight) and *L'aurore* (Dawn): "Like Klagmann, M. Morel-Ladeuil works for industry, and like Vechte for British industry. It is M. Elkington that executes his models. Here we illustrate two repoussé works by him: *Day* and *Night*. Nothing is happier in conception, better imagined and deduced, nor more logical."⁵¹² The allegory of the veils of darkness and light descending, with putti scattering night's shadows or the rosy-petals of dawn shows Morel-Ladeuil still enthralled to the French poetic sensibility of Renaissance-infused designs that Feuchère made for Vechte.

Elkington's sensational showpiece at the International of 1862 was Morel-Ladeuil's *Table of Dreams*, which was acclaimed in both the French and British press. Ostensibly it was reprise of Schlick and Stanton's *Temperantia Gueridon* of 1851, but rather than being based around an electrotype 'composed from the antique' it was an entirely original work. It signalled that Elkington were no longer mere copyists, and also the influenced of *l'orfèvrerie française*. Morel-Ladeuil's design for the *Table of Dreams* appears to have been originally inspired by the cast and chased silver *Seau à rafraîchir* made by Morel et Duponchel in 1838 after Diéterle and Klagmann. A cylindrical classical frieze of Bacchanalian revellers who allegorically represent the dreams and ambitions of the sleeping figures of a poet, a philosopher, a soldier, and an everyman, who are sleeping

⁵¹² Mesnard, 1867, p.128.

beneath them, resting from their respective vocational labours.⁵¹³ Klagmann like Morel-Ladeuil was a pupil of Feuchère, and Morel-Ladeuil must have seen it exhibited in 1844 at *l'Exposition des produits de l'industrie*. The sculptor Henri de Triqueti used a similar design for his *Vase des songes* in patinated bronze and ivory, which was exhibited in London in 1860. The *Table of Dreams* was purchased for £1500 by public subscription as a gift from the city of Birmingham to the Prince of Wales and Princess Alexandra to celebrate their marriage on 10th March 1863.

Morel-Ladeuil's small catalogued œuvre of thirty-three artworks belies both how painstakingly laborious the repoussé technique is, and the uncompromising level of excellence he sustained in sculpting a series of magna opera that included: the *Modern Inventions Vase* and *Table of Dreams* of 1862; *The Milton Shield* of 1867; the spectacular *Helicon Vase* of 1873, a large repoussé silver and steel centrepiece, damascened in gold, illustrative of music and poetry, now in the Royal Collection; *Pompeian Lady at her Toilette* of 1876; *The Bunyan Shield* of 1878, and the late trilogy of *Shakespeare's Comedies* of the early 1880s. However, many of Morel-Ladeuil's artworks, particularly the repoussé bas-relief shields, plaques, and tazzas were reproduced as electrotypes, which constitute some of the most important series of facsimile editions of sculptures ever made. By far the most famous of these was *The Milton Shield*, and I would like to conclude with a study of this artwork, which I believe is both Morel-Ladeuil and Elkington & C^o.'s greatest masterpiece, and the complete epitome of the art of electro-metallurgy.

⁵¹³ Dion-Tenenbaum, 2011, p.190-193.

10. *The Milton Shield* at the *Exposition Universelle* in Paris, 1867.

Frederick Elkington commissioned Morel-Ladeuil to design and sculpt *The Milton Shield* specifically to be exhibited at the *Exposition Universelle* at Paris in 1867. (Fig.53.) Its subject was chosen in celebration the 200th anniversary of the publication of John Milton's poetic masterpiece, *Paradise Lost*. *The Milton Shield* marked the culmination of an important genre of Miltonic imagery in the visual arts, especially illustrations and visual critical interpretations of scenes from *Paradise Lost*, which lasted from the 17th to the 19th-century, and both Frederick Elkington and Morel-Ladeuil were aware of the major precursory works depicting *Paradise Lost*, and by marking the 200th anniversary of its publication were consciously adding to the genre.

It took Morel-Ladeuil over a year, from late 1865 to early 1867, to sculpt *The Milton Shield*. In a review of the Paris Exposition, *The Art-Journal* wrote alongside an engraving of it, "There is a general impression that the work here engraved is the best work exhibited during the memorable year of 1867."⁵¹⁴ On 4th September 1867, in his review of the Paris Exposition, E.S. Dallas wrote in *The Times*, "It is one of the best things in the exhibition of 1867, and has always a crowd of admirers around it. The work in it is of the finest quality, and the ideas which are expressed in that work are not only full of poetry, but sometimes also reach even to the sublime."⁵¹⁵

Immediately after the *Exposition Universelle*, Elkington & C^o. organized a touring exhibition of the artworks they had shown in Paris at their showrooms in Britain. In January 1868 the exhibition visited the Church Street showroom in Liverpool, and the *Liverpool Mercury* reported, "In a few days one of the most magnificent collections of modern works of art in silver, gold, and other precious metals ever grouped at one view is to be opened to the public at Messrs. Elkington & C^o.'s showrooms, in Church-street.

⁵¹⁴ *Art-Journal Illustrated Catalogue*, 1868.

⁵¹⁵ Dallas, *The Times*, 1867, p.8.

The works will comprise not only the *chefs d'oeuvre* displayed by Messrs. Elkington at the Paris Exhibition, but a number of ornamental objects which have been made for Her Majesty the Queen and other members of the royal family, as well as the Emperor of the French (exhibited by permission), together with fine specimens of *orfèvrerie* – using the word in its general application to metallic and enameled works – for which Messrs. Elkington have made themselves so famous, and which have not previously been exhibited to the public... Amongst the works... [is] the “Milton Shield,” designed and executed by M. Morel Ladeuil, and considered to be one of the grandest works of its class that has been produced in any age or country. The subjects delineated are the leading events of the “Paradise Lost” and “Regained,” and the marvel is how phases of such sublimity and mystery can be represented with pictorial force and effect in metals.”⁵¹⁶

⁵¹⁶ *Liverpool Mercury*, 21st January 1868, p.5.

11. *The Milton Shield* at the South Kensington Museum, March 1868.

The instant popularity of *The Milton Shield*, with both public and press, prompted Henry Cole to purchase it for the South Kensington Museum for the very considerable sum of 2000*l*. Using a *Purchasing Price Calculator* to measure the *income value* against the relative average income that would be used to buy *The Milton Shield* today, based on GDP per capita growth since 1867, it cost British tax payers about £1½ million pounds, making *The Milton Shield* the most important and expensive “Modern Specimen” (which is what Victorian curators called contemporary artworks) acquired by the South Kensington Museum during the 19th-century.

I believe that *The Milton Shield* also marked the apogee of an important revivalist genre in late 18th and 19th-century metalwork, which I defined in Chapter II as *narrative plate*. Two of the dominant cultural factors of the mid-Victorian years were rapid industrial and economic progress, and the emergence of a mass reading public. In his book, *The English Common Reader*, Richard D. Altick described how, between 1860-1890, “The three great requisites of a mass reading public – literacy, leisure, and a little pocket money – became the possession of more and more people.”⁵¹⁷ The rapid emergence of that mass reading public is why so much 19th-century visual art was a primarily narrative experience that satisfied a public demand for recognizing literary allusions, but also employed an intelligible grammar and lexicon of representational elements and ornamental motifs that were designed to make artistic and ornamental form and content ‘readable’.

Milton scholars, like Robert D. Altick, and Oscar Sherwin in “Milton for the Masses,”⁵¹⁸ have detailed the deep attachment the new reading public, which emerged

⁵¹⁷ Altick, 1957, p.306.

⁵¹⁸ Sherwin, 1951.

during the late-Georgian and early-Victorian period in Britain, developed with Milton's *Paradise Lost*. Many Victorians read *Paradise Lost* religiously, especially on Sundays, preferring its poetry and drama to sermons and *The Bible*. Some, like the historian Thomas Babington Macaulay, could even recite it all by heart. The Victorians developed a special relationship with Milton's poetic narrative, and visions of the most vivid passages of *Paradise Lost* were etched, like movie scenes, in the memories of those who viewed *The Milton Shield* at the South Kensington Museum.

Victorians developed a similar relationship with *The Pilgrim's Progress* by John Bunyan, although never in so pervasive or profound a manner as *Paradise Lost*. Published in 1678, Bunyan's book became the subject of another of repoussé shield when Frederick Elkington attempted to repeat the success of *The Milton Shield* by commissioning Morel-Ladeuil to sculpt *The Bunyan Shield* to celebrate the bicentenary of *The Pilgrim's Progress* at the *Exposition Universelle* at Paris in 1878. (Fig.54.) Morel-Ladeuil's reputation was such that on 27th April, before *The Bunyan Shield* went to Paris; it was presented for Queen Victoria's inspection at Windsor Castle.⁵¹⁹ *The Bunyan Shield* was also prolifically reproduced as an electrotype, although the whereabouts of the original is currently unknown. *The Bunyan Shield* was not nearly as well received in Paris in 1878 as *The Milton Shield* had been in 1867. The French critics and public did not have the same familiarity with Bunyan as they had with Milton, Shakespeare, or Scott, and found the subdivisions of the shield's narrative and ornamental design awkward, and the relationships between the scenes depicted in its cartouches mystifying.

Lewis F. Day felt there was a problem with the design of both shields as 'a homogenous whole.' "It seems to me a grave defect in design that one should have occasion to ask oneself the explanation of the subdividing lines in these shields – bones, so to speak, without a purpose. They are not in themselves graceful or characteristic; they

⁵¹⁹ *The Times*, 29th April 1878, p.9.

bear no apparent relation to the form of the shield or to the subjects they enclose...’’⁵²⁰

However, G.A. Sala, who critically observed the British arts of the 1870s as E.S. Dallas had the 1860s, wrote of *The Bunyan Shield* in 1878, “Looked at not only in its powerful ensemble, but in the astonishing minuteness and grace of its details, this latest work of Morel-Ladeuil may be regarded as at once the most ambitious and the most successful that he has executed for Messrs. Elkington.”⁵²¹

The Milton Shield’s sculptural techniques, *repoussé* hammering and chasing, and damascening, and its traditional shield design can be seen to draw upon a remarkably eclectic set of art historical references, which include classical bas-reliefs on architectural friezes and sarcophagi, carved and fictile ivories, and most especially the fashionable armours and weapons commissioned by Renaissance noblemen. Throughout the Medieval and Renaissance period collecting arms and armour was rarely just a practical means of defending oneself, but was primarily a display of wealth and power. In the 16th-century, wealthy collectors began collecting *Rustkammers*, which were a curiosity cabinets comprising an historical armoury, or even a *Heldenrustkammer*, which was a ‘heroes gallery’ of weapons and military attire and decorations belonging to great generals and war heroes.

In 1796, the *Musée d’Artillerie* opened in Paris, the core of its collection comprised the armoury seized by the state during the French Revolution from the famous collection at Chantilly that had belonged to the émigré prince de Condé. During the Napoleonic Empire the *Musée d’Artillerie* celebrated France’s military glory by displaying historical arms and armour. Across Europe, wary and chastened by the experience of losing their possessions in successive revolutions, after 1848, and especially during the 2nd Empire of Napoleon III after 1852, wealthy and aristocratic patrons became generous benefactors of the new public museums. The opening of public museums during the 19th-century allowed the public, art patrons, artists and artisans to see 16th-century shields like the

⁵²⁰ Day, 1990, p.274.

⁵²¹ Sala, 1880, p.81.

Rondache au triomphe de Galatée at the *Musée d'Artillerie* that had previously been inaccessible in private aristocratic collections.⁵²² The *Rondache* was given to the *Musée d'Artillerie* as a bequest by le baron des Mazis, one of the greatest collectors and most generous benefactors of arms and armour during the 2nd Empire "...many gifts have been made to this beautiful collection, conspicuous among which are those made by Napoleon III and the baron des Mazis."⁵²³

In Paris, art journals, like *L'Art Pour Tous*, fuelled public interest in Medieval and Renaissance style shields and salvers. The problem was that arms and armour became so collectible that there simply weren't enough genuine 16th-century shields to meet the market demand for them, and a large industry of facsimiles and fakes emerged. Highly skilled metalwork sculptors, notably Antoine Vechte, began his career making counterfeit historical artifacts, not only reviving the Renaissance technique of repoussé with great technical proficiency, but also collaborating with designers, like Feuchère, to create original designs that looked convincingly like historical works. Encouraged by wealthy and knowledgeable patrons like the duc de Luynes, Vechte, followed by his pupils Fannièrre and Morel-Ladeuil, began making contemporary repoussé designs that used the popular framing device of the 16th-century shield.

By utilizing the idea of a shield as a framing device, drawing on the historic and symbolic resonance of its distinctive shape and vertical surface, Victorian revivalist shields, like *The Milton Shield*, also made reference to the long tradition of heraldic escutcheons. Few forms of design are so precisely and profoundly laden with visual representations of social identity and status as heraldry. By creating, granting, and blazoning coats of arms, the art of heraldry governs and makes visible social and professional rank and protocol, duties and responsibilities. It conforms to a formal system of ornamental rules that

⁵²² Unknown artist (Italy), *Rondache au triomphe de Galatée*, circa 1550, musée de l'Armée, circa 1550, silver, iron, copper-alloy, metal wire and textile, D.56.5cm, N° inventaire: I59.

⁵²³ Demmin, 1869/1911, p.12.

govern visual order. It is a visual language with its own grammar and lexicon, which can be read like writing. But because there is so much visual leeway in the design of a coat of arms, the *blazon* was developed as a formal written description of the design that specifies its distinctive elements. In other words, a coat of arms is defined not by visual representation but by the wording of its *blazon*, making it in essence a literary art. The verb ‘blazon’ is derived from the French *blason* meaning “shield”. Arthur Charles Fox-Davies, in his *Complete Guide to Heraldry* of 1925, described it as “the shorthand of history”.⁵²⁴

In 1867, *The Milton Shield* was unequivocally seen as a modern artwork, both the original repoussé sculpture and, more especially, the 19th-century’s most popular edition of electrotype reproductions, a series of sculptural *facsimiles* so exact that they were almost indistinguishable from the real thing. So, in tracing its art and social history, *The Milton Shield* can be seen to have two simultaneous historical narratives: One is that of the authentic masterpiece shown in Paris in 1867 and then bought by the South Kensington Museum. The story of the original *Milton Shield* is the most famous in a series of eye-catching artworks made by Elkington & C^o. over a 27 year period for successive universal exhibitions, from *The Death of Tenebris Mawr* and the *Iliad Salver* in 1851 to *The Bunyan Shield* in 1878, which were designed to capture the attention of the public and press.

⁵²⁴ Fox-Davies, 1925, p.xi.

12. *The Milton Shield* as the Apogee of Narrative Plate.

The Milton Shield can be seen as the apogee of a succession of 19th-century revivalist shields, salvers, and tazzas, which began with Philip Rundell and John Flaxman's neoclassical masterpiece, *The Shield of Achilles*, which I described in Chapter II as the archetype for many subsequent shields and sideboard dishes in the long tradition of narrative plate. Antoine Vechte's *The Battle of the Amazons* was an iron rosewater dish depicting the story of Theseus' conquest of the Amazons, and his abduction of their chieftain Hippolyta to be his bride. Probably designed by Jean-Jacques Feuchère, the classically attired figures arranged in a circular frieze clearly borrow from Flaxman's drawings. Friedrich Wilhems IV of Prussia acquired it sometime before 1843. The original is now lost. Elkington probably acquired a cast from Braun or Schlick, and at the Great Exhibition exhibited an electrotype to great acclaim. Matthew Digby Wyatt included an illustration amongst his 'choicest specimens' of 1851, and used his description to explain the electrotype and electro-plate processes. (Fig.55.) Along with Grüner's *Jewel-Cabinet*, it was one of two artworks that the Jury, chaired by the duc de Luynes, specifically cited in their award of the Council Medal to Elkington. Luynes called Elkington's electrotype "the large circular plate called the Shield of the Amazons,"⁵²⁵ and Wyatt also referred to it as a 'shield,' although the original was a dish. In the 1850s and 60s, Elkington's made countless copies of it, including reductions, and it was so popular as an electrotype that according to Peter Connor it became known as 'the Elkington Shield.'⁵²⁶

In 1851, Wyatt also illustrated an unfinished shield by Vechte for Hunt & Roskell, which he described as "...an apotheosis of Milton, Shakespeare, and Newton."⁵²⁷ Wyatt describes the completed parts of the shield in great detail, especially the panel depicting

⁵²⁵ *Reports by the Juries*, 1851, p.1121.

⁵²⁶ Connor, 1989, p.214.

⁵²⁷ Wyatt, 1851, Plate CXVII.

Milton, who is “...represented dictating to his daughter his poem of “Paradise Lost,” inspired by the genius of Religion and Poetry.” Surrounding them are scenes from *Paradise Lost*, including “...the angel Raphael cautioning our first parents against their enemy;” and “Crouching behind a shield is Satan.”⁵²⁸ The shield, like other works by the mercurial Vechte, was never completed, and is now lost, but, like Elkington’s electrotpe of Vechte’s *Amazons*, it was also singled-out for praise by Luynes in his 1851 Report.⁵²⁹ Whether Morel-Ladeuil ever saw Vechte’s ‘apotheosis of Milton’ in person is unknown, but it was almost certainly a powerful precursor of *The Milton Shield*.

It is also unknown if Morel-Ladeuil ever saw *Vase du Paradis perdu ou de la Création* by Vechte, which also takes Milton’s *Paradise Lost* as its inspiration, and appears to be a strong precursor of *The Milton Shield*. The Minister of the Interior of the 2nd French Republic commissioned it on 9th October 1848, but Vechte’s recruitment by John Samuel Hunt and self-imposed exile in London meant that it was not completed until 1861, when it was shown at the Salon in Paris. It is now in the Louvre, and Anne Dion-Tenenbaum says, “The iconography of the vase is complex and delicate to decipher, especially as Vechte is not always faithful to his source.”⁵³⁰ (Fig.56.) In contrast, like John Wesley’s popular abridged edition of 1763, Ref. Sherwin and Wesley, Morel-Ladeuil’s visual interpretation presents a very clear and close reading of the essential passages of Milton’s text, but it is also evident that Morel-Ladeuil was directly inspired by the central tondo of Vechte’s vase, which depicts Adam and Eve enwreathed by foliage in the Garden of Eden.

In Chapter II, I described how, in January 1853, the *Iliad Salver* enthralled the British press and public when an electrotpe was given to Charles Dickens. Later that same year, electrotypes of the *Iliad Salver* were exhibited simultaneously in Dublin and New York, which showed how the publication of electrotypes could generate publicity in

⁵²⁸ *Ibid.*

⁵²⁹ *Reports by the Juries*, 1851, p. 1124.

⁵³⁰ Dion-Tenenbaum, 2011, p.241-245.

different places, anywhere in the world making sculpture and ornamental art as easily distributable as printed works, like engravings, books, or even newspapers. After the new President, Franklin Pierce, attended the opening on 14th July over 1m Americans visited before it closed on 14th November 1854. In 1853, as well as Charles Dickens' sideboard, editions of the *Iliad Salver* were being simultaneously displayed in Elkington's showrooms in Birmingham and London, and at the International Exhibitions in Dublin and New York, signaling that the art of electro-metallurgy, the world's first electrical art, was also a global art form.

At the Vienna Weltausstellung of 1873, Elkington exhibited an electrotype, of *The Milton Shield*, and wrote in their catalogue: "In consequence of the original having already been exhibited, attention is now drawn to a fac-simile copy only, which is shown merely to illustrate how perfectly the most elaborate works of art in metal may be reproduced by the electrotype process, which preserves intact the finish given by the hand of the artist himself."⁵³¹ The electrotype publication of *The Milton Shield* was the most important edition of sculptural 'fac-similes copies' ever made. There had, of course, been sculptural editions of bronze-cast sculptures before. However, the universality of the poetic force and political allegory of the narrative it visualized, married to Elkington's courting of the popular press and mass spectatorship at the International Exhibitions, meant that, with each electrotype edition, *The Milton Shield* acquired yet another gregarious and fascinating narrative strand in its art and social history, a narrative polyphony that went far beyond the story of the original repoussé masterpiece in the South Kensington Museum.

⁵³¹ *Universal Exhibition Vienna 1873*.

13. *The Milton Shield* as a Contemporary Allegory.

There are two surviving Elkington & C^o. visitors' books in the V&A.⁵³² One contains the names and addresses of visitors to the Newhall Street showroom in Birmingham from 1860-1866; the other records the names of visitors to Elkington's trophies at four of the international exhibitions from 1855-1878: Paris, 1855; Vienna, 1873; Philadelphia, 1876, and Paris, 1878. The 1855-1878 visitors' book is also an informal ledger of sales, which records the names and addresses of people that acquired artworks at each of those international exhibitions. It documents the prices they paid, and often the payment arrangements and delivery details. It is a unique social and art historical record of the patrons of the new art of electro-metallurgy. My study of the visitors' books has revealed the success of electrotypes of *The Milton Shield* at the Centennial Exposition at Philadelphia in 1876, and how the publication of *The Milton Shield* as electrotypes allowed it to acquire even greater iconic and allegorical significance in America, a decade after it was made and first exhibited in Paris. *The Milton Shield* depicts scenes from *Paradise Lost*, which was an allegory of the English Civil War of 1642–1651, but for the generation of Gilded Age Americans that had fought in the American Civil War of 1861-1865, *The Milton Shield's* depiction of the war in Heaven was seen as an allegory of their own recent civil conflict.

My research into Elkington & C^o. has involved locating several artworks by Morel-Ladeuil, which have been lost to art-historians since the publication of the *Catalogue Complet* in 1904. One of these lost artworks is the commission that Morel-Ladeuil completed for Elkington & C^o. immediately prior to *The Milton Shield*. It was a rather anomalous commission for a testimonial sword, but with hindsight seems like the complement to *The Milton Shield*. The event that the testimonial sword commemorated

⁵³² Elkington & C^o., *Visitors' Book: 1855-1878*.

and its recipient reveals that when it was made in 1865-66, just prior to *The Milton Shield*, the American Civil War was very much on the mind of the artist. The sword was commissioned and paid for by a public subscription of officers from the British armed forces, and Confederate sympathizers in Britain, and was presented to Captain Raphael Semmes of the Confederate battleship CSS Alabama, which had been sunk by the ironclad U.S. battleship Kearsage in the Battle of Cherbourg on 19th June 1864. Viewed in the knowledge of *Semmes' Sword*, and the popularity of *The Milton Shield* when it was shown a decade later at Philadelphia 1876, both the original artwork and its electrotype editions must be seen as a double allegory of both the English and American Civil Wars.

The Milton Shield depicts the 6th Book of *Paradise Lost*, and Morel-Ladeuil breaks with the traditional composition and imagery of the genre of Miltonic art by placing in the central medallion of the shield, the scene where the archangel Raphael is sent by God to admonish Adam and Eve about Satan's rebellion, and to warn him that Satan has infiltrated Eden in order to try and corrupt them. To emphasize the terrible consequences of Satan's rebellion, Raphael narrates to Adam and Eve the beautiful story of the creation in contrast with the Angelic War in Heaven that vanquished the rebellious angels led by Satan. Morel-Ladeuil effectively takes a similar critical viewpoint to Macaulay in his famous *Essay on Milton*, by suggesting that Raphael represents Milton, the poetic narrator of history, conjuring enchanting images of the defeat of the satanic rebellion, as a warning from history. To Victorian readers familiar with the biblical intricacies of *Paradise Lost*, the central medallion, and the accompanying visions of the war in Heaven depicted on the side panels, was emotionally charged by what they knew came next in the story. The Victorians' spirit of inquiry into the principles of Christianity, and profound and liberal interpretation of the Scriptures ensured the 19th-century audience recognized and believed that they too were like the first couple, poised knowingly between the seduction and consequences of sin. (Fig.57.)

Lewis F. Day, writing in 1890, two years after the artist had died, felt that, “There is, throughout the work of the artist, a certain tendency to overelaboration...” and points particularly to the depiction of Eden in the central medallion of *The Milton Shield* “...the Garden of Eden is far too full of detail,” he says, “one associates more repose with the idea of Paradise.”⁵³³ However, it is the prescient complexity of the end of Eden that Morel-Ladeuil was seeking to evoke in Raphael’s admonishment of Adam and Eve. Looking backwards, amidst the aestheticism and decadence of the 1890s, Day saw the overelaborations in Morel-Ladeuil’s work as, “a fault altogether in the popular direction, and may be due, not to the idiosyncrasy of the artist, but to the dictation of the market. The public loves to see the evidence of labour, and thinks that worth paying for.”⁵³⁴

Raphael’s description of Satan’s rebellion and the Angelic War in Heaven is an epic narrative of large-scale civil warfare, which Morel-Ladeuil depicts in the two large silver panels on either side of the central medallion. The left panel depicts the arrayed forces of loyal angels ascending towards God, who is depicted above the central medallion. The right panel depicts the defeated horde of rebel angels being cast into Hell, or Tartarus, as Milton calls it. As the defeated rebel army falls towards the bottom of the panel their appearance becomes grotesquely demonized as they are gripped by fear and anguish. At the bottom of the left-hand panel, in contrast, the naked throngs of angels carrying spears and oval shields like *The Milton Shield*, are arranged like a classical frieze, much like the pedestrian figures in the marble bas-reliefs of the *Parthenon* and *Bassae friezes* in the British Museum, which inspired much of the Attic relief sculpture of the late 5th century, later vase painting, and grave stelæ. (Fig.58.) Day felt that it was the juxtaposed scenes of the angelic war in Heaven that gave *The Milton Shield* its claim to greatness: “The banded powers of Satan,” he wrote, “for the most part so ridiculous in modern art, are

⁵³³ Day, 1990, p.273.

⁵³⁴ *Ibid.*

absolutely impressive; and the way in which untold multitudes of figures are suggested is most admirable. Moreover, the story, dramatically, as it is told, is, at the same time, treated with due regard to the *technique* of the silversmith...”⁵³⁵ Lewis *italicizes* the word *technique* for emphasis.

In repoussé, the artist first inscribes a design using a sharp tool onto a plain flat sheet of metal, much like an engraving. The metal is laid on a pitch-bed, which has been melted and shaped to match the design and depth of the relief. The design is pressed hard enough to appear as light lines on the reverse of the metal. The artist then ‘pushes’, hence the French word repoussé, which means, ‘to push back,’ by deftly tapping and hammering the inscribed design from the back of the image. The ‘pushing’ is done with a multitude of shaped punches: tracers, planishers and embossers of different shapes and sizes. Finally, the artist turns the work over and works directly on the front, chasing and filing the ‘bulges’ to refine the design into a detailed bas-relief. The work is painstakingly laborious, and allows little room for error. Large repoussé artworks like *The Milton Shield* took years to complete.

The art of electro-metallurgy did not revolutionize any aspect of the artistic process involved in making the original repoussé artwork, but it could replicate every minute detail of that artistry, reproducing years of highly skilled labour in just a few hours in the plating vats. This made it affordable to many among the Victorian the middle-classes. Anyone with “a little pocket money,” to use Altick’s formulation,⁵³⁶ could afford to own an electrotype of a costly, famous, and universally-fêted artwork. Depending on finish and quality, prices ranged from 5*l.* 15*s.* 6*d.* for plain copper with a bronzed patina, to 12*l.* 12*s.* 0*d.* for an exact *fac-simile* that was “silver and oxydised with bands gilt where

⁵³⁵ *Ibid.*

⁵³⁶ Altick, 1957, p.306.

damascened in the original, A quality.”⁵³⁷ (Fig.59.)

When *The Milton Shield* returned to Britain, and went on permanent display in the South Kensington Museum in early 1868, it was in the immediate aftermath of the Reform Act of 1867.⁵³⁸ In July 1868, John Morley wrote in the *Fortnightly Review* that Britain had undergone a transfer of power from “a class to a nation.”⁵³⁹ In its depiction of *Paradise Lost*, in which Milton allegorized the English Civil War as the war in Heaven, and its transfiguration of the poet, and propagandist of the Commonwealth, into Raphael the archangel of God, *The Milton Shield* was also powerfully emblematic of the social change wrought by the 2nd Reform Act. Even more pertinently, *The Milton Shield* extended the franchise for contemporary art. The exorbitantly priced original was purchased with public funds and made freely available for all to see in the public museum at South Kensington. Furthermore, electrotype reproductions, indistinguishable from the real thing, could be purchased by anyone of moderate means from the museum or from Elkington’s showrooms.

⁵³⁷ *Inventory of the Electrotpe Reproductions* 1869, p.56.

⁵³⁸ *Representation of the People Act 1867*, 30&31.Vict.c.102.

⁵³⁹ *Fortnightly Review*, July 1868, p.105.

14. *The Milton Shield* in America, 1876.

In 1876, Elkington & C^o. contributed an impressive stand at the Centennial Exhibition in Philadelphia, America's first official World's Fair. (After 1876, the American 'Stand' replaced the Victorian 'Trophy.') The USA was still in the throes of Reconstruction after the Civil War, and the victorious Union general, Ulysses S. Grant was in the White House. The signatures in Elkingtons visitors' book for the 1876 Centennial are a who's who of 'The Gilded Age.' Mark Twain had only just coined that term in 1873 to satirize the superficiality, greed, and political corruption surrounding Grant's White House administration, but the name now recalls the glittering society of the era. The visitors' books also record which of Elkingtons' electrotypes were the most sought after by the art-collectors of America in 1876, and what kind of people were buying them.

Despite the fact that it was almost a decade old, by far the most popular electrotype that was sold to visitors at the 1876 Centennial was *The Milton Shield*. An 'A quality' electrotype, "silver and oxydised with bands gilt where damascened in the original," was on show at Elkington's stand, and every American that purchased *The Milton Shield* in Philadelphia seems to have ordered a *fac-simile*. It cost \$100, which means it cost a little less than \$20,000 today (relative to income value). Most buyers paid half up front with \$50 on account. Amongst those recorded in the visitors' books are the famous and wealthy, alongside many ordinary middle-class Americans. Thomas Nast, the celebrated caricaturist and editorial cartoonist, acquired an edition of *The Milton Shield*. More typical of the new American patrons for Elkington's art of electro-metallurgy was Percy Rivington Pyne, the 19-year-old grandson of Moses Taylor, the founder of the *First National City Bank* of New York and a major stockholder in the *Delaware, Lackawanna and Western Railroad*. Another super-wealthy patron was William Wilson Corcoran, the banker,

art collector, and founder of the *Corcoran Gallery*, which had opened in Washington in 1874. A significant number of women also purchased *The Milton Shield*, which reveals the prominence that independently wealthy women, wives, daughters, and were taking in purchasing artworks. Mrs. R.J.C. Walker, née Anne Weightman, was the wife of a successful lawyer and future Congressman, and her father was the chemical manufacturer William Weightman, who was one of the wealthiest businessmen in America. After the death of her father in 1904, she became one of the richest women in world. Miss Laura J. Merrick's father and brother were engineers that founded and ran the successful firm of Merrick & Agnew and the famous Southwark Iron Foundry in Philadelphia. Alongside the famous and wealthy, many ordinary middle-class citizens from all across America invested their dollars in an electrotype of *The Milton Shield*, from Frank S. Brown of Hartford, Connecticut, to R. Cummings of Toledo, Ohio, to Gee Pearce of Oakland, California.

However, by far and away the most illustrious American that purchased an electrotype of *The Milton Shield* at the 1876 Centennial at first eluded me in my study of Elkington's visitors' books, but I kept puzzling over the name "Gen^R O.E. Babcock," whose name appears in the visitors' book on 1st August 1876. Above his name the address says, "Executive Mansion," and beneath his name, "Washington," and in the margin is a smudged "Milton Shield", without any price or payment details listed. However, most intriguingly, written just beneath his name is "For Mrs. Grant." (Fig.60.)

Orville Elias Babcock was a General in the Union Army, who as aide to Ulysses S. Grant was responsible for selecting Wilmer McLean's house as the site of Gen. Robert E. Lee's surrender. After the War, O.E. Babcock remained on Ulysses Grant's staff throughout the turbulent Reconstruction, and when, in 1868, Ulysses S. Grant was elected as the 18th President of the United States, Babcock was appointed as his Private

Secretary, and went to work in the White House. It was clear that the “Mrs. Grant” for whom O.E. Babcock had acquired an electrotype of *The Milton Shield* was Julia Dent Grant, the President’s wife, and First Lady of America from 1869 to 1877. In her memoirs, she recalls some of the art she chose for the White House: “I also had the pleasure of selecting for the Executive Mansion a magnificent bronze shield on which was wrought in honor of Milton some of the scenes from *Paradise Lost*. It was very beautiful and called the Milton Shield. [It is] still at the White House and is universally admired.”⁵⁴⁰ After she acquired the electrotype of *The Milton Shield* at the Philadelphia Exhibition, Mrs. Grant hung it in the Red Room of the White House, which she used as her private reception room.

When Ulysses and Julia Grant left the White House the following year, it provided the decorative backdrop to the oath of the president that followed Ulysses S. Grant, the 19th President of the United States, Rutherford B. Hayes. President Hayes was the first U.S. President to take the oath of office in the White House. He was sworn in prior to Inauguration Day, because it happened to fall on a Sunday, and so he took the oath privately on the evening of Saturday 3rd March 1877, to ensure that America was not left without a President for a day. Gilson Willets’ book *Inside the White House* of 1908 recounts a wonderful description, by an unnamed writer of 1876/77, describing Hayes’ oath under *The Milton Shield* in the Red Room of the White House: “The Red Parlor in which the ceremony took place is the room which had been used by Mrs. Grant as a private reception room... Many of the ornaments about the room suggest historical reminiscences. ...A notable feature of the decoration of the room is a large electrotype copy of the Milton Shield, modeled by Morell [*sic.*], the original of which is in *repoussé* work in iron and silver. The copy was purchased by Mrs. Grant at the Centennial

⁵⁴⁰ Grant, 1975, p.189.

Exhibition.”⁵⁴¹

Julia Dent Grant’s decision to purchase and make *The Milton Shield* as a notable feature of her decoration of the White House, where it became the backdrop to Rutherford B. Hayes’ oath of office the following year is remarkable. Firstly, because *The Milton Shield’s* depiction of the defeat of Satan and the rebel angels by the archangel Michael, was clearly seen as an allegory of Ulysses S. Grant’s role as the commander of the Union Armies that defeated the Confederacy. Ulysses S. Grant always referred to the Civil War as “the great War of the Rebellion,” and wrote as the opening words to the conclusion of his *Personal Memoirs*, “The cause of the great War of the Rebellion against the United States will have to be attributed to slavery... the war between the States was a very bloody and a very costly war. I commanded the whole of the mighty host engaged on the victorious side.”⁵⁴² Central to Morel-Ladeuil’s critical reading of *Paradise Lost* were Raphael’s admonishments to Adam and Eve, the first couple. Portrayed in the central medallion, they are reminded of what must never forgotten or disregarded; their sense of obligation and responsibility. It is a message that must have spoken powerfully to Ulysses and Julia Grant living in the White House during the post-war Reconstruction.

Shortly after Raphael’s admonishments, came the corruption of mankind and the expulsion from Eden. The election of President Hayes in 1876 was one of the most disputed and controversial in American history after fraud by both Republicans and Democrats. The infamous “Compromise of 1877” in which the Democrats’ agreed to Hayes’ election in return for the Republicans agreeing to withdraw the federal army from the South effectively ended Grant’s policy of Reconstruction, and ceded influence over the Southern states to the Democratic Redeemers. The “Compromise of 1877” meant that America had to wait almost a century, until the African-American Civil Rights

⁵⁴¹ Willets, 1908, p.199.

⁵⁴² Grant, 1885, p.494.

Movement of the 1950s and 60s, to complete the Reconstruction and truly win the Civil War. Most Americans, including many Republicans, refused to accept his presidency as legitimate, and he was nicknamed “His Fraudulency” or “President Rutherfraud.” Acknowledging the shame of corruption, President Hayes swore his oath privately in the Red Room, under *The Milton Shield*.

The story of the White House’s electrotype of *The Milton Shield* only adds to my conviction that it is the most important electrotype publication in art history, and one of the very greatest artworks of the 19th century. Celebrities, multi-millionaires, and ordinary middle-class people all acquired *The Milton Shield*; even the President of America acquired it. Countless public and private museums and other institutions across America have a copy of *The Milton Shield*, either on display or in storage, from Boston Museum of Fine Arts to Los Angeles County Museum of Art. There are also electrotypes of *The Milton Shield* currently on display in numerous American educational institutions, like the Peabody Institute Library in Massachusetts and the entrance hall of Evergreen Museum and Library at John Hopkins University in Baltimore. Many major European art galleries and museums also own an electrotype of *The Milton Shield*, as do many museums throughout of the Commonwealth of Nations, like the Powerhouse Museum in Sydney Australia and Art Gallery of South Australia in Adelaide. No other artwork hung so prominently in the White House for a quarter of a century as an allegory of the defining event in American history, whilst *simultaneously* being exhibited as an allegory of the defining event in British history, and the most popular and expensive “Modern Specimen” of the Victorian era in the South Kensington Museum in London. Furthermore, no other artwork is currently on display, *simultaneously*, in the V&A in London and Birmingham Museum and Art Gallery, the Musée d’Orsay and Musée d’Arts Decoratifs in Paris, the Metropolitan Museum of Art in New York and the Museum of Fine Arts in Boston.

EPILOGUE.

1. Elkington & C^o. versus Tiffany & C^o., 1878

The third *Exposition Universelle* in Paris, from May-November 1878, was the last at which Elkington exhibited artworks that could be considered important or groundbreaking. Europe and America were just emerging from the Long Depression, a worldwide economic recession that lasted from October 1873 – March 1879, and it was clear that the global economic and cultural landscape had changed. Britain was losing its industrial advantage over the economies of Europe and America, and Elkington’s exhibition stand in 1878 can be seen as a bellwether of British decline.

Officially at least the company was fêted again; becoming an *Officier de la Légion d’honneur*, whilst its French artists, Willms and Morel-Ladeuil, were both made *Chevaliers*. However, signs of Elkington’s decline were apparent in the reviews of foreign newspapers. Anna Blackwell was a British-born American journalist living in Paris who was the foreign correspondent of an Australian newspaper. From c.1860-1890, she wrote under the pseudonym “Stella” for the *Sydney Morning Herald*. In 1878, she sent a series of reports on the *Exposition Universelle*, and, on 11th October, wrote a review of Elkington’s stand compared to that of Tiffany and C^o., who, to the surprise of many Europeans, received the top awards for silver and jewelry. “...nothing more admirable is to be seen than the collection of silverware displayed by Tiffany and C^o. of New York,” she wrote. “The only possible rival of this display – that of Elkington and C^o., which had hitherto carried off the highest honours at all International Exhibitions – has been, to the surprise of that firm and of the public – completely distanced by its American *confrere*.”⁵⁴³

Stella felt that Elkington exhibited only two works worthy of their reputation; *The Helicon Vase*, which had been exhibited five years earlier at Vienna, and *The Bunyan Shield*, which she extolled at length, before concluding: “This shield, designed and executed for

⁵⁴³ *Sydney Morning Herald*, 21st December 1878, p.7. NB. The report is dated 11th October, but until undersea telegraph cables were laid, news from Europe often took over a month to reach Australia.

the present Exhibition, has excited such general admiration and interest that Messrs. Elkington and C^o. have decided, with a view to developing a general taste for high art and refined workmanship, to make copies from the original by means of electro-deposition, and to sell these copies at the lowest possible rate, viz., for copies representing a *fac-simile* of the original... fifteen guineas each.”⁵⁴⁴ Apart from *The Bunyan Shield*, Elkington’s stand was a sight of glorious quiescence compared to the restless originality of Tiffany’s stand, observed Stella. “The Elkington Stand shows a collection of pieces executed for races, flagons, vases, candelabra, table centre-pieces, and services, &c., all superb, elegant, rich, and fine. But there is nothing in the whole display that has not been seen before, either in the same or in similar objects. If we turn to the Tiffany exhibit we find, on the contrary, that every object shown is novel, either in form, design, style, or substance.”⁵⁴⁵ Stella’s review presaged the beginning of Elkington & C^o.’s long creative and commercial stagnation.

Two years earlier, at the 1876 Philadelphia Centennial, one of the signatures in Elkington’s visitors’ book was ‘L.C. Tiffany,’ the 28-year-old eldest son of Charles Lewis Tiffany. (Fig.61.) Louis Comfort Tiffany began his career as a glassmaker, and interior designer, quite independently of his father, and it was not until 1902 that he became the Design Director of Tiffany & C^o. In 1882, President Chester Alan Arthur commissioned L.C. Tiffany to redecorate many of the staterooms in the White House, including the Red Room, which involved refurnishing, wallpapering, and installing new mantelpieces. I believe that Louis Comfort Tiffany removed *The Milton Shield* from the Red Room. Certainly by the time Grover Cleveland (1885-1889) and Benjamin Harrison (1889-1893) were in office; *The Milton Shield* had been moved upstairs in the second floor Oval Library, which is now called the Yellow Oval Room. (Fig.62.) Its low-level positioning between the bookshelves of the President’s library seems ideally suited to such a literary artwork.

⁵⁴⁴ *Ibid.*

⁵⁴⁵ *Ibid.*

Ulysses Grant Dietz, chief curator at Newark Museum, and great-great grandson of Ulysses S. Grant, who has written on the architecture and interior design of the White House,⁵⁴⁶ believes that *The Milton Shield* remained in the Oval Library of the White House until 1902, when it fell victim, along with L.C. Tiffany's decorative scheme and furnishings, to Theodore Roosevelt and Stanford White's sweeping Federal-style refurbishments.

Elkington's visitors' book for the Philadelphia Centennial records that L.C. Tiffany paid \$50 to acquire an electrotype of the "Cellini Cup." The visitors' book does not further identify which "Cellini Cup" it might have been. The *Coupe "Cellini"* by Jean-Pierre-Nazaire Marrel and Antoine-Benoît-Roch Marrel in The Louvre is a strong candidate.⁵⁴⁷ King Louis-Philippe purchased it at the *l'Exposition des produits de l'industrie* of 1839 as a gift for his son, the duke of Nemours. Another possibility is a silver repoussé cup in the form of a columbine flower, which is in the British Museum.⁵⁴⁸ It too was known as the "Cellini Cup," but is now thought to be a late 16th-century Jamnitzer-style masterpiece cup from Nuremberg. It seems almost too symbolic to be plausible that the heir to Tiffany & Co. should take away from Elkington's stand an electrotype of an unknown Renaissance-revival style cup, one of many purported to have been made by Benvenuto Cellini, the great Florentine sculptor and Mannerist goldsmith, reputedly the greatest metalworker in history, who was found guilty of killing a rival goldsmith.

⁵⁴⁶ Dietz and Watters, 2009.

⁵⁴⁷ *Coupe "Cellini,"* Jean-Pierre-Nazaire Marrel and Antoine-Benoît-Roch Marrel, 1839, silver, six chrysoprases, six red jaspers, six lapis lazuli, H.18cm/D20cm, Louvre, Paris, Museum Ref. OA 10841.

⁵⁴⁸ *"Columbine" Cup*, unknown maker, late 16th-century, silver repoussé, H.20.1cm, British Museum, London, Museum number .103.

2. E&C^o Uncrowned, *circa* 1896.

In the complimentary booklet that Elkington & C^o. published in 1923 for visitors to their showrooms, there is a cryptic ‘Note’ next to the list of maker’s marks, which states, “The use of the Crown as part of a Trade Mark was discontinued in 1896 owing to the action of the Sheffield Assay Office.”⁵⁴⁹ (Fig.63.) No further explanation is given, and there is no mention of “the action of the Sheffield Assay Office” in Elkington’s company papers to elucidate such a symbolic event in the company’s history. The answer can only be found in the Sheffield Assay Office’s archives.⁵⁵⁰

On the 3rd October 1895, at a quarterly meeting of the ‘Guardians of the Standard of Wrought Plate in the Town of Sheffield,’ the Law Clerk was instructed to seek counsel over the legal rights of a manufacturer who was using, and had for a long time used, a Crown as part of their maker’s mark in connection with the manufacture of silver plate. The manufacturer was not mentioned by name in the minutes of the meeting, but a natural assumption is that it was Elkington & C^o., who had used E&C^o crowned in a shield as their maker’s mark for over 50 years. In fact, the issue had first been raised at a meeting in March that year with regard to the use of the Crown mark by a small Birmingham silversmith and electro-plater named A.H. Tongue.

At the next quarterly meeting, on 9th January 1896, the Law Clerk reported that Fletcher Moulton, a noted London barrister specializing in patent law, had advised in favour of the exclusive right of the Sheffield Assay Office to use the Crown mark. Moulton recommended that a trade circular be sent round, clarifying the law as to the use of the Crown as a plate mark, and calling attention to the fact that it was routinely being

⁵⁴⁹ Elkington & C^o. Ltd., 1923, p.21.

⁵⁵⁰ This section is based on extracts compiled by Emma Paragreen, Curator and Librarian at the Sheffield Assay Office archives: *MG Archive, Ref. No. 2, Minutes of Guardians, 1773-1900*.

used in violation of the law, and that it was the intention of the Guardians to take legal action against anyone who continued to use a Crown as part of their maker's mark.

On 9th July 1896, the Law Clerk reported that in response to the circular the use of the Crown as a plate mark had been discontinued in several instances, and that communications were currently passing between the Assay Office and the solicitors of Messrs. Elkington & C^o. Ltd. A year later, on 5th July 1897, the Law Clerk reported that legal action was pending between Guardians and Elkington & C^o. Ltd. to decide whether the Assay Office had an exclusive right to use the Crown mark. On 6th January 1898, the Law Clerk reported that Elkington & C^o. Ltd. had agreed to discontinue the use of the Crown mark on all articles made by them after the end of 1897. They had also agreed to a 2-year period within which they were at liberty to dispose of all existing stock with the Crown mark on it, after which the question of an extension period, should it be desired, would be reviewed. Following the agreement, all legal proceedings stopped.

Elkington's maker's mark was always contentious, because the Crown had been the mark that the Sheffield Assay Office had used since 1773. To obviate legal objections Elkington had placed their crowned initials in a shield (shaped like a Swiss escutcheon), and usually included their capitalized name ELKINGTON or ELKINGTON & C^o. underneath it. This made it appear more like a pictorial trademark. Stamped onto metal articles, the intaglio design of E&C^o crowned appeared to emulate an old French *poinçon d'orfèvre* or *poinçon de jurande* rather than a Sheffield hallmark. The use of a Crown mark over initials, or a single letter, to create a pseudo-mark that appeared like an old French *poinçon* was not uncommon on British silverware.

However, by the time Sheffield's Guardians met in October 1895, numerous British electro-plating companies, in Birmingham and Sheffield, were incorporating the Crown into their maker's marks on electro-plate, often stamping them in a sequence that blatantly imitated a Sheffield hallmark. A reference to Mappin reveals that three notable

electro-plate firms using the Crown mark were, John Sherwood & Sons of Birmingham from 1858-1896,⁵⁵¹ Alfred Browett of Birmingham from 1855-1896,⁵⁵² and Harrison Brothers & Howson of Sheffield from 1862-1896.⁵⁵³ In 1912, Bradbury commented, “It does not appear to have been realized until recent times that the crown as a device was the exclusive property of the Sheffield Assay Office. At the instigation of the Guardians the stamping by manufacturers of a Crown on plated articles has to-day entirely ceased.”⁵⁵⁴

Bradbury dates the origins of widespread misuse of the Crown mark to fused-plate manufacturers, in Sheffield and Birmingham, around the time of the accession of George IV. “The use of a Crown, which began about the year 1820, eventually became so common a form of device that manufacturers apparently considered themselves entitled to strike it indiscriminately on plated articles. Why, until the year 1896, no official notice was taken by the Sheffield Assay Office Guardians of this transgression is somewhat of a puzzle.”⁵⁵⁵ Many smaller electro-plating firms, probably used the Crown mark in imitation of Elkington & C°. rather than the Sheffield Assay Office, and certainly without any historical knowledge of *les poinçons argent français*.

The Sheffield Assay Office’s reluctance to take action may have stemmed from the fact that some of companies that used the Crown mark, were large, well-established businesses that were influential in the trade, like John Sherwood, Harrison Brothers & Howson, and Elkington & C°. Sheffield Assay Office’s strategy may have been to assert their rights over small businesses like A.H. Tongue before confronting a leviathan like Elkington, which might launch a serious legal challenge. What obfuscated the issue was that since the early 1850s Elkington had held Royal Warrants of Appointment for

⁵⁵¹ Mappin, 1999/2006, p.76.

⁵⁵² Mappin, 1999/2006, p.15.

⁵⁵³ Mappin, 1999/2006, p.55.

⁵⁵⁴ Bradbury, 1912, p.434.

⁵⁵⁵ Bradbury, 1912, p.440.

supplying electro-plate to Queen Victoria, as well as several European royal courts, which permitted them to use the Crown symbol that was included in royal coats of arms to advertise their royal patronage. In 1896, backed by a barrister of Fletcher Moulton's formidable knowledge and reputation, the Sheffield Assay Office decided it was time to uncrown Elkington & C^o.

What made Elkington's use of the Crown symbol so contentious was that shortly after March 1842, when Josiah Mason's money induced them to vastly expand their operations to become manufacturing retailers rather than just gilders and gilt-toymakers, Elkington & C^o. began to use their E&C^o crowned in a shield mark as the first of four or five punch marks alongside |E|&|C^o| and a date letter, in a gothic typeface, and in four upright lozenges. It was a blatant imitation of a British hallmark, and the inclusion of a Crown made the ensemble look specifically like a Sheffield mark.⁵⁵⁶ Bury points out that prior to 1842 Elkington & C^o. had used their maker's mark to proudly advertise their new technology by stating very clearly that their articles were electro-plated: "The earliest electroplate made by Elkington's was marked with 'E&C^o' crowned in a shield and the word |ELEC|TRO|PLATE| in three portions."⁵⁵⁷ From 1841-48, Elkington used the date numbers 1-8 inside a diamond, before switching, in 1849, to date letters, beginning with the letter K, also inside a diamond. From 1865, when the date letters began again at A, it was placed in an upright lozenge.

Seen in that context, the inclusion of E&C^o crowned as part of such an ensemble it was in clear violation of the Sheffield Assay Office's exclusive right to use a Crown mark on silver. Used in isolation, or over the name ELKINGTON, it may have looked like a trademark logo, but punched as part of a series of five initials, in a gothic font, in upright lozenges, it was a straightforward common law tort. If it had ever gone to court,

⁵⁵⁶ Elkington & C^o. Ltd., 1923, p. 20; Mappin, 2006, p. 39.

⁵⁵⁷ Bury, 1971, p.62.

Fletcher Moulton could easily have shown that Elkington's use of E&C^o crowned was a blatant act of passing off that they had been allowed to get away with for fifty-seven years.

The uncrowning of Elkington by the Sheffield Assay Office, just as the 19th-century ended, presents a powerful historical metaphor. The exiguous historiography of Elkington & C^o. and the art of electro-metallurgy, which followed R.E. Leader's compilation of the company records in 1914, has focused predominantly on the manner in which Elkington's patenting of electro-plating, and its collateral technologies, totally supplanted the fused plate trade. Bury in particular chronicled the paradigm shift in a way that I think unhelpfully polarizes the metalwork trades of Sheffield and Birmingham as regional rivals, ending her chapter called "Struggle and Success" with the line: "The victory for Elkington's was complete."⁵⁵⁸ Fused-plate companies went out of business in both Birmingham and Sheffield, but most of them, sooner or later, became electro-plating firms. It is unlikely that any of the partners in Elkington & C^o. ever felt any sense of victory at driving colleagues in the metalwork trade out of business, in Birmingham, Sheffield, or anywhere else.

R.E. Leader was appointed to compile the *History of Elkington*, which is now in the Archive of Art and Design, in 1914. He was 75-years-old, and the start of the Great War that summer prevented him from ever publishing his voluminous research. After the war, in 1919, he published an introductory essay based on the historical material he had compiled titled, "The Early History Of Electro-Silver Plating."⁵⁵⁹ Frederick Bradbury's *History of Old Sheffield Plate* was published in 1912, and I believe that Leader's *History of Elkington* was primarily commissioned in response to Bradbury, et al.'s, recriminatory chronicling of how Elkington & C^o. had used their patents to destroy the fused-plate companies of Sheffield.⁵⁶⁰ Hearing historical rhetoric in the contemporary context from

⁵⁵⁸ Bury, 1971, p.38.

⁵⁵⁹ Leader, 1919.

⁵⁶⁰ Bradbury, 1912, p.139-142.

which it arose is essential, and in 1912 Bradbury was actively seeking to historicize, and in the process rebrand, fused-plate as ‘Old Sheffield Plate’ because, in the late-1890s and early years of the 20th-century, any fused-plate articles that had evaded the silver breaker were becoming as collectable as antique silver.

Culme was more sanguine, and wrote, “The process of electro-plating... did indeed cause a revolution. In this respect it paralleled the perfection of photography.”⁵⁶¹ The comparison with photography seems apposite, because the discovery of photography and the electrotype process were contemporaneous. *The Milton Shield* was reproduced seemingly *ad infinitum*, like a three-dimensional photograph, or an engraving, and in the 1850s and 1860s the terms used repeatedly by Elkington & C^o. on the maker’s mark of their art-manufactures was ‘ELECTRO DEPOSITED & PUBLISHED,’ evoking printed books as the prima-facie example of technological reproduction. (Fig.64.)

Elkington’s art of electro-metallurgy created a new paradigm. The aesthetic application of complex science to manipulate metals at the molecular level created the world’s first electrical art, and electro-plating, electroforming (as electrotyping is now called), and electrolytic-metals production transformed the manmade world. Writing in 1873, G.A. Sala suggested it might even lend its name to the historical epoch: “Critics who wish to appear smartly cynical are even apt to qualify the present epoch as an “Electro-plated Age;” and the philosophy of Mr. Carlyle with regard to shams may be diluted to infinity when we come to descant, with a complacent causticity, on the multitude of make believes and “perfect substitutes’ for the precious metals which the discovery of electro-metallurgy has brought forth.”⁵⁶²

As Halévy and others have shown, by the time that Elkington & C^o. Ltd. lost it’s crown in 1896, industrial competition from America and Germany had made free trade versus protective tariffs the primary issue in British economic and political debate. Halévy

⁵⁶¹ Culme, 1977, p.116.

⁵⁶² Sala, “The Home of Electro,” in *Universal Exhibition Vienna 1873*.

called it a national obsession.⁵⁶³ Birmingham manufacturers like Elkington & C^o. Ltd. battled against both cheap foreign imports and high foreign tariffs. It was poignantly visible in the decline of visits to the Newhall Street factory and showroom, not because there were fewer visitors, but because, fearing industrial espionage, the company closed its doors to foreigners. In 1896, the French travel writer Édouard Deiss wrote: “Visits to factories have become more and more difficult in Birmingham and other towns. German competition has done considerable harm to the manufacturers of this country in producing more cheaply merchandise of which the manufacture had previously been almost a monopoly. In this connection the English have used the serious word ‘treachery’, and have accused their young competitors of coming into their factories to copy their goods, their machines, and their methods of production.”⁵⁶⁴ Writing in 1940, exactly a century after G.R. and Henry Elkington filed Patent No. 8447,⁵⁶⁵ the Birmingham industrial designer R.D. [Robert Dudley] Best (1892-1984) observed that the inhospitable reception of Édouard Deiss at the town’s factories showed that even Frenchmen (especially those with a Germanic surname) were no longer welcome at Newhall Street: “He next directed his steps towards Elkingtons’ factory. “Mr. Herbert Elkington, grandson of the founder of the celebrated firm, received us with that frigid English air which so often masks – absolutely nothing at all.”⁵⁶⁶ Here M. Deiss... was allowed to see the firm’s showroom of exhibits, and then was conducted to the door.”⁵⁶⁷

⁵⁶³ See: Part III, Halévy/Watkin, 1961, pp.285-436.

⁵⁶⁴ Deiss, 1898, p.16.

⁵⁶⁵ In 1840, R.D. Best’s grandfather, R. [Robert] Best, also established his brass foundry to manufacture lamps at 10 Ludgate Hill, Birmingham. Following bankruptcy, in 1868 he formed a partnership with Harry Lloyd, styled Best & Lloyd, and established the Cambray Works in Wattville Road, Handsworth. His son, R.H. [Robert Hall] Best, continued the family business, which expanded into manufacturing gas light fittings, lamps, and chandeliers, and by the early 20th-century it was the world’s biggest lighting factory.

⁵⁶⁶ Édouard Deiss actually wrote: “So, taking a pessimistic view, I changed tactics and presented myself with the humblest countenance at the Elkington factory, where the grandson of the founder of the famous house received me with that glacial English air that often masks – absolutely nothing. When informed of the purpose of my visit, he left to consult the head of the house. A few minutes later he returned with a response that struck the same ostracizing note. I acted hard done-by. I was however permitted a view of the showroom, where one can idly kill time contemplating everything.” Deiss, 1898, p.20.

⁵⁶⁷ Best, 1940, pp.186-187.

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ILLUSTRATIONS.



1. *George Richards Elkington* (1800 – 1865), Samuel West (c.1810 – c.1867), oil on canvas, 1865, H.125.1cm x W.100.3cm, Birmingham Museums Trust, Accession number: 1969P103.

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2. "Marks Used On Wares Produced By Elkington & Co. Ltd. From The Time The Business Was Founded To The Present Day," Elkington & Co. Ltd., *Notes Of Information For Those Interested In Silver And Elkington Plate*, 1923, pp.16-17. Booklet size: H.8.6cm x W.6.2cm.



3. *Bartlett's Buildings, Holborn*, by Thomas Hosmer Shepherd (1793-1864), *circa* 1838, watercolour on paper, H.61cm x 46cm (H.55cm x W.42cm without border), private collection. Courtesy of the Wellcome Library, London.

PATENT GILDING WORKS, NEWHALL STREET, BIRMINGHAM.



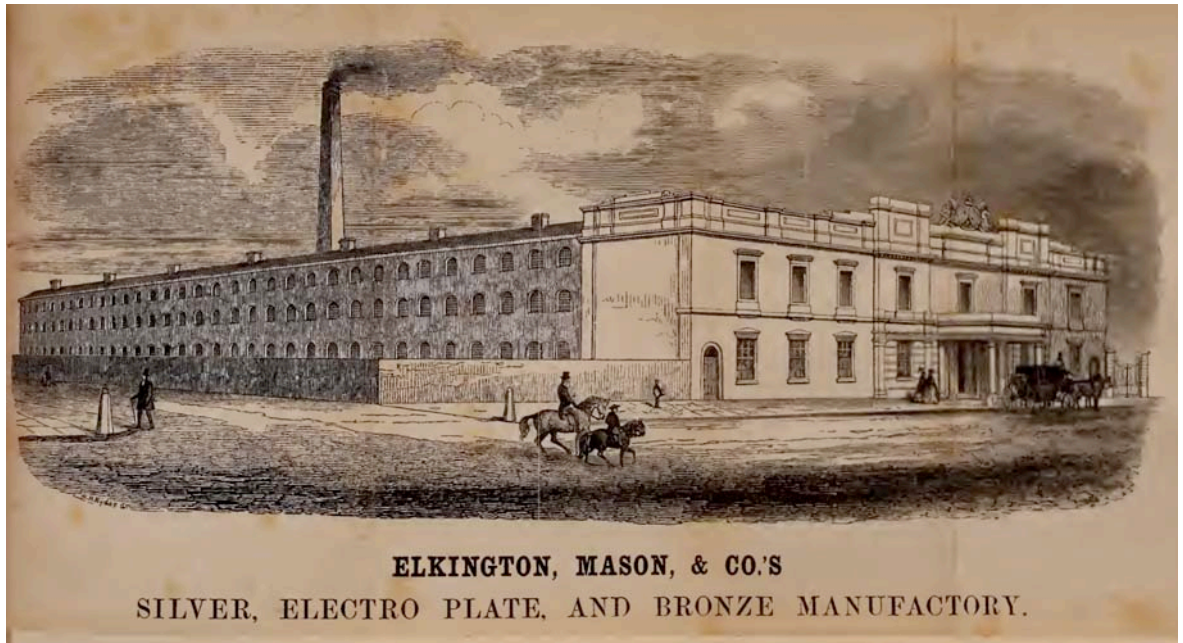
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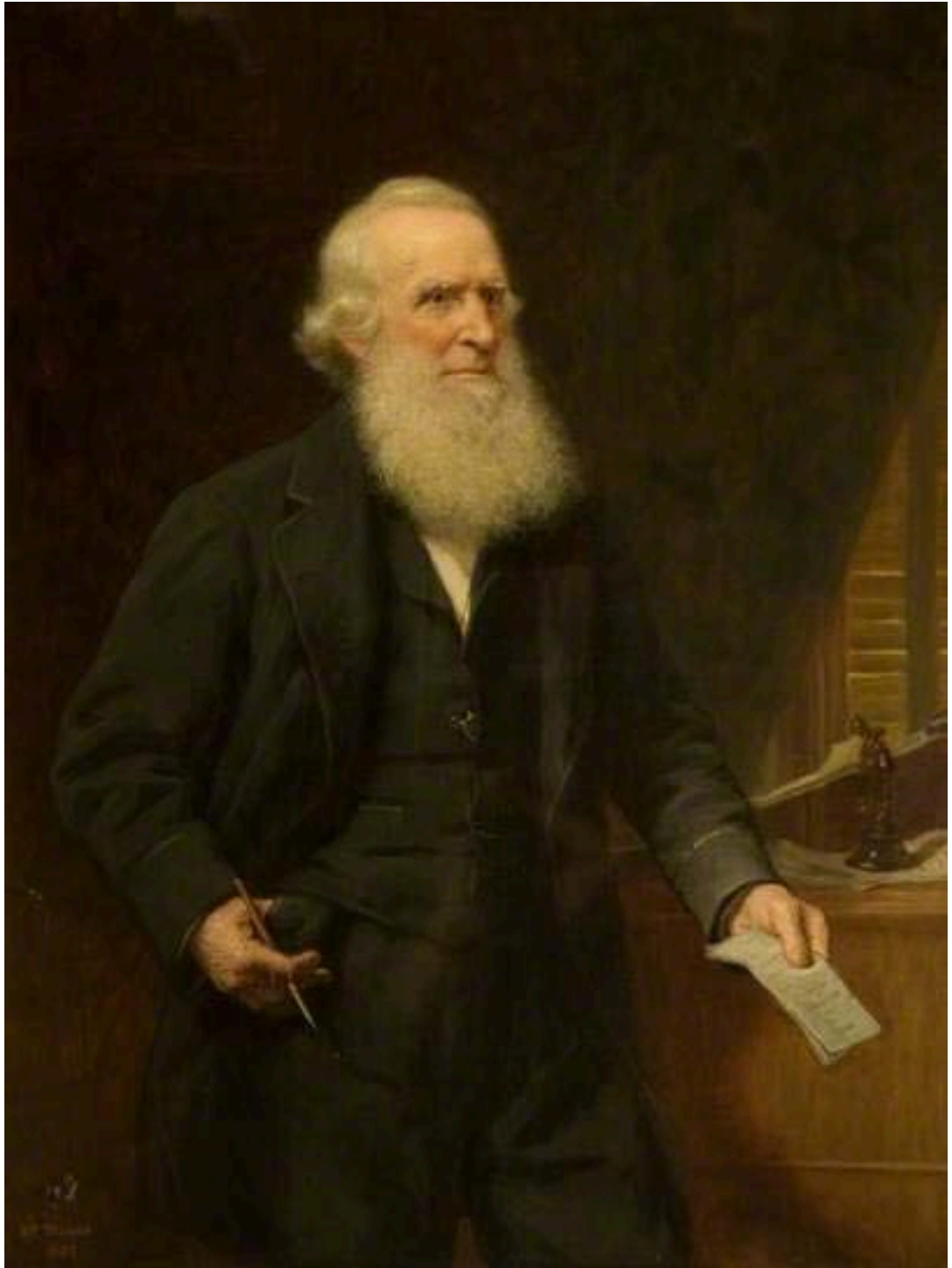
4. "G.R. ELKINGTON & CO. PATENT GILDING WORKS, NEWHALL STREET, BIRMINGHAM," *Osborne's London & Birmingham Railway Guide*, E.C. & W. Osborne, Birmingham and London, January 1840, Advertisement.



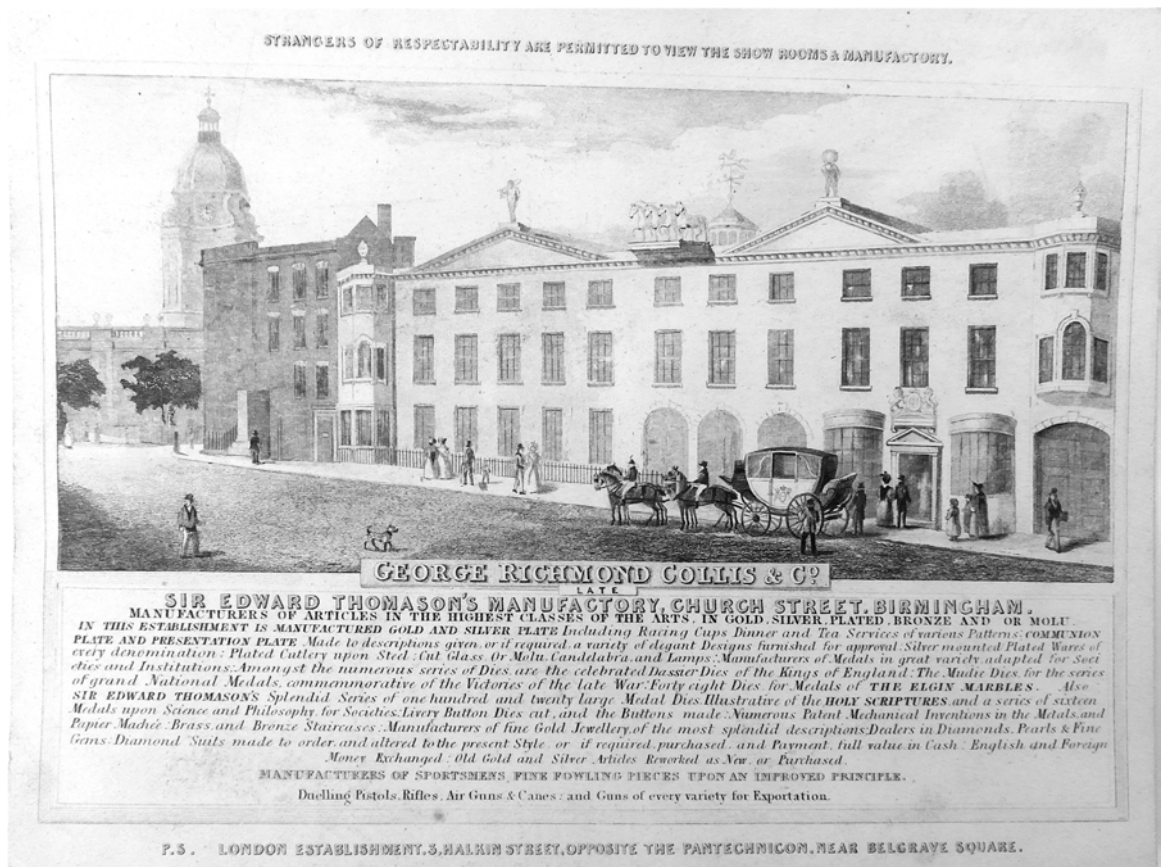
5. "ELKINGTON, MASON, & CO'S SILVER, ELECTRO PLATE, AND BRONZE MANUFACTORY," *Cornish's Stranger's Guide Through Birmingham*, Cornish Brothers, Birmingham 1851, p.80.



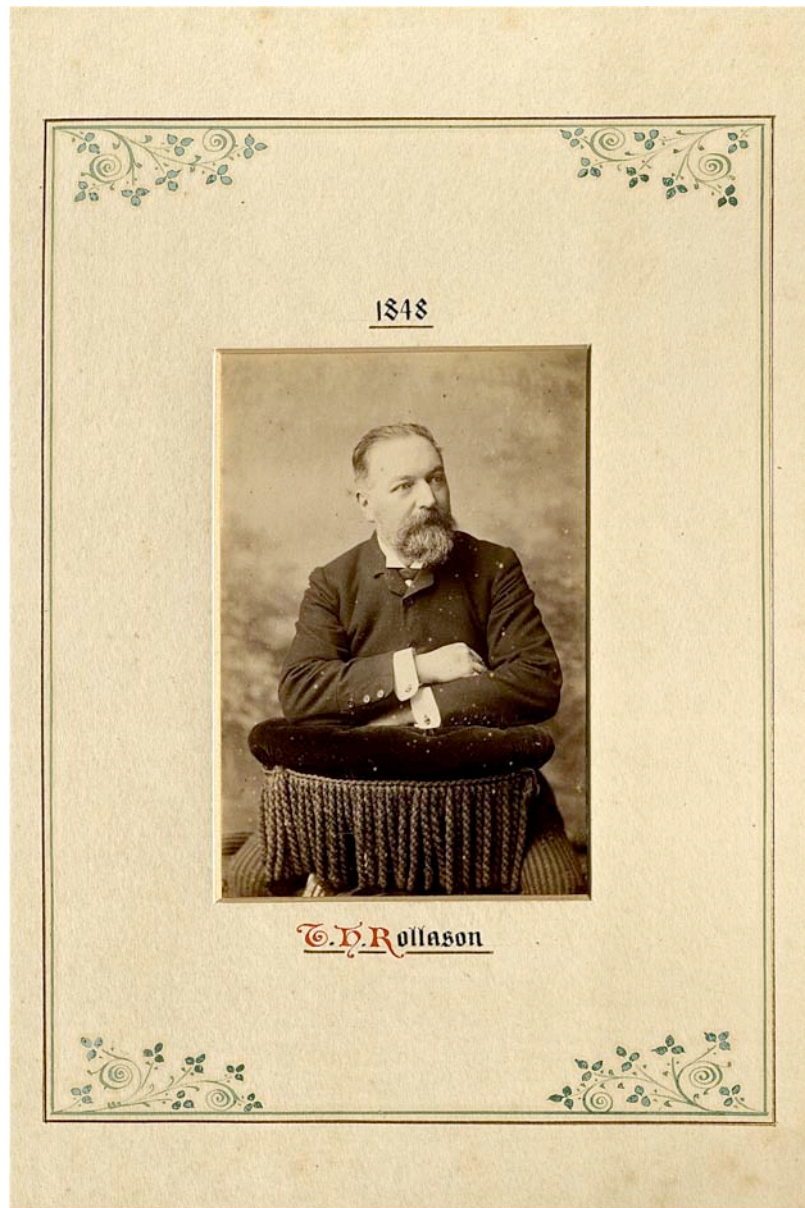
6. Phyllis Nicklin, *Newhall Street, Birmingham*, 1960, original 35mm slide held at the University of Birmingham. Image courtesy of MLA West Midlands and the University of Birmingham. <http://epapers.bham.ac.uk/556/>



7. *Portrait of Sir Josiah Mason*, 1881, Henry Turner Munns (1832-1898), oil on canvas, 140.2cm x 109.7cm, University of Birmingham Campus Collection of Fine and Decorative Art, ID number: BIRRC-A0129.



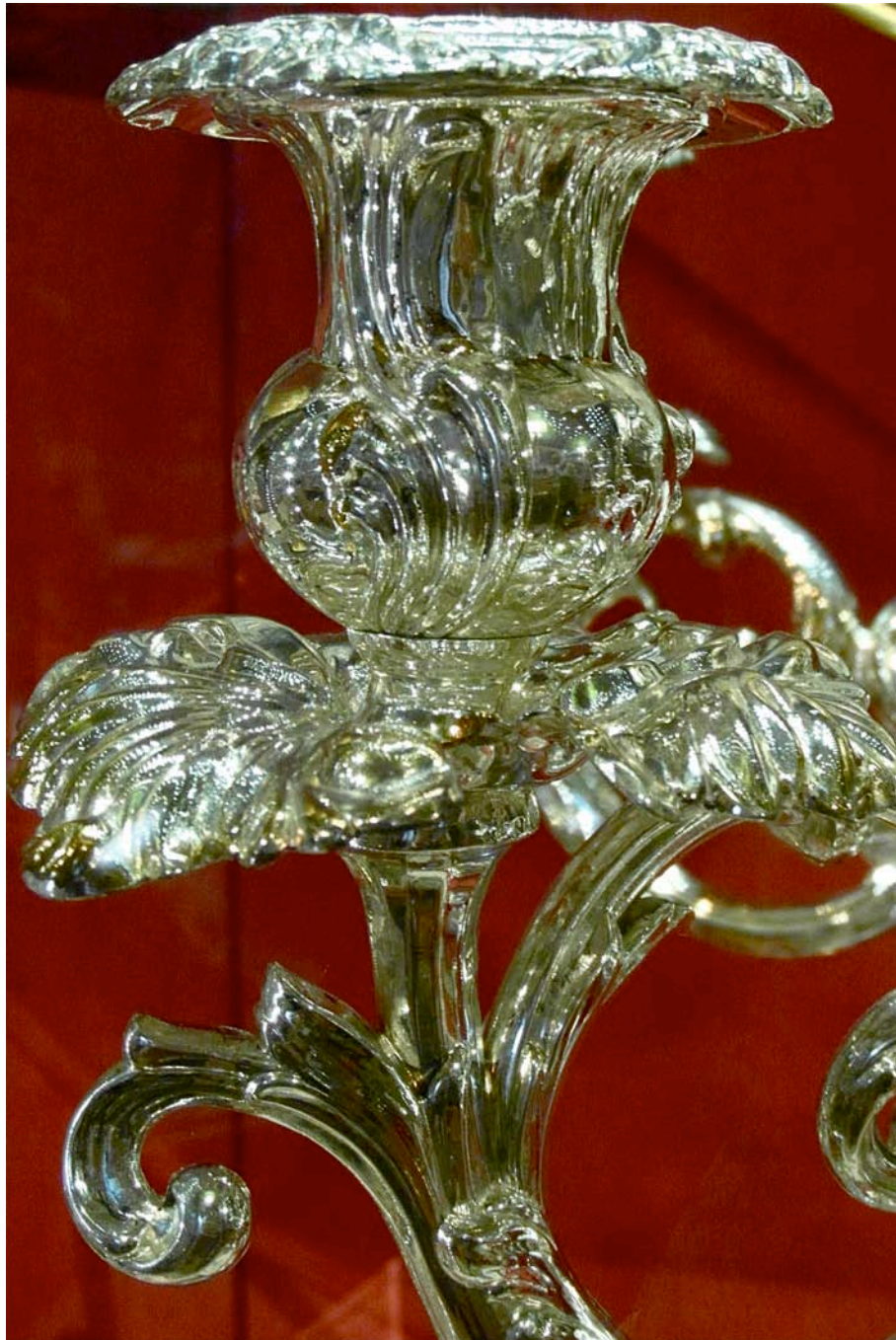
8. Trade Card of *George Richmond Collis & Co.*, Church Street, Birmingham. H.13.5cm x L.17.5cm. Courtesy of Marlborough Rare Books Ltd., London, Ref. No. 2091148.



9. "T.H. Rollason, 1848," *Address and Album*, illuminated manuscript and photograph album presented by the management of Elkington & Co. Ltd. to Hyla Elkington to mark his retirement from the directorate, Newhall Street, Birmingham, January 1900, Victoria and Albert Museum, London, AAD/2014/7, p.5. Photographer: possibly William Sherrell.



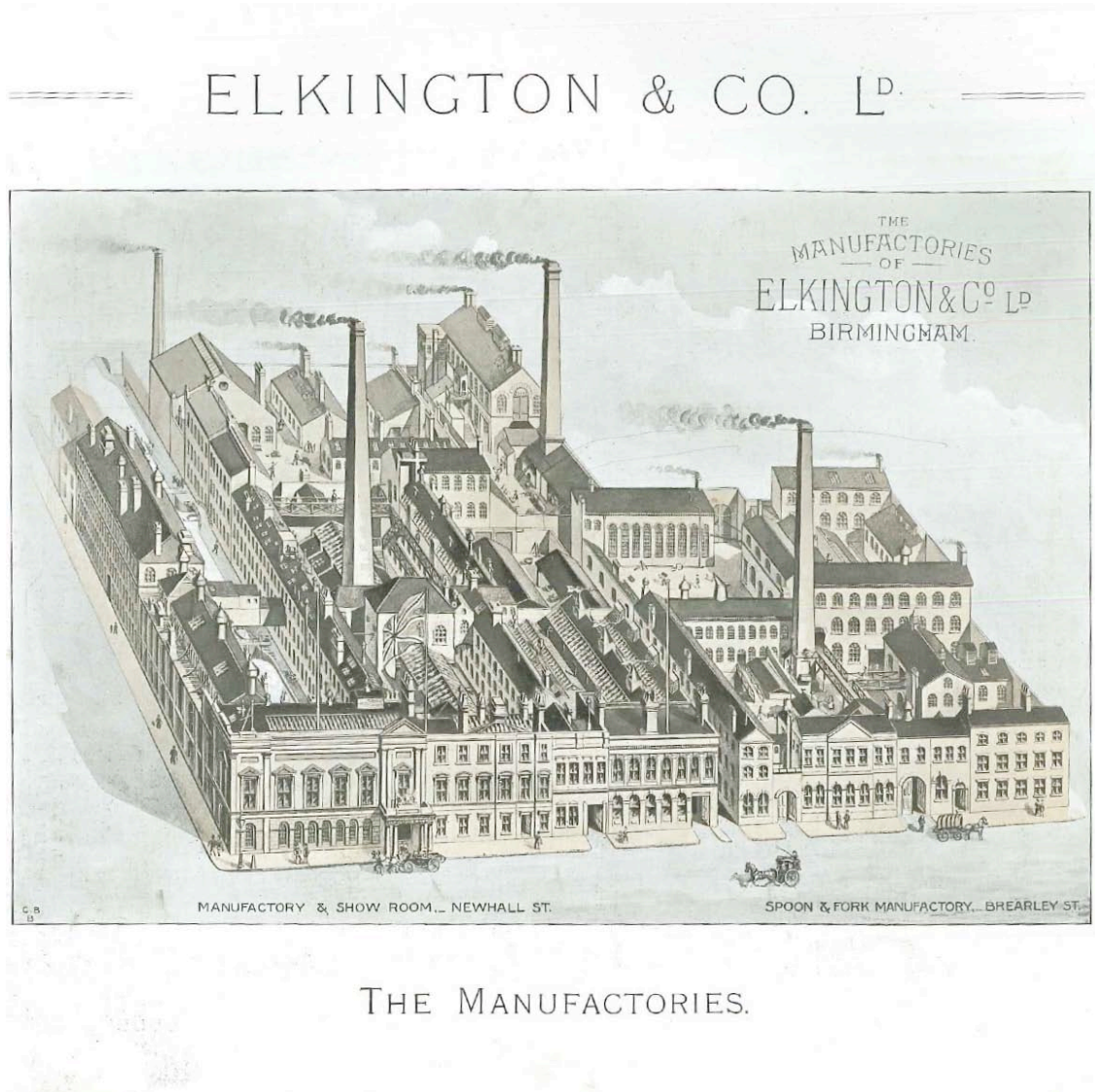
10. *Candelabrum*, T.J. and N. Creswick, *circa* 1840, electroplated nickel silver with stamped details in fused plate, H.70.2cm x L.60.3cm x W.64.5 cm. Victoria and Albert Museum, London, Museum number: M.4:1 to 13-1994.



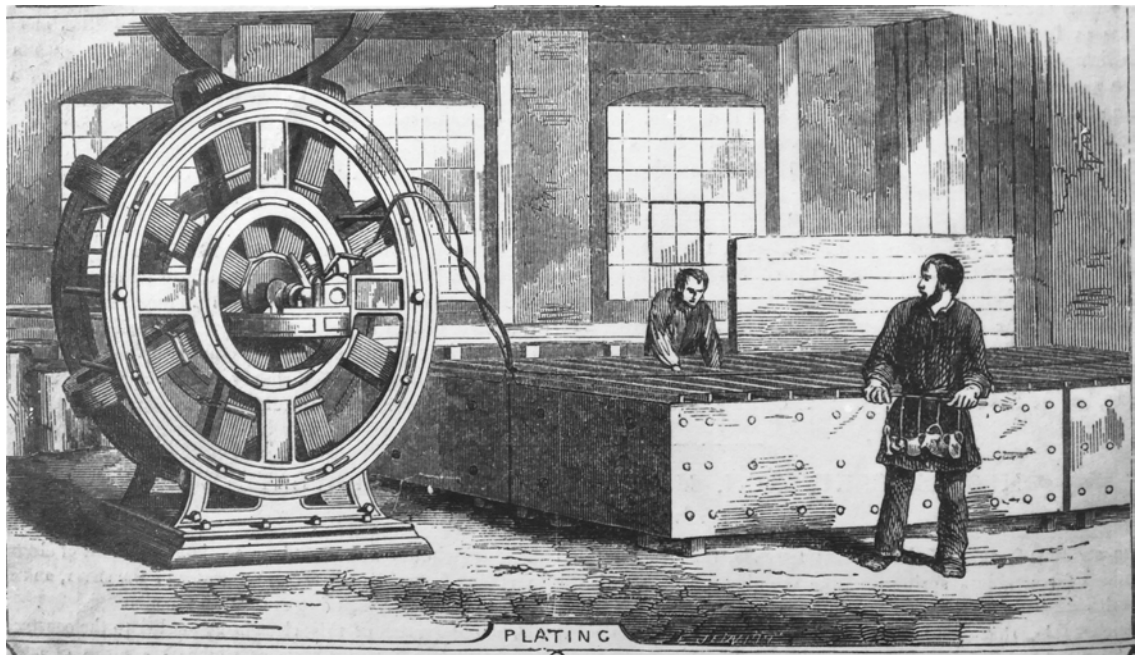
11. *Candelabrum*, T.J. and N. Creswick, *circa* 1840, electroplated nickel silver with stamped details in fused plate, H.70.2cm x L.60.3cm x W.64.5 cm. Victoria and Albert Museum, London, Museum number: M.4:1 to 13-1994.



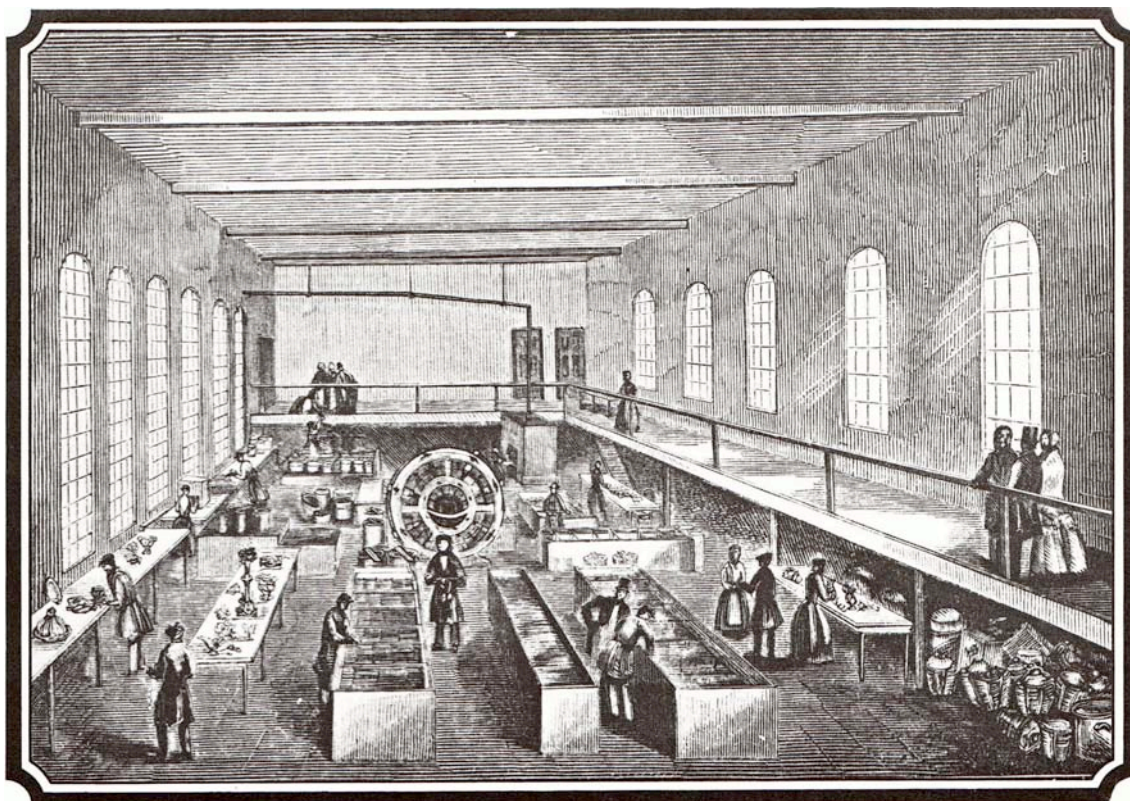
12. *Two gilt vases*, Alexander Parkes, *circa* 1841, electro-gilt copper electrotypes, Science Museum, London, Inventory number: 1970-586, Image number: 10289152.
Dimensions of smaller vase: Dia.4.3 cm x H.11.2 cm x L.6.5cm.



13. "The Manufactories," Elkington & Co. Ltd., *Catalogue of Silver and Plate*, Birmingham, circa 1905, Victoria and Albert Museum, London, National Art Library, Pressmark: TC.D.0047. Photo: Alistair Grant.



14. Elkington's Magneto-Machine, *The Illustrated Exhibitor and Magazine of Art: Collected from the Various Departments of Painting, Sculpture, Architecture, History, Biography, Art-Industry, Manufactures, Inventions and Discoveries, Local and Domestic Scenes, Ornamental Works, &c, &c.*, John Cassell, London, 1852, p.297.



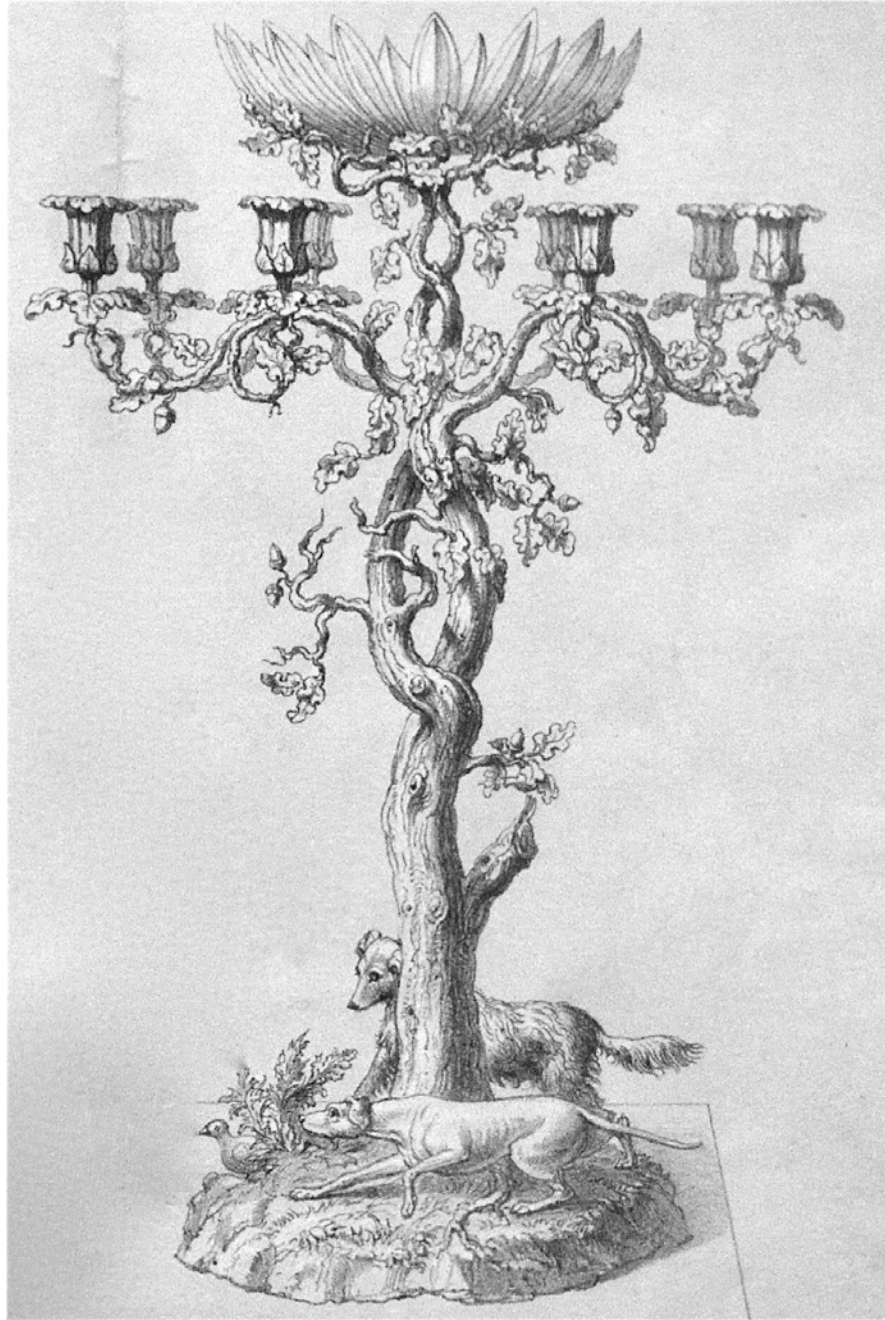
15. Elkington's Plating Shop, Newhall Street, Birmingham, James Sheridan Muspratt, *Chemistry: Theoretical, Practical & Analytical, As Applied To The Arts And Manufactures*, Volume 1, William Mackenzie, Glasgow, Edinburgh, London, and New York, 1857. Chapter on 'Electro-Metallurgy – Galvanism' p.815.



16. *Salver*, hallmarked 1810-11, Benjamin and James Smith, Raised, cast, chased, engraved and tooled silver-gilt, H.8.5 cm x Dia.30.6 cm, Weight 1900g. Rosalinde and Arthur Gilbert Collection on loan to the Victoria and Albert Museum, London, Museum No. LOAN: GILBERT.833-2008.



17. "Birmingham Exposition of Arts and Manufactures, 1849," engraving on paper, Elkington and Company Records, Victoria and Albert Museum, London, Archive of Art and Design, AAD/2003/4. Photo: Alistair Grant.



18. Detail of previous plate: *Oak Candelabrum-épergne, with Dogs and Bird*, Benjamin Smith III, Pierre-Jules Mêne (designers), Elkington & Co. (maker), 1849, Elkington and Company Records, Victoria and Albert Museum, London, Archive of Art and Design, AAD/2003/4.



19. *Eight-branch Candelabrum-Epergne with three figures, emblematic of Commerce, Fortune, and Health*, Stephen Smith and William Nicholson, silver, H.100.5cm, London, 1857.
 Photo courtesy of Christie's (Sale 7241, 12th June 2006, Lot 64.)



20. *The Triumph of Science and the Industrial Arts*, William Beattie (designer), Elkington & Co. (maker), 1851, electro-plated copper alloy? H.121.92cm, *Great Exhibition of the Works of Industry of All Nations, 1851: Official Descriptive and Illustrated Catalogue*, William Clowes and Sons, London, 1851, Plate 88*.



21. “Gold Vase, enriched with jewels and enamels, by Watherson & Brogden, dimensions unknown, Matthew Digby Wyatt, *The Industrial Arts of the Nineteenth Century. A Series of Illustrations of the Choicest Specimens Produced by Every Nation at the Great Exhibition of Works of Industry, 1851*, Day and Son, London, 1852, Plate 66.



22. Two-handled cup (*Kantharos*), Benjamin Schlick (designer) Elkington & Co. (maker), oxidized silver electrotype, Base 4.7cm x W.16.2cm x H.12.5cm, Royal Collection, London, RCIN 41368. Presented to Queen Victoria by Prince Albert, Christmas 1849. Copy of original from the Casa dell'Argenteria at Pompeii in 1835, now in the Museo Archeologico at Naples.



23. *Homer Cup*, Benjamin Schlick (designer), Elkington & Co. (maker), 1849, silver electrotype, parcel-gilt, Dia.12.22 x H.15.08 x W.13.18cm, Gallery G350, Minneapolis Institute of Arts, Museum No. 2003.1.3.



24. Left: *Ewer*, Benjamin Schlick (designer), Elkington, Mason, & Co. (maker), 1852, electrotype, electro-plated, oxidized, partially electro-gilded, Dia.12.0cm x H.29.5cm x L.16.0cm, Victoria and Albert Museum, London, Museum No. 1292A-1854. Right: François Briot, *Ewer*, 1580-1600, pewter cast in relief, H.27.9 cm, Victoria and Albert Museum, London, Museum No. 4289-1857. Photos: Angus Patterson.



25. *The Temperantia Basin*, François Briot (maker), *circa* 1585, pewter with cast reliefs, Dia.45.0cm x H.4.5cm Victoria and Albert Museum, London, Museum No. 2063-1855. Photo: Angus Patterson.

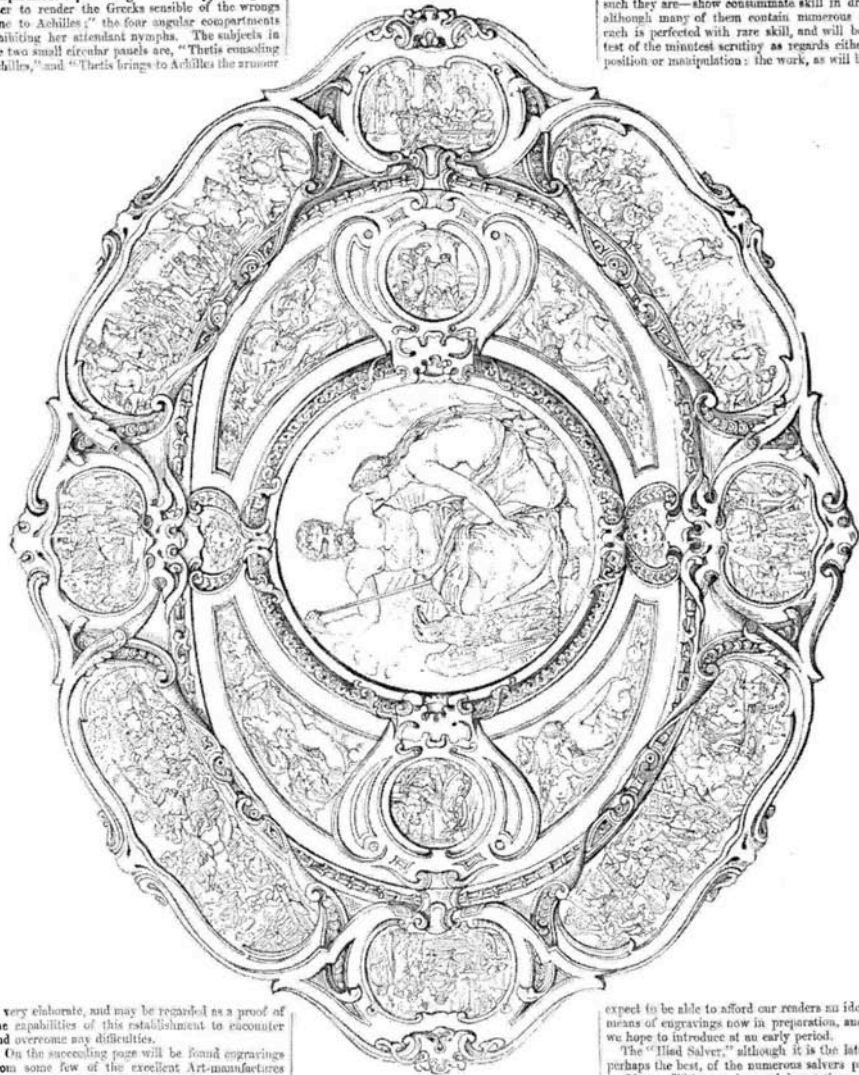


26. *Temperantia Guéridon*, Benjamin Schlick, George Clark Stanton (designers), Elkington, & Co. (maker), 1849, silver, parcel-gilt, steel, H.84.5cm x Dia.49 cm, Royal Collection, RCIN 41227. Matthew Digby Wyatt, *The Industrial Arts of the Nineteenth Century. A Series of Illustrations of the Choicest Specimens Produced by Every Nation at the Great Exhibition of Works of Industry, 1851*, Day and Son, London, 1852, Plate 74.

The "ILIAD SALVER"—of which we give an engraving on this page—is designed by Mr. Charles Grant, one of the artists employed by Messrs. Elkington, and does him infinite credit. It will be observed that the several compartments are bas-reliefs of subjects taken from the "Iliad;" the centre compartment representing "Thetis supplicating Jupiter to render the Greeks sensible of the wrongs done to Achilles;" the four angular compartments exhibiting her attendant nymphs. The subjects in the two small circular panels are, "Thetis consoling Achilles," and "Thetis brings to Achilles the armour

made by Vulcan." Of the bas-reliefs there are eight; the subjects of them are—"The Contest between Agamemnon and Achilles;" "The Heralds conducting Briseis from the tent of Achilles;" "The Greeks driven beyond their fortifications;" "Menelaus and Meriones, assisted by the Ajaxes, bearing

off the body of Patroclus to the ships;" "Achilles driving the Trojans from the intrenchments by showing himself on the walls;" "The grief of Achilles over the body of Patroclus;" "Achilles dragging the body of Hector round the walls of Troy;" "Priam soliciting from Achilles the body of his son Hector." These sculptured pictures—for such they are—show consummate skill in drawing; although many of them contain numerous figures, each is perfected with rare skill, and will bear the test of the minutest scrutiny as regards either composition or manipulation: the work, as will be seen,



THE ILIAD SALVER.

is very elaborate, and may be regarded as a proof of the capabilities of this establishment to encounter and overcome any difficulties.

On the succeeding page will be found engravings from some few of the excellent Art-manufactures to be seen in this Court; two of these engravings, the JUV and the WINE-COOLER, are not new to our readers, but they are so beautiful, and attract so much attention in the Court, that we felt it would have been unjust to the producers to omit them on the present occasion. The TANKARD, the VASE, and the FLOWER-STAND, are among the more recent contributions; they manifest the taste and superiority

of design which have gained for the artists employed by Messrs. Elkington such well-deserved credit, as well as the care and the skill which are identified with the labours of those whose duty it is to carry out the intentions of the designer. The manufacturers are at present engaged upon a variety of new works of this description, some of which we

expect to be able to afford our readers an idea of by means of engravings now in preparation, and which we hope to introduce at an early period.

The "Iliad Salver," although it is the latest, and perhaps the best, of the numerous salvers produced by Messrs. Elkington, is certainly not the only work of the kind which will interest the visitor: there are many others in the Court that will well repay close inspection; so too will the large collection of shields, vases, dishes, candelabra, statuettes, and bronzes of infinite variety, and for useful and ornamental purposes. We would particularly direct attention to the bronze groups, illustrative of

27. *Iliad Salver*, Charles Grant (artist), Elkington & Co. (makers), *The Art-Journal*, "The Crystal Palace, as a Teacher of Art and Art Manufacture, Part IV," 1st October 1856, Volume II, George Virtue, London, 1856, pp.305-8.



28. "Entrance to the Works," Newhall Street, Birmingham, *The Graphic*, "H.R.H. The Prince of Wales Visit to the Elington Factory," Saturday 7th November 1874, p.13.



29. ELECTRO CAST BY ELKINGTON & C^O., base of the portrait bust of Lord Castlereagh, Robert Stewart, 2nd Marquess of Londonderry (1769-1822), William Theed (artist), Elkington & Co. (maker), 1861, electro cast copper, Wellington College, Crowthorne, Berkshire. Photo: Alistair Grant.



30. Elkington & Co. Showroom, Newhall Street, Birmingham, colour engraving on paper, W.33cm x 24cm without border, *circa* 1855, Elkington and Company Records, AAD/2003/4, Victoria and Albert Museum, Archive of Art and Design. Photo: Alistair Grant.



31. Autogenous Soldering, George Dodd, "A Day at an Electro-Plate Factory," *The Penny Magazine of the Society for the Diffusion of Useful Knowledge*, Supplement, Volume XIII. – 3H, No. 807, Charles Knight, London, October 1844, p. 421.



32. *The Death Of Teydric Mawr*, John Evan Thomas (designer), William Meredyth Thomas (modeler), Elkington & Co. (maker), 1848-9 (plaster model), 1856 (cast), copper/copper alloy, H.167cm x L.127cm x W.63cm, Amgueddfa Cymru, Cardiff, Accession Number: NMW A 25991.

THE PEOPLE'S ILLUSTRATED JOURNAL

OF
Arts, Manufactures, Practical Science, Literature, and Social Economy.

No. X.

SATURDAY, JULY 3, 1852.

PRICE TWOPENCE.



THE DEATH OF TEWDRICH.—SCULPTURE.—BY J. G. THOMAS. (SEE PAGE 147.)

33. *The Death Of Tewdrich Mawr, The People's Illustrated Journal of Arts, Manufactures, Practical Science, Literature, and Social Economy*, No. X, Saturday 3rd July 1852, George Stinson & Co., London, 1852, cover illustration & review on p.147.



34. James Sherwood Westmacott (1823-1900), *The Peri*, 1852, ink on paper, H.18cm x W.15cm, Elkington and Company Records, AAD/1979/3/1/8, Victoria and Albert Museum, London, Archive of Art and Design. Photo: Alistair Grant.



35. *House of Lords*, Francis Godolphin Osbourne Stuart (photographer), *circa* 1870-1885, albumen print, White Collection of Architectural Photographs, Cornell University Library, Accession No. 15/5/3090.00959.



36. *Lady Jane Grey at her Studies*, William Theed (artist), Elkington & Co. (maker), 1855, H.76cm x W.78.74cm, one of the twelve relief panels depicting *Scenes from Tudor History* in the Prince's Chamber, Palace of Westminster, London. © Palace of Westminster Collection.



37. *Marshal Beresford*, William Carr Beresford, 1st Viscount Beresford (1768-1856), William Theed (artist), Elkington & Co. (maker), 1861, electro cast copper, Wellington College, Crowthorne, Berkshire. Photo: Alistair Grant.



38. *Memorial to the Exhibition of 1851*, Joseph Durham (artist), Sydney Smirke (artist), Elkington & Co. (maker), 1859-1863, electro cast copper, Royal Albert Hall, South Kensington. Photo: Philip Halling/geograph.org.uk, Ref. 396581CC.



39. *Balmoral Candelabra*, Pierre-Emile Jeannest, *circa* 1855, set of twelve, gilt and oxidized silver, with stags-horn & cairngorms, H.53.5 x W.35 x D.35 cm, commissioned by Queen Victoria, stamped: "PUBD. BY ELKINGTON MASON & CO. E. JEANNEST Fecit," Royal Collection, Ref. RCIN 15941.1-2. Photo: Alistair Grant.





40. Pierre-Emile Jeannest, *Lady Godiva*, circa 1856, silver, partly gilt, bronze, champlevé enamel, H.79.4 x W.62 x D.42.5 cm, Royal Collection, Ref. RCIN 1571. Photo: Alistair Grant.



41. Pierre-Emile Jeannest, *Lady Godiva* (detail), *circa* 1856, silver, partly gilt, bronze, champlevé enamel, H.79.4cm x W.62cm x D.42.5cm, Royal Collection, Ref. RCIN 1571. Photo: Alistair Grant.



42. *Graeco-Pompeian Wine Coolers (pair)*, Auguste Adolphe Willms (designer), Elkington & Co. (maker), 1862, silver, parcel-gilt and champlevé enamel, H.31cm, Matthew Barton Ltd., London, Sale: MB191113, Tuesday 19th November 2013, Lot Number 0236.



43. Wilhelm Zahn, *Die schönsten Ornamente und merkwürdigsten Gemälde aus Pompeji, Herculenum und Stabiae*, G. Reimer, Berlin, 3 Volumes: Volume 1, 1828-29; Volume 2, 1842-44, Volume 3, 1852-59. Published in Britain as *The Most Beautiful Ornaments and the Most Notable Pictures from Pompeii, Herculaneum and Stabia*.



44. *Græco-Pompeian Dessert Service* by Auguste Willms illustrated in J.B. Waring, *Masterpieces of Industrial Art & Sculpture at the International Exhibition 1862*, Volume III, Day & Son, London, 1863, Plate 211.



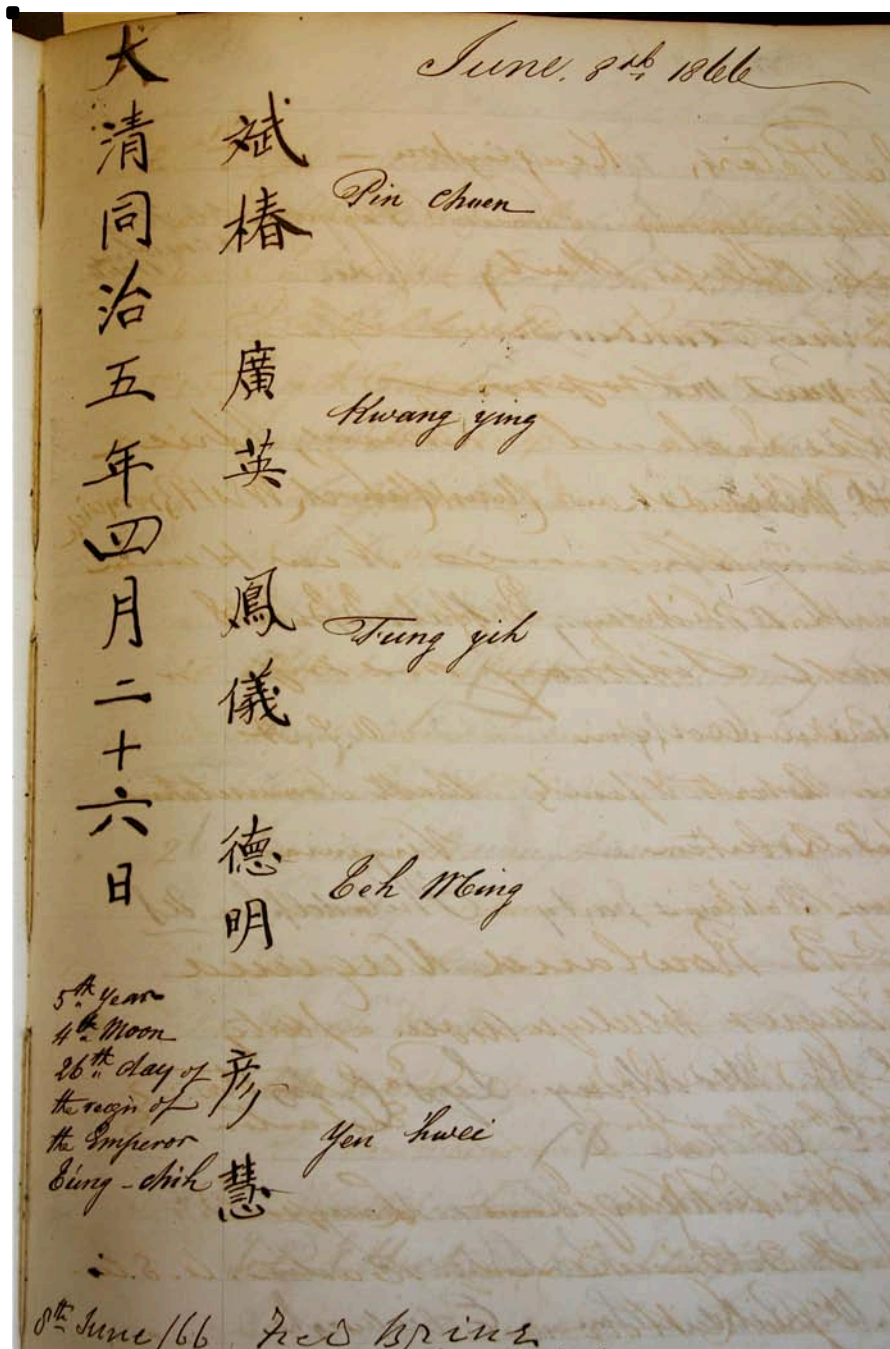
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45. Elkington & Co.'s Enameling Studio at Newhall Street, Birmingham, *The Graphic*,
"H.R.H. The Prince of Wales Visit to the Elkington Factory," Saturday 7th
November 1874, p.13.



46. "The Japanese Ambassadors," *Elkington & Co. Visitors' Book: Containing Names and Addresses of Visitors to the Birmingham Showrooms, 1860-1867*, National Art Library, Special Collections, Manuscript MSL/1971/707-709, Pressmark: 86.NN.32, p.31 reverse. Photograph below: Public domain.

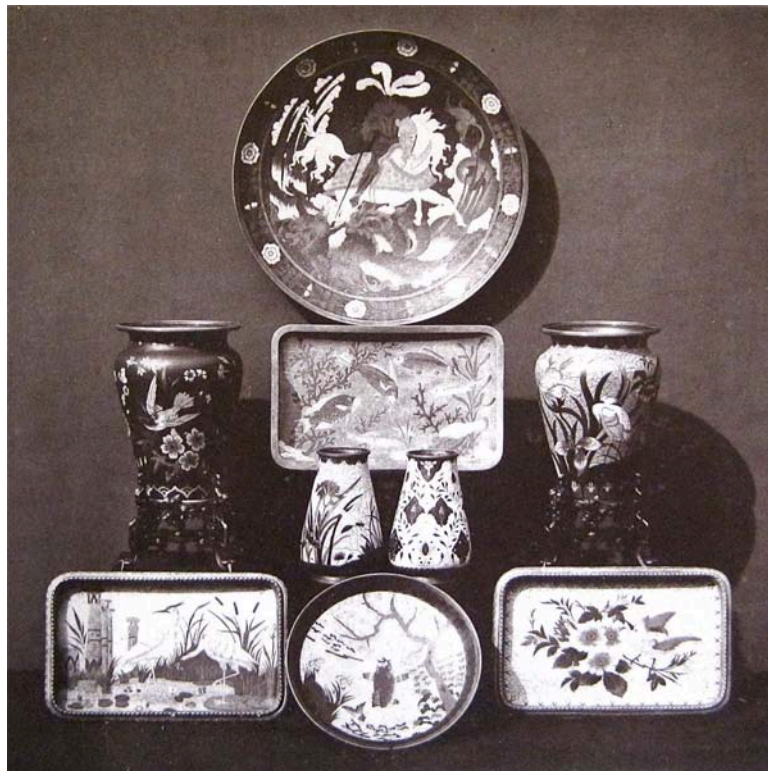




47. The Chinese Ambassadors,” *Elkington & Co. Visitors’ Book: Containing Names and Addresses of Visitors to the Birmingham Showrooms, 1860-1867*, National Art Library, Special Collections, Manuscript MSL/1971/707-709, Pressmark: 86.NN.32, p.113.



48. Above: Champlevé. Below: Cloisonné. *Universal Exhibition Vienna 1873: Illustrations of Art Manufactures in the Precious Metals Exhibited by Elkington & Co.*, National Art Library, London, Pressmark: 210.O.16.





49. Auguste Willms (artist), Sutton Sharpe & Co. (chromolithographers),
 “Philadelphia Centennial & International Exhibition 1876: Elkington’s Cloisonné
 Enamels,” *The Art-Journal*, New Series, Volume XV, Virtue & Co., London,
 January-December 1876.

ELKINGTON & CO. L^D.



SHOW ROOMS AT ST. ANN'S SQUARE, MANCHESTER.

50. Above: Elkington & Co. Ltd., Trade Catalogue, Archive of Art & Design, c.1900-1919, National Art Library, London, Pressmark: 738.2380294ELK. Below: *Vases*, Elkington & Co., 1876, cloisonné enamel on gilt copper, H.71cm, photograph courtesy of Paul Martin at Robin Martin Antiques.





51. *Vase (one of a pair)*, Elkington & Co., 1870-1880, cloisonné enamel on gilt copper, H.14cm x D.9.5cm, Victoria and Albert Museum, London, Museum Refs. 1276-1886 and 1276A-1886. Photo: Angus Patterson.



52. *Le Crépuscule – Twilight* and *L'Aurore – Dawn*, Léonard Morel-Ladeuil for Elkington & Co., 1859, silver repoussé, dimensions unknown, photographic plates in Léon Morel, *L'œuvre de Morel-Ladeuil, sculpteur-ciseleur, 1820-1888*, A. Lahure, Paris, 1904, Pl. I. A et B.



53. *The Milton Shield*, Léonard Morel-Ladeuil for Elkington & Co., 1867, silver repoussé, oxidized, damascened iron, H.87.6cm x W.67.3cm, Victoria and Albert Museum, London, Museum Ref. 546-1868. Photo: Alistair Grant.



54. *The Bunyan Shield*, Léonard Morel-Ladeuil for Elkington & Co., 1878, silver repoussé, oxidized, damascened iron, dimensions approx. H.87cm x W.67cm (i.e. approx. the same as *The Milton Shield*), current whereabouts unknown.



55. *The Battle of the Amazons*, Antoine Vechte (artist), Elkington & Co. (maker), Matthew Digby Wyatt, *The Industrial Arts of the Nineteenth Century. A Series of Illustrations of the Choicest Specimens Produced by Every Nation at The Great Exhibition of Works of Industry*, Day and Son, London, 1851, Plate CXXXVIII.



56. *Vase du Paradis perdu dit aussi de la Création*, Antoine Vechte, 1848-1861, silver repoussé, H.93cm x L.38cm, musée du Louvre, Paris, N° d'inventaire OA2612, Photo: Martine Beck-Coppola/Musée du Louvre/RMN-Grand Palais.



57. *The Milton Shield* (detail of central medallion), Léonard Morel-Ladeuil for Elkington & Co., 1867, silver repoussé, oxidized, damascened iron, H.87.6cm x W.67.3cm, Victoria and Albert Museum, London, Museum Ref. 546-1868. Photo: Alistair Grant.



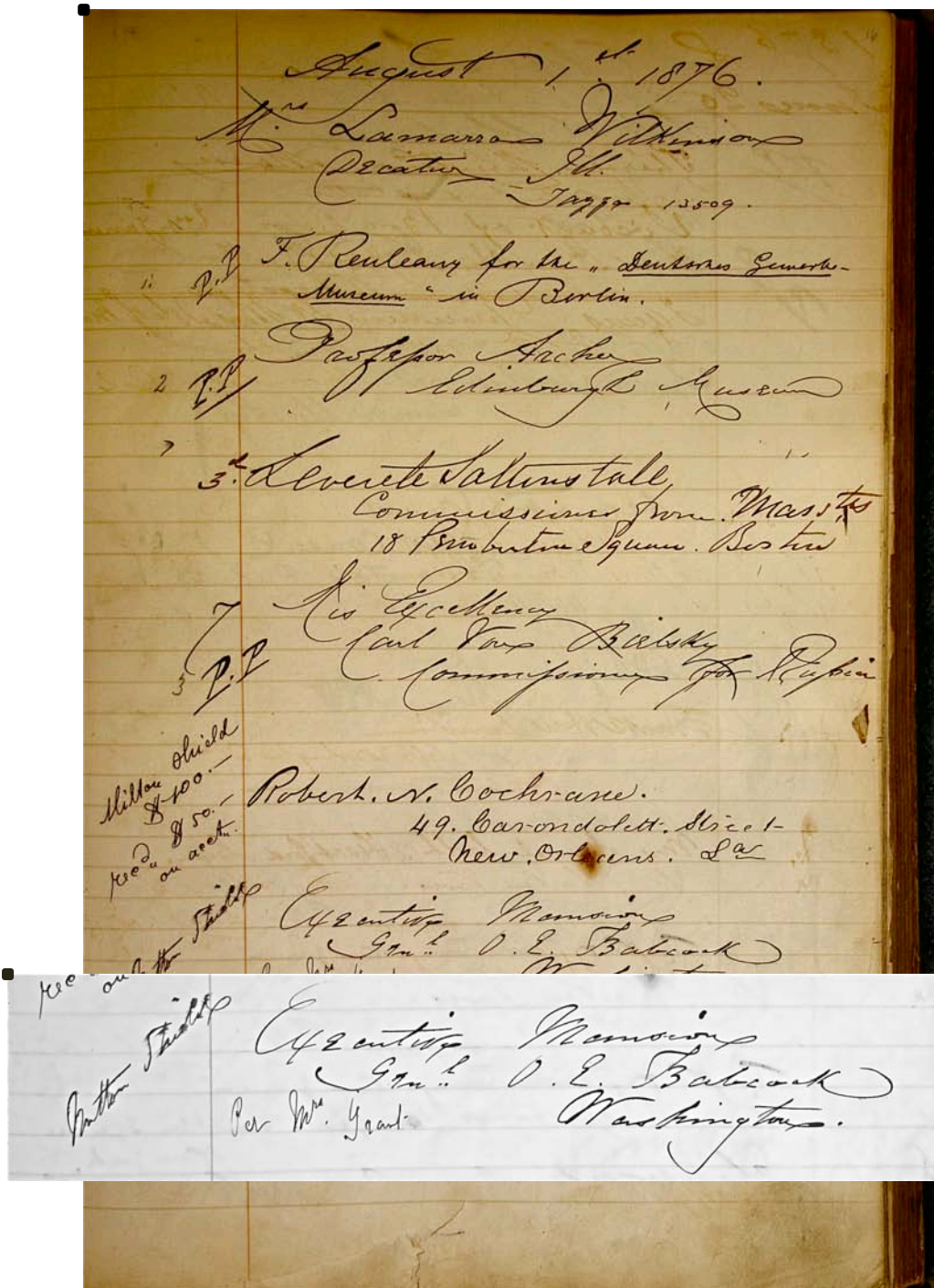
58. *The Milton Shield* (detail: Fall of the Rebel Angels), Léonard Morel-Ladeuil for Elkington & Co., 1867, silver repoussé, oxidized, damascened iron, H.87.6cm x W.67.3cm, Victoria and Albert Museum, London, Museum Ref. 546-1868. Photo: Alistair Grant.

Milton
Shield.

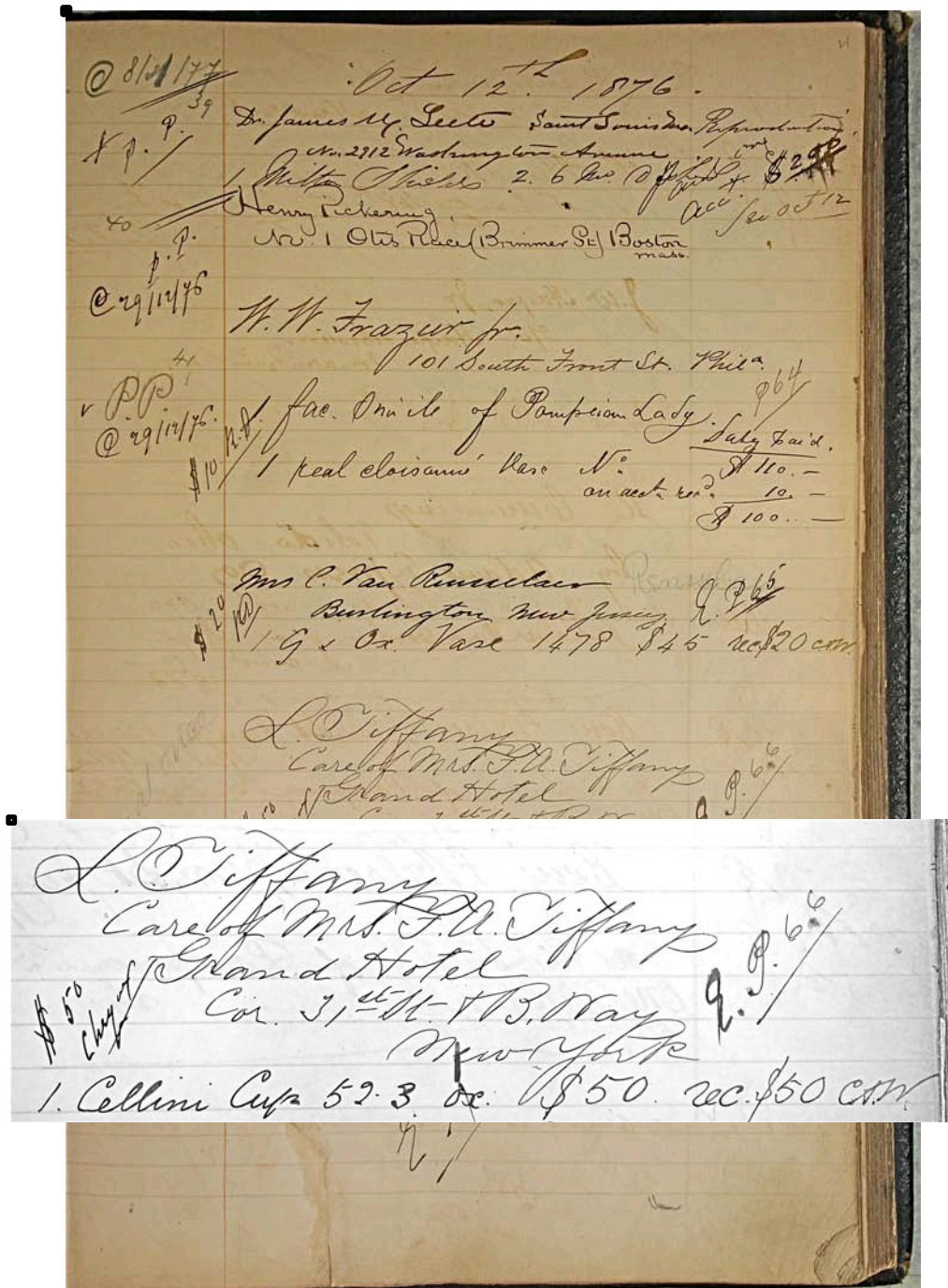
'68.-138. SHIELD; illustrations from Milton's *Paradise Lost*. In the central medallion the Archangel Raphael recounting to Adam and Eve the defeat of the rebel angels; in the other divisions the events of the contest; and below the Archangel Michael vanquishing Satan and the figures of Sin and Death. Above may be seen, among other objects, the signs of the Zodiac. The original was exhibited by Messrs. Elkinington and Co. at the Paris Exhibition of 1867, and is now in the South Kensington Museum, No. 546-'68. Designed by M. Morel-Ladeuil. Modern English. H. 2 ft. 10½ in. W. 2 ft. 2½ in. *Messrs. Elkinington and Co.*

Price, Bronze	-	-	-	-	5 <i>l.</i> 15 <i>s.</i> 6 <i>d.</i>
„	Do.	silver and oxydised,	A. quality	9 <i>l.</i> 9 <i>s.</i> 0 <i>d.</i>	
„	Do.	do.	B. quality	6 <i>l.</i> 16 <i>s.</i> 6 <i>d.</i>	
„	Do.	do.	, with bands		
		gilt where damascened in the			
		original, A. quality	-	-	12 <i>l.</i> 12 <i>s.</i> 0 <i>d.</i>
„	Do.	the same, B. quality	-	-	7 <i>l.</i> 17 <i>s.</i> 6 <i>d.</i>
„	Do.	entirely gilt, A. quality	-	-	18 <i>l.</i> 18 <i>s.</i> 0 <i>d.</i>
„	Do.	do. B. quality	-	-	12 <i>l.</i> 12 <i>s.</i> 0 <i>d.</i>

59. *Inventory of the Electrotpe Reproductions of Objects of Art Selected from the South Kensington Museum, Continental Museums, and Various Other Public and Private Collections*, George E. Eyre and William Spottiswoode, London 1869, p.56.



60. "For Mrs. Grant," Elkington & Co., *Visitors' Book: Containing Names and Addresses of Visitors, Together With Some Orders and Prices at the International Exhibitions in Paris in 1855 and 1878, Vienna in 1873, and Philadelphia in 1876.* National Art Library, Special Collections, Manuscript MSL/1971/707-709, Pressmark: 86.NN.33, p.16.



61. "L.C. Tiffany," Elkington & Co., *Visitors' Book: Containing Names and Addresses of Visitors, Together With Some Orders and Prices at the International Exhibitions in Paris in 1855 and 1878, Vienna in 1873, and Philadelphia in 1876.* National Art Library, Special Collections, Manuscript MSL/1971/707-709, Pressmark: 86.NN.33, p.21.



62. An electrotype of *The Milton Shield* in the second floor Oval Library, now known as the Yellow Oval Room, in the White House during President Benjamin Harrison's time in office, *circa* 1898. Photo: Library of Congress.



63. E&C^o Uncrowned, *circa* 1896: "Note. The use of the Crown as part of a trade Mark was discontinued in 1896 owing to the action of the Sheffield Assay Office," Elkington & Co. Ltd., *Notes Of Information For Those Interested In Silver And Elkington Plate*, 1923, p.21. Booklet size: H.8.6cm x W.6.2cm.



64. "ELECTRO DEPOSITED & PUBLISHED BY ELKINGTON MASON & C^o OCT^R 1852" Electroformed copper casket with cast legs, mounts and finial, gilded metal key, designed and modelled by Pierre-Emile Jeannest for Elkington, Mason, and Co., 1852, copper and gold, H.14.9 cm x L.21.0 cm x D.13.7 cm, V&A, London, Museum No. 1298-1854. Photos: Angus Patterson.

