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Swansea and Nantgarw Porcelains

A Scientific Reappraisal

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Cover illustration: Nantgarw porcelain dessert plate, impressed NANT-GARW C. W., from a service commissioned by the Prince Regent later King George IV, for his younger brother, Adolphus, Duke of Cambridge, on the occasion of his marriage in 1818 to Princess Augusta of Hesse-Cassel. Private Collection.

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Foreword

This book provides a timely survey of the output of the two Welsh porcelain factories at Swansea and Nantgarw which were operational in the second and third decades of the nineteenth century, between about 1814 and 1823. The linking theme of William Billingsley and his efforts to make and decorate porcelain of the highest quality and translucency is explored from his apprenticeship at the Derby China Works in 1771 and his ascendancy at Derby until his departure in 1795, moving on to Pinxton, thence to Mansfield, Brampton-in-Torksey, Worcester, Nantgarw, Swansea, and Nantgarw again and thence finally to Coalport, where he died alone in 1828. The holistic approach adopted in this book brings together the historical documentation from the first account of William Turner in 1897 and scientific analyses that have been carried out on ceramic products of Swansea and Nantgarw from the first efforts of Eccles and Rackham in 1922 until the most recent analytical chemical literature in 1999. The author, a well-respected analytical chemical spectroscopist who has been researching at the arts/science interface on artworks and archaeological artefacts, has published extensively in this field in the scientific literature in collaboration with museum scientists, conservators, art historians and archaeologists. He is particularly suited to a scientific approach to the verification of several questions and statements that have been proposed in earlier texts and an evaluation of the conclusions.

The compilation of a list of "named services" has been undertaken for each factory using historical documentary information about their origins, which is of an inestimable importance for both Nantgarw and Swansea identification since the original factory pattern or workbooks are no longer extant. Scientific explanations are proposed for the famous Nantgarw clarity and translucency, the Swansea duck-egg body colouration and the iridescence of Nantgarw items supplied in the white for enamelling at the London workshops. Finally, some protocols for the characterisation of potential Swansea and Nantgarw porcelains are proposed which will assist in the vetting of unknown items.

It has been an immense pleasure to have discussed the intricacies and pitfalls involved with the characterisation and attribution of Derby, Swansea and Nantgarw porcelains with the author for almost 50 years, and I can fully endorse

the scholarship evident in writing this book which provides a significant advance in the knowledge that we have for the appreciation and preservation of these precious works of ceramic art.

Harrogate, North Yorkshire, UK Bryan Bowden
August 2016

Author and Bryan Bowden at the William Billingsley Exhibition, York Antiques Fair, July 2016, arranged by Dr. Morgan Denyer. Both the author and Bryan Bowden have collaborated for a total of 100 man-years on the evaluation of Derby, Nantgarw and Swansea porcelains and have roots near Nantgarw—Bryan Bowden was born within a few miles of the Nantgarw China Works—Howell Edwards' paternal home is Pontypridd, a few miles up the valley from Nantgarw (and William Edwards, architect of the bridge over the River Taff at Pontypridd in 1756, is an ancestor)

Preface

This book represents the culmination of almost fifty years of the appreciation of and research into the products of the two Welsh porcelain factories at Swansea and Nantgarw, which started in the early nineteenth century and existed for only about ten years intermittently before their closure in the early 1820s. During this short time, they produced some of the finest porcelain ever seen, superbly decorated and gilded, and set the gold standard for ceramic art for many years to come. The brainchild of the enterprise was the enigmatic and restlessly energetic William Billingsley, who started his apprenticeship at the Derby China Works in 1774, thence moving to Pinxton, Mansfield, Brampton-in-Torksey, Worcester, Nantgarw, Swansea, and Nantgarw again and finally Coalport. His ambition was the creation of the most highly translucent and beautiful soft-paste porcelain through empirical experimentation which could act as the perfect vehicle for displaying his enamelling and decorative artistry. He was eventually successful in his venture, but this could be achieved only at the expense of exceptionally high kiln losses and resulting economic non-viability in a highly competitive arena despite an almost insatiable desirability for its ownership by Regency society and aristocratic patrons.

Born in Skewen, near Swansea, his maternal birthplace and with a paternal birthplace in Pontypridd near the Nantgarw China Works site, the author became interested in these local ceramics from an early age, and in later life, his analytical scientific expertise applied to cultural heritage problems fuelled a desire to examine further the literature and science which existed on the Swansea and Nantgarw porcelains. The earliest dedicated record of the history of these factories appeared in a book researched by William Turner in the 1880s and published in 1897, which contained much important information gleaned from people who had actually worked at the two factories. This was followed by the seminal works of E. Morton Nance and Dr. William John which appeared in the 1940s and 1950s; these later studies highlighted several incongruities and misinterpretations that had been made seemingly through the acceptance of erroneous assumptions and the dismissal of critical evidence for apparently superfluous reasons. Later works by Elis Jenkins and by Sir Leslie Joseph and Jimmy Jones in the 1970s and 1980s aimed

at correcting some of these for the Swansea China Works, but it was clear that a timely scientific reappraisal on holistic grounds was now needed for both factories. This would necessitate a survey being undertaken of the growth and development of the factories at Swansea and Nantgarw, the identification of the artistic and commercial personalities involved, who by the very nature of their employment in the ceramics industry were peripatetic, and in particular an historical study of the key figure, William Billingsley, and his associates and family members during this time. A reassessment of the scientific analytical conclusions on Swansea and Nantgarw porcelain paste composition was published in diverse papers and journals from the earliest by Herbert Eccles and Bernard Rackham undertaken on specimens in the Victoria & Albert Museum Collection in 1922 up to the latest of Victor Owen and colleagues in 1999 was also reviewed as part of this process. Because of the itinerant nature of ceramic artists in the late eighteenth and early nineteenth centuries, this survey could obviously not be conducted in isolation from relevant information pertaining to other contemporary and competitive China factories, especially those at Derby, Worcester and Coalport.

A novel aspect of this book is the research and identification into the so-called named porcelain services from Swansea and Nantgarw to facilitate their correct attribution and chronological placement: a task that has always been difficult because of the absence of factory pattern books at both Swansea and Nantgarw China Works and the availability of only limited work notes of experimental paste compositions and diary entries made by Lewis Weston Dillwyn in particular at Swansea. A novel protocol proposed here for the identification of unknown or suspected Welsh porcelains from the application of analytical scientific criteria is tested for nine different cases and is seen to be a useful screening process for the potential attribution of unknown porcelains to either Swansea or Nantgarw. Research into the chemical origins of the translucency of Swansea and Nantgarw porcelains and that of the iridescence observed on London decorated and fired Nantgarw porcelain are also described, both of which assist in the identification of genuine Swansea and Nantgarw porcelain pieces. The discovery of a long-lost Nantgarw service and research into an early Swansea glassy porcelain tea service with William Billingsley's handwritten descriptors are also described in detail—the former was derived from the use of historical information, and the latter from a graphological analysis demonstrate the necessity of adoption of the holistic approach that underlies the theme of this book.

The author would like to record his grateful thanks and appreciation to several friends and colleagues who have provided many hours of detailed discussion of artworks generally, pigments especially, and historical analysis in pursuit of this project before it even attained its final textual form: to Prof. Peter Vandenabeele (University of Ghent), Prof. Philippe Colomban (University of Pierre et Marie Curie, Paris) and, in particular, Mr. Bryan Bowden (Harrogate), who provided an early stimulus for the author's interest in Welsh porcelain. He would also like to thank Mr. Peter Frost-Pennington (Muncaster Castle, Ravenglass, Cumbria), Dr. Roger Phillips (Skipton, North Yorkshire) and Mr. Guy Fawkes (Farnley Hall,

Otley, North Yorkshire) for their kind access to porcelain in their collections; and Dr. Morgan Denyer for his discussions on the theme of William Billingsley and his lifetime quest to achieve the perfect porcelain.

Finally, the author most sincerely acknowledges his wife, Gillian, and daughter Katharine for their support and encouragement, and this book is dedicated to them.

Saltaire, UK
September 2016

Howell G. M. Edwards

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Prologue: The Origins of Porcelain

Although the first evidence of clay modelling occurs in the Palaeolithic era (~30,000 BCE), the use of fire to achieve temperatures above 600 °C to produce hard pottery artefacts occurred considerably later in the Neolithic era, around 15,000 BCE; there is but a sole record of a clay figurine which appears to have been fired found in Dolni Vestonice in the Czech Republic dating from about 25,000 years BCE. The first archaeological evidence of the regular manufacture and widespread use of fired pottery is attributed to the Catal Huyuk civilisation in Turkey around 6500 BCE. Even later, glassy beads and glazed pieces appeared around 3000 BCE and paved the way for the production of coloured glass artefacts in ~2500 BCE in Egypt and Mesopotamia for which firing temperatures of 900–1000 °C were required (Colomban, 2013; Kingery, 1984–1986). Around this time, the first synthetic glassy pigment was made, a calcium copper silicate of formula $CaCuSi_4O_{10}$, called *Egyptian blue* or cuprorivaite. Between 2000 and 1000 BCE in China, prototype Shang porcelains were made using firing temperatures of from 950 to 1200 °C (Kingery, 1984–1986); these were not true porcelains, however, and gave way to a glazed creamware in the Han Dynasty (206 BCE–220 CE), which then developed into the true Chinese porcelains which started to appear during the Sui (581–681 CE), Tang (618–907 CE) and Song (960–1279 CE) Chinese dynasties and thereafter utilising newly discovered high temperature firing technologies to produce, firstly, pure white porcelains and then innovative coloured porcelains in blue, white, green and red colours (Temple, 2007).

At a similar time, Islamic potters discovered a technique for the production of an opaque terracotta-based ceramic, much used in tiles, which was fired at lower temperatures using lead oxide (massicot) and tin oxide (cassiterite) glazes (Colomban, 2013) which led to the Italian majolica industry centred on Florence in the fourteenth century and French faience made at Rouen and Lyons in the fifteenth and sixteenth centuries. The first successful attempts to simulate the blue-and-white decorated Chinese porcelains then being exported to Europe were made in Anatolia with the Ottoman Iznik wares in 1450 and in Italy with the Medici porcelains in 1575 (Colomban et al. 2004); however, by that stage, these rather early European

examples were in competition with the highly developed and much esteemed Ming Dynasty (1368–1644 CE) Chinese porcelains which were being turned out in huge quantities in the large, high temperature Hangzhou dragon kilns. It is recorded that in these kilns up to 25,000 items of porcelain could be fired at the same time to temperatures of 1400 °C; the output, decorated in a characteristic cobalt blue and white, was very desirable and was first brought to Europe by Portuguese carracks from their colony in Macao in 1557 and by the Dutch Honourable East India Company from 1598. Attempts to imitate this Ming porcelain in the Netherlands gave rise to the well-known tin-glazed earthenware from Antwerp and Delft in the sixteenth and seventeenth centuries, which could not compete with the Chinese porcelain for translucency and fine potting. It is reasonable to assume that the failure of European porcelain manufacturers to compete with the Ming Dynasty porcelains arose from a lack of understanding of the composition of the Chinese porcelains, which was jealously guarded in China, and the general non-availability of kaolin to Western potters at that time.

In 1664, therefore, King Louis XIV of France tried to stimulate the creation of European porcelain in competition with Ming porcelain, consequent upon the ending of the Ming Dynasty some twenty years earlier, but early attempts were unsuccessful until the pottery at St. Cloud eventually achieved the manufacture of a soft-paste (*pate tendre*) porcelain in 1695 (Ricciardi et al. 2006). This discovery really kick-started European endeavours to produce porcelain in the early eighteenth century, and factories were established at Meissen in 1708 and Vienna in 1718 and at Chantilly (1725), Vincennes (1740), Tournai (1751), Mennecy (1748) and Sevres (1756/1766) over the next 40 years. Many authorities recognise that the first practical and successful European porcelain factory was Meissen, through the activities of Ehrenfried Walther von Tschirnhaus and his protégé Johann Bottger, whose earlier experiments in firing a mixture of imported kaolin and alabaster in Colditz under the patronage of Augustus, Elector of Saxony, bore fruit in 1709/1710 with the establishment of a factory, first at Dresden and then finally at Meissen. The porcelains from these factories are generally termed *hard paste* on account of their kaolin content, matching that of the true Chinese porcelain of the early eighth century Song Dynasty and later sixteenth century Ming Dynasty wares. Meissen was also the first European factory to successfully produce the Kakiemon-style ware, a milky white porcelain from Kyushu in Japan started in 1644 and imported by the Dutch East India Company to Europe as a competitor for Chinese porcelain wares.

However, although several of these early factories did make hard paste, alumina-rich porcelain using kaolin (china clay), and continued to do so for many years, several also experimented with the alternative *soft-paste* porcelain body, such as the factories at St. Cloud and Chantilly (1725): an interesting variation is noticed with Sevres, which started its production of a soft-paste porcelain in 1756 with the removal of the Vincennes (1740) factory there but reverted to a *hard-paste* body in 1766, retaining this body medium thereafter. A *soft-paste* porcelain mixture replaces the kaolin with a glass frit (powdered, finely ground, lead glass)

which resulted thereby in a reduction of the kiln firing temperatures from 1400 to 1100 °C. The chemical composition of the two porcelain bodies is of course very distinct—the *hard-paste* body containing kaolin, sand, feldspar and chalk is rich in alumina and mullite, whereas the *soft-paste* body containing glass frit, sand and chalk is rich in sodium and calcium, containing lead from the glass frit, and is low in alumina from the absence of the kaolin component.

At this time, the earliest English porcelain factories were established using the *soft-paste* porcelain body first at Chelsea (1743) based on the St. Cloud recipe, Bow (1745), Bristol (1748), Derby (1750/1757),Worcester (1751), Lowestoft (1757), Wedgwood (1759) and Spode (1767) with others following at Liverpool, New Hall and Caughley in the 1770s and 1780s. The discovery of deposits of kaolin in Cornwall in the extreme south-west of England by William Cookworthy, and the establishment of his Plymouth factory in 1768, allowed the manufacture of a true *hard-paste* porcelain body in England for the first time using the Chinese formulaic recipe containing both kaolin and chinastone (*petuntse*).

In 1749, Thomas Frye took out a patent on the use of bone ash in the porcelain body to aid fusion, to increase the transparency of the fired porcelain and to achieve a lowering of kiln firing temperatures to about 1100–1150 °C. The more widespread commercial adaptation of the addition of calcined and ground bone ash (usually obtained from boiled cow bones) to the paste mixture to make "bone china", whereby artefacts could be potted more thinly in resemblance of the fine Chinese "eggshell" hard-paste transparent porcelain with which the Western factories were in competition, was delayed actually until near the turn of the century in 1800 when it was ably utilised by Josiah Spode, whose name became synonymous with *bone china*. The achievement of finer potting allied with strength and durability both in the kiln during the firing process and afterwards in household usage was always being keenly sought by porcelain manufacturers; a high translucency was very desirable as a means to display the fine quality enamelling and ceramics artistry in colours. Alongside this objective, the achievement of fine gilding and its burnishing must not go unrecognised as this not only complemented the artistic coloured enamelling decoration but also was an expensive component of the finished article. Gilding was initially undertaken using applied gold leaf applied to the porcelain item using honey, the so-called honey gilding, which could then be burned off in the kiln: a later modification consisted of the application of an amalgam of gold, the mercury being volatilised in the kiln during the final firing process. Although mostly specialists, in several cases, well-known ceramic artists were also highly accomplished gilders, as exemplified in the Derby porcelain factory lists: it was clear that excellent quality, burnished gilding enhanced significantly the presentation of the artwork and the commercial desirability of the porcelain end product.

The quest for superior translucency in fine porcelain was one which was addressed by manufacturers but was rarely achieved despite much empirical experimentation with compositional changes in paste and kiln firing conditions—and this would often be accomplished usually at the expense of large kiln losses

through distortion of the shape of the artefacts in the firing process. In this respect, the design of the kilns and the control of kiln firing temperatures were critical and of paramount importance as a few degrees elevation in temperature could destroy the whole batch of porcelain items being fired, with disastrous results for the economic viability of the factory: the dragon kilns of the later Ming Dynasty, whose porcelain was famed globally, contained several thousand items in each firing batch at an operating kiln temperature of close to 1400 °C. Kiln design to ensure an even exposure of batch items to the heating gradient, the timing of each firing process over periods in excess of 24 h and the control of the temperature gradients operating in the kilns meant that kiln makers and masters were key personnel in the porcelain factories. The evidence of incorrect kiln construction and operation in the manufactories is to be found near the factories, where modern industrial archaeological excavation reveals large sites of "wasters", which are unfinished, fired but unglazed porcelain items smashed as being rendered unsuitable for sale through sagging or warping, therefore representing a significant loss in material goods for the factories concerned. After enamelling, a coating of lead oxide glaze or "slip" would be given to the painted article and this would again be fired, but at lower temperatures in a glost kiln. Finally, the gilding and burnishing would be applied to the decorated fired article, and a further, heating process would take place.

In some cases, large porcelain manufactories would have agents or outlets in major cities where commissions would be taken—in these instances, the retailers would frequently take the highest quality porcelain output from the factories in the white, i.e. undecorated, and then have the decoration and gilding applied to order in their own enamelling ateliers and workshops. Often, pieces that were judged to not be suitable for external sale or decoration through blemishes or sagging would be sold locally after decoration and gilding was carried out at the factory concerned. In other factories, such as Derby, the decoration and gilding was invariably carried out locally at the factory, although orders and commissions were taken by their London agents, such as Joseph Lygo.

In this book, we shall often refer to porcelain bodies, kiln wastage and the all-important enamelling and gilding: the overriding theme is the quest for superior excellence in porcelain body translucency for the display of ceramic artistry and decorative skills in the early nineteenth century. The two small porcelain manufactories of Swansea and Nantgarw discussed here exemplify the trials and hardship experienced in the pursuit and achievement of this objective, which unfortunately could only be realised with an uneconomical production through excessive kiln wastage exacerbated by the inability to supply enough quality porcelain which just could not meet an almost insatiable demand when kiln losses of up to 90% were being experienced regularly at the Nantgarw manufactory. The research carried out here has been accomplished using a holistic approach, whereby the historical background to the establishment of the two factories, the personnel involved and their personal interactions and skills have all been considered and examined alongside all the available scientific analyses and conclusions made therefrom during

the past century. Earlier historical accounts of the factories written on the basis of apparently credible and irrefutable statements provided by relatives of people who actually worked there have been dissected and examined forensically and matched with source material available elsewhere—in some cases, these statements have been shown to be suspect or at least of questionable veracity, whilst other statements which have been rejected and neglected for superficial reasons by previous investigators and writers are cogently argued for reinstatement, re-examination and proper consideration. Although it may be thought that these two factories, Nantgarw and Swansea, which operated only for a few years in the first quarter of the nineteenth century cannot be compared historically with their big brothers and competitors such as those at Derby, Worcester, Sevres and Meissen, the knowledge gained from a detailed and thorough holistic appreciation offers a novel insight into the operations of two linked manufactories operating during one of the most unsettled and yet vibrant times in European history, encompassing the era of the pan-European Napoleonic Wars, the dawn and influence of the Industrial Revolution, the Age of Exploration, the Expansion of Empires and the Age of Enlightenment. In Swansea and Nantgarw porcelain, we can see the epitome of ceramics production, the creation of some of the finest porcelain ever made anywhere and the consequences of an economic non-viability which eventually brought about the closure of the factories : despite their operation for only very few years, details of the empirical experimentation undertaken in the pursuit of excellence provide a fascinating insight into the human vision and determination for the quest of perfection in ceramic artistry—and the personal achievement and tragedy surrounding the enigmatic key player, William Billingsley.

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Chapter 1
Introduction and Present-Day Scenario

Abstract Early literature relating to the Swansea and Nantgarw porcelain manufactories is reviewed and placed in context: several inconsistencies are indicated which demand a review and reappraisal. The scientific analytical work is mentioned and reasons given for the necessity of adoption of a holistic approach which considers detailed historical, documentary and scientific data taken together to elucidate and re-evaluate existing statements for credibility and acceptance.

Keywords Ceramics · Swansea · Nantgarw · Holistic approach · William Billingsley · Documentary evaluation · Artist and decorators

The Swansea and Nantgarw porcelain manufactories were established during the first quarter of the 19th Century and they immediately acquired the reputation for the production of china of the finest quality which rivalled that of the best European manufactories such as Sevres. However, despite an almost inexhaustible demand for their wares locally and through their London retailers they never achieved economic viability and in the space of less than ten years they were forced to close down; during this period, it is estimated that an actual output production was achieved in a space of only two to three years operation. Although several authoritative books have been written exclusively about Welsh pottery or porcelain, commencing with that of William Turner's, *The Ceramics of Swansea and Nantgarw*, published in 1897 and followed by E. Morton Nance's, *The Pottery and Porcelain of Swansea and Nantgarw*, published in 1942, the continuation of interest among collectors of these porcelains and museum historians demands a reappraisal of much of the sometimes apocryphal evidence with which they have been associated. The perpetuation of some of the earlier statements, made with apparently good authority, about the products of the Swansea and Nantgarw porcelain factories and their artistic decoration now do not stand up to a rigorous examination. Such unsubstantiated "evidence" which has been recorded as being absolutely and unquestionably indicative of chronology, porcelain body and glaze compositions and artistic endeavour that it has subsumed the absence of the factory pattern and workbooks which have been so material in the attribution and

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historical provenancing of the porcelains of their contemporary rivals such as Sevres and Derby. Other classic texts, especially those of W. D. John (*Nantgarw Porcelain*, 1948; *Swansea Porcelain*, 1958; *William Billingsley*, 1968) and W. D. John et al. (*The Nantgarw Porcelain Album*, 1975) have broadly addressed the topic and are supported by primary monographs such as those of Rowland Williams (*Nantgarw Porcelain,* 1813–1822, 1813), Isaac Williams (*The Nantgarw Pottery and its Products: An Examination of the Site*, 1932) and by secondary catalogues of major museum collections such as those of Kildare Meager (*Swansea and Nantgarw Potteries*; *Catalogue of the collection of Welsh Pottery and Porcelain on Exhibition at the Glynn Vivian Art Gallery, Swansea*, 1949; *Glamorgan Historian*, 1965) and John Bunt (*Swansea and Nantgarw Porcelain from the Clyne Castle Collection*, 1970). The little monograph of Elis Jenkins entitled *Swansea Porcelain* and published in 1970 provides a concise and scholarly history of the Swansea porcelain manufactory and the personalities involved in its inception and eventual demise which has been dubbed "*the only authoritative short account available including the significance of the mysterious curtain-raiser at Nantgarw*" (E. Jenkins, *Swansea Porcelain*, 1970). In his article, Jenkins draws on much discussion from the previous accounts described above and mentions the first *Catalogue of Loan Exhibitions in The Glynn Vivian Art Gallery, Swansea*, of June 1914, which was the centennial anniversary of the very first production of porcelain at Swansea in 1814, where some 500 pieces of Swansea porcelain and pottery were assembled for the first time in the one location.

However, even then, some apocryphal and erroneous statements were being made entirely without verification or substantiation, such as those made in an introductory article to the *Catalogue* entitled "*Ceramics in Wales*" by Frederick Lichfield, a well-respected authority on European porcelain and exemplified by the following seemingly rather nonsensical remark: "The *greater part of the more highly and ambitiously decorated Swansea China was sent to London …. where the mark is Nantgarw impressed*". The ongoing conjectural subject of whether or not any Nantgarw porcelain was made and/or decorated at Swansea by local artists will be raised later in this book. The same *Catalogue* also includes an early statement from Herbert Eccles, who some 8 years later would publish the first results of the chemical analysis of Welsh porcelains and others in the Victoria and Albert Museum collection, prefacing his discussion with the note that it was necessary to destroy a perfect example of an extremely rare plate from the *Bevington-Gibbins* service of Swansea porcelain to achieve the analytical chemical objective.

From such inauspicious beginnings a folklore was generated which now is timely to re-examine and appraise in a true forensic cultural heritage context: Jenkins (*Swansea Porcelain*, 1970) realises that several key questions still require informed answers such as—how much (if any) Nantgarw recipe porcelain was made at Swansea, did William Billingsley actually paint all that has been ascribed to him, how much porcelain did the Bevingtons make from Lewis Dillwyn's recipes, how many variants in porcelain body composition did Samuel Walker try out besides the three accepted versions of glassy, trident and duck's egg translucency, who actually painted what piece and were there a Colclough, De Junic and David

Evans in artistic residence at Swansea? Jenkins noted a prevalence of what he termed significant misty evasion, sheer guesswork and the use of phraseology such as "perhaps", "doubtless one can assume" and "it would appear that", which commonly affected the earlier accounts of Swansea porcelain, and Nantgarw, which have not really been addressed in a scientific manner since.

This study is, thus, not intended to provide just a particular facet of historical ceramics research into what may appear superficially to be two rather minor factories which only existed for a small number of years in Napoleonic and immediate post-Napoleonic Europe but has a much wider implication generally in the scientific provenancing of art works and for research into the preservation of ceramic items of cultural heritage. For example, the ongoing investigation into the *Voynich* manuscript (Kennedy and Churchill, *The Voynich Manscript*, 2004) illustrates how an investigator can be drawn into blind alleys by assuming one salient feature at the outcome which is apparently factually advanced at the outset but is actually unsubstantiated and which thereby, through being accorded undue and unwarranted importance and credibility, has distorted much subsequent and unbiased scientific and historical study. It is, therefore, illustrative to consider this case study in some detail here. In 1912, Wilfrid Voynich, a rare book dealer, announced that he had discovered an extremely rare manuscript which he purported to be an original work of Roger Bacon in the 13th Century, written in a totally unknown language and cipher, and illustrated with many strange herbal, medical, botanical and alchemical figures and diagrams. Professor William Newbold (Newbold, *The Cipher of Roger Bacon*, 1928) spent the next two decades attempting to decipher the text solely on the premiss that it was written by Roger Bacon and by using Baconesque plain text to crack the "code" he claimed to have achieved decipherment, but his methodology and results were later proved flawed—nevertheless, the deceptive seed was sown and many eschatologists still believe that this manuscript originated from Bacon, without any substantive evidence whatsoever to support this idea apart from Voynich's original belief that he had discovered something of unique importance by the hand of Bacon. This manuscript still remains untranslated and even though its original attribution to Bacon (Brumbaugh, *The World's Most Mysterious Manuscript: The Voynich "Roger Bacon" Cipher Manuscript*, 1977) has now been effectively side-lined the enigma remains (D'Imperio, *The Voynich Manuscript: An Elegant Enigma*, 1978) as testament to how a fallacious assumption in the minds of the original investigators for what seemingly was a valid reason can totally distort a strict forensic and unbiased scientific approach being adopted in the course of any subsequent studies. It must be realised, of course, that in the 1920s, at the time of our early case study of the *Voynich Manuscript* forensic science was truly in its infancy—the first forensic science laboratory was set up in France by Professor Edmond Locard in Lyons just prior to the First World War, but it really took until the 1930s before the acceptance of scientific evidence in courts of law saw the establishment of laboratories more widely across the world. Nevertheless, this case does serve as an illustration of how the acceptance of an unsubstantiated piece of "evidence", more correctly perhaps in retrospect termed a "tentative belief" by an expert, can totally prevent the true

placement of an artefact in its historical context. During the course of this present study, we shall, therefore, examine similar statements and re-assign them to material evidential categories or otherwise downgrade them.

The objective of the current study addresses what is definitively known about the Nantgarw and Swansea porcelain factories, wherever possible evaluating the documentary evidence and existing historical provenancing, as required from a *forensic art* investigative point of view. In this context the reappraisal of evidential material forensically will seek to address particularly the following questions: how was it made, who painted it, when and where was it painted and made, who commissioned it, and what happened to it after its initial manufacture and purchase? A further parameter is a rather more investigative one: is a porcelain service all what it seems to be or does it have some replacement or non-standard items sourced elsewhere originally—and this is where the realm of non-destructive chemical analysis can possibly be enforced to identify the presence of associated or fake items in an otherwise seemingly genuine product? In particular, the consideration and compilation of a list of specified commissions called "*named services*" which operate within the strict boundaries of chronology, artistic palette and porcelain composition has been accomplished here for the first time. Unlike other contemporary china manufactories, such as Derby, Worcester and Sevres, the factory Pattern Books and sales records for Swansea and Nantgarw are lost, if they ever even existed, and this is a moot point in itself—hence, it has always been difficult for ceramics historians to correlate the artistic decoration and gilding with porcelain body compositional changes for the attribution of painters for these two factories. Nantgarw never recorded pattern numbers on its porcelain wares but Swansea did do this for selected items in a tea, dessert or dinner service; even so, less than 10%, representing only some 67 recorded pattern numbers (Jones & Joseph, *Swansea Porcelain*, 1988), have thus far been identified and associated with the decoration out of a total of potentially some 705 differently numbered porcelain pieces accounted for in the Swansea repertoire.

Therefore, an important part of this work is the exploration of the historical documentation and conclusions made therefrom in previous articles and books on Swansea and Nantgarw porcelains, whilst compiling a list of identified important named services for the first time which can be recognised, which represent a definitive reference body according to current knowledge and which will form a database for future expansion. This can be further substantiated and added to as further information becomes available for examination. During this exercise it has become apparent that several items have been misattributed and that others still remain unidentified: the importance of scientific chemical or spectroscopic analysis in the characterisation of porcelain bodies is paramount and an evaluation is made here of the available results obtained to date alongside the historical appreciation—areas where caution in the interpretation of the available evidence must be maintained are highlighted and suggestions made for future advances which will contribute towards the identification of fake and associated items whose presence hitherto has only been suspected until now. Scientific explanations are also proposed for the characteristic duck-egg translucency of the finest Swansea porcelain

and also for the curious observation of iridescence on the London-enamelled Nantgarw porcelains. Finally, an essential part of the assimilation of data about the important named services has required the detailed description or, wherever possible without the infringement of copyright and the sensitivity of current private ownership, the provision of a colour photograph will be made for selected examples which will assist historical researchers, museum ceramics curators, custodians of cultural heritage and collectors in their identification of the porcelain items discussed: a list has also been made of porcelain services from these factories whose production in the early 19th Century has been hinted at in historic documentation but otherwise have now been lost for historical study. It is to be hoped that the present study will stimulate the identification of some of these lost works of art which probably still exist somewhere as unknown quantities at this moment in time.

A classic example of an unsubstantiated statement referred to above which was based on an expert opinion that was expressed without any real evidential support was made by an early and respected researcher of Nantgarw porcelain, Robert Drane, who wrote in Turner (*Ceramics of Swansea and Nantgarw*, 1897) that the porcelain still in local family ownership must all have been purchased locally and can therefore be attributed to the artistic hand of William Billingsley This error was compounded by a further statement that Thomas Pardoe's work was deemed to be significantly inferior in quality and thus he could not be ascribed to any quality painting on fine Nantgarw porcelains. Unfortunately, these totally incorrect misattributions have been made without any direct evidence and have been formalised and accepted for decades, although their incorrectness is now apparent. It is true that nowadays Pardoe's work is held rightly in much higher esteem, which somewhat redresses the balance of these earlier negative comments, but the allegorical thesis that Billingsley was responsible for all the best painting on Nantgarw porcelain completely ignores the extensive output from the London ateliers and retailers such as Mortlocks, who are documented to have taken some 90% or more of the output of the Nantgarw factory in the white for decoration in their own enamelling shops for immediate purchase by the aristocracy and society. It is, of course, true that services were purchased and decorated locally—and that William Billingsley did make a valuable contribution to this output, but so did Thomas Pardoe, particularly in the second phase of production and before the eventual closure of the factory in 1823 after Billingsley departed from Nantgarw in 1819. Another incorrect and particular attribution made by Robert Drane, supported by William Turner (*The Ceramics of Swansea and Nantgarw*, 1897), of two superbly decorated cabinet cups and saucers in the Clyne Castle Collection as Swansea porcelain decorated by William Billingsley are illustrated in Plates IX and XI of John Bunt's pamphlet of the 1971 Exhibition at the Glynn Vivian Art Gallery, Swansea, where they have now been definitively identified as Thomas Pardoe decorated Nantgarw porcelain, almost unique and of an exceptionally high and desirable quality!

Such statements, which really can be better now described as educated, but sometimes ill-informed, opinions rather than evidence, which have stood perhaps unchallenged and which have been accepted apocryphally in a non-forensic metier

for some while now need to be addressed critically and scientifically. Dr. W. D. John certainly set out to do this in his early books on Nantgarw and Swansea porcelains (W. D. John, *Nantgarw Porcelain*, 1948; *Swansea Porcelain*, 1958) In this process, of course, the clarification of an unsubstantiated statement will often expose further research issues and result in other problems being identified which may require information about the geographic location or whereabouts of some of the key figures identified in the course of pursuing this research Hence, a scientific art evaluation cannot he conducted in isolation and must also involve the associated historical research into the movements of the main characters—the illumination of this interface between the artistic history, provenancing and scientific analysis is essential for a true appreciation of the cultural heritage of the ceramic outputs of these two factories, in a holistic approach.

In this way the true beauty and excellence of these early 19th Century porcelains can be appreciated from a better understanding of how they were made, their place in Regency society and the men and women who devoted their energy to creating and decorating what are still unsurpassable works of art. It is also a story of one man's vision, his constant striving and determination to make the best porcelains and his tragic failure to establish an economically viable porcelain factory: William Billingsley, born in Derby in 1758 and who died in Coalport in 1828, having seen both his daughters, Sarah and Lavinia, pre-decease him at Swansea and Nantgarw in 1817. Although his efforts have been described historically and economically as a failure and may indeed have been appropriately viewed as such from a strictly commercial standpoint, his porcelain has in fact stood the test of time and it finally achieved exactly the standing that he sought—namely, some of the most desirable and collectable works of ceramic art ever created which have thus far never been surpassed and surely never will be: even in his own time and for over a century afterwards, the desirability of Billingsley's porcelains from Swansea and Nantgarw generated multifarious fakes and forgeries—therefore, a forensic appreciation of the heritage of these artworks is long overdue! Elis Jenkins (*Swansea Porcelain*, 1970) has expressed this viewpoint in another frame:

> the makers of Swansea china aimed at a goal far beyond their hope of realisation and achieved something substantially worthwhile but only at the expense of breaking the first law of a commercialised society—losing money!

Finally, in summary, this study of two important porcelain manufactories which arose and then disappeared after just a few years operation and production during the first quarter of the 19th Century lends itself admirably to the unique approach of *holistic forensics*: whereby aspects of historical knowledge about the artists, decorators, gilders, purchasers and distributors has been brought together alongside hard scientific data about their porcelain bodies, glazes and enamels used in their manufacture. The uniqueness of this approach for these two ceramic factories is necessary because, unlike their contemporaries and competitors such as Derby, Spode, Coalport and Worcester, the pattern books and workbooks from Swansea and Nantgarw have not survived, if indeed they ever existed. In addition, whereas the other factories had their London agents who received and negotiated sales of

their own products exclusively, the Swansea and Nantgarw factories had engaged general ceramics retailers who purchased their porcelain in large quantities in the white (i.e. glazed but undecorated), arranged for its decoration in their London artistic ateliers and then sold it on to clients at premium prices, in addition to representing other factories. For example, Mortlock's, who were effectively exclusive retailers of Nantgarw porcelain in London, also dealt in the purchase and sale of highly desirable Sevres porcelain from France. Unfortunately, the order books for these retailers are also now missing, having been dispersed or destroyed upon the closure of their businesses and were not accessed for the compilation of the first written history of the factories in 1897. Hence, the adoption of this current forensic historical/scientific approach is vital for Swansea and Nantgarw porcelains in an attempt to derive hard information about their operations and products: typical information that is normally required for the de rigueur forensic investigation of art work and easel paintings– namely, who made it, how much of it was made, where was it made, who painted it, what has happened to it since its manufacture, who purchased it originally and how did it survive to the present day—and this is similar to the approach used in this study for ceramic art.

In real terms, therefore, we shall be using the following materials and asking the relevant associated questions in an attempt to clarify a complex, often rather textually or chronologically confused, situation and to provide novel information wherever possible backed up with verifiable data to dispel anachronistic and unsubstantiated pseudo-Dickensian statements which have become enshrined in literature pertaining to this "*Tale of the Two Factories*". Thus, in an endeavour to decipher what is definitively true and in the establishment of a baseline of hard verifiable information about the Swansea and Nantgarw porcelains we will be using the following source information:

- In the absence of factory and retailers' order books and pattern books, the personal diary records of key personnel such as Lewis Weston Dillwyn and William Weston Young (cited from the Original Manuscript Fact Books deposited in the Glamorgan County Records Office, Cardiff, and Wales).
- Personal letters and information relating to legal documentation about the founding or closure of the businesses.
- A re-evaluation of key witness statements about employees and personnel at the factories recounted by survivors or their close family members and descendants to William Turner, Robert Drane, Colonel Grant Francis and E. Morton Nance who all produced seminal and highly important written accounts of the Swansea and Nantgarw factories from over a hundred years ago: it is clear that several of the conclusions and interpretations made by these authors have been made at face value and using unsubstantiated evidence from which certain ideas and hypotheses have been accepted unquestioned and at face value—these are now seen to be patently incorrect, or at least of questionable status, and have muddied the waters of a true modern forensic study. The reliability of witness statements is frequently found to be a matter of conjecture in modern legal proceedings and essentially we have the same situation here, with memory recall

being requested and reported by the early historical writers over a span of at least several decades since the events referred to took place; very often the statements of ex-factory employees or their direct descendants have been accepted as unchallengeable and we shall try to apportion an evidential criterion to this documentary aspect when other documentation is apparently in contradiction with an eye-witness recollection. It will be seen later that an eye-witness testimony relating to personnel at the Nantgarw factory of a local physician who ministered to the Billingsleys, Dr. William Price, has been rejected seemingly and purely because of his notable eccentricity (he used to wear Bardic robes and a fox fur hat, whilst driving around in a chariot drawn by a goat!).

- Because of the itinerant nature of ceramic artists' employment in the late 18th and early 19th centuries, it is essential to trace the location chronologically of these key personnel: in this approach, several areas of historical confusion have been identified here and thereby proposed for correction: a classic example is provided by the two accomplished artists, both named William Pegg, who both worked at the Derby China Works, and both of whom can be placed in Swansea or Nantgarw in 1817, but only one of whom actually painted there—namely, William Pegg the Younger and not William "Quaker" Pegg, as was assumed by a leading authority on Welsh porcelains. In at least one account in the literature, some differential quality between these two artists has been attempted by referring to one as Pegg and the other as Peg: this is patently clearly not good enough and how do we then apply the same criterion or maxim to de Junic and Jenny, a Frenchman who worked at Swansea and to whom the "bearded tulip" decoration is assigned—when previous authors have considered the former case as describing definitively two distinct people but paradoxically the latter case as referring to the same person? Indeed, what is in a name: it is recorded that William Billingsley himself used the nomenclature of Billensley and Beeley in various locations!
- The identification of an artist's hand or palette on the porcelains of these two factories is essentially dependent upon the characterisation and comparison with his or her known and highly respected provenanced works—this is not precise when exact documentary information is often missing and only anecdotal evidence remains. An example is the clear statement from Robert Drane in 1897 that local families who possessed services of Nantgarw porcelain would naturally have had these painted by William Billingsley alone, on the erroneous but possibly reasonable assumption firstly that the porcelain would have been ordered directly from the factory and, secondly, that it was painted there by Billingsley himself, the best porcelain painter of his era. Drane recognised no other painter of quality at Nantgarw, including Thomas Pardoe, the quality of whose artistic work he did not rate highly at all! This ignores completely the documentary evidence given to the author William Turner, in the same book, by Richard Millward and others who were employed at the Nantgarw factory that some 20 persons were employed at the Nantgarw manufactory at the height of its full operation, several of whom were decorators of the porcelain output locally and completely disregarding the evidence that most of the factory output

in fact was purchased in the white for decoration by Mortlock's in London anyway, where, of course it could not have then been painted by local artists.

- The rather complex chronology of movements of the central character, William Billingsley, between different establishments according to verified documentation and his paternal influence on his daughters Sarah and Lavinia: a major question arising here is, did they or did they not paint porcelain for their father at the factories where they were based, including Swansea and Nantgarw?
- The attribution of an artist and place of decoration, be it in London or locally in Swansea and Nantgarw, is sometimes not easy to define but this is equally essential for a complete description of their activities. Again, the total absence of a factory order book or a pattern book where appropriate is a problem here for an historical audit to be carried out. It has always been particularly problematic to assign a particular artist to a ceramic work of art: for example, it is believed that factories upon the receipt of a large and prestigious commission would schedule their workforce to assist the principal artist in the execution of the work to ensure that the commitment to a delivery date was met. Many examples of this can be cited, and even more confusing is the realisation that porcelains in the white would be bought in from rival establishments to complete an order on time: the Swansea porcelain factory purchased items from Coalport to make up their large *Lysaght* dessert-dinner service, all being decorated at Swansea by Henry Morris. Roger Edmundson (*Welsh Ceramics in Context I*, 2003) alludes to this practice very clearly with reference to the Pinxton factory and especially to the estimated 1500 tea services granted to Bankes at the closure of the factory in settlement from John Coke after the departure of William Billingsley in the early 1800s, who then disposed of these items in the white to other factories and retail outlets for external decoration.
- Associated scientific analysis of the porcelain bodies, glazes and possibly the enamels with studies of kiln temperature effects will be reviewed for experiments which have taken place and been reported over the last century from the original wet chemical methods to the latest microspectroscopic XRD and SEM/EDAXS qualitative and quantitative analytical chemical determinations: a reappraisal of the interpretations that have been proposed and suggested is forthcoming and deemed necessary. This aspect is especially relevant to any decisions that we may arrive at regarding the variations in porcelain paste composition at these factories: here, an analytical word of caution will be deemed necessary as it must be remembered that the minerals used in the construction and preparation of the porcelain pastes before firing is commenced will inevitably be subject to natural variations and particularly in the earlier wet chemical analyses a small change in, for example, the calcium content may not truly reflect a real and conscious change in composition but could rather arise from the inclusion of a calcareous impurity in the sourced mineral concerned. That this situation actually happened is borne out by a statement made by Lewis Dillwyn, the proprietor of the Swansea China Works in its heyday, in his note book that the presence of calcium carbonate impurity in the initial porcelain frit mixture rendered a blistering effect on the resultant porcelain body after firing,

presumably arising from the thermal decomposition of the carbonate into gaseous carbon dioxide, which would then have been trapped as bubbles in the porcelain matrix.

- The exposing of fake porcelain substitutes for the originals, either as replacement items for those damaged in use or as forged pieces to dupe unsuspecting collectors, has always been prevalent for premium art works and Swansea and Nantgarw porcelains are no exception. A re-examination of factory marks and shapes must be considered even though much work has already been expended in this direction—whilst dismissing Robert Drane's early rather global hypothesis that factory marks for Welsh porcelains are not worthy of consideration; the impressed marks for Swansea and Nantgarw porcelains are usually taken as very good indicators of originality and it is the painted script marks which cause the problem in the detection of faking or in forgery issues.
- Finally, a novel collation of information about specially ordered services, termed here *named services*, which examines the original purchaser and subsequent history of the porcelain after its dispersal where known or reported—so giving rise to an associated and parallel nomenclature. This concept gives another very useful and specific handle on the provenancing of the artwork as it facilitates an independent access to and correlation with other historical source information which can lead to a correct attribution and chronological comparison with the movements or placement of a supposed or nominated artist. In this context, armorial porcelain affords yet another route into correct provenancing and the few surviving examples of armorial Swansea and Nantgarw porcelains are considered thoroughly alongside named service definitions. Although for other factories, which have extant pattern or order books, the armorial porcelains are sometimes perhaps considered to be rather inferior in artistic merit compared with their fully decorated analogues, in the case of Nantgarw and Swansea porcelains the few examples of armorially decorated china provide an excellent and welcome additional insight into the chronology of production as their commissioning can often be correlated with important events such as marriage or the assumption of a title. It is a consequence of the dispersal of large services or the remnants of these which gives rise to a large problem of attribution later: for example, the dispersal of the so–called *Sayers* service in 1932 at auction, a large 100-piece Swansea breakfast service in a simply gilded Paris fluting moulded pattern, in single lots means that surviving items which formed this service are now difficult to label and attribute—it is believed that this service was the one that was originally advertised in the final auction sale of Swansea porcelain in 1826 referred to later ("*Paris fluting, broad gold bands*") and, therefore, the example shown later may well be part of this commission, but it is now impossible to verify that in the absence of an appropriate auction log and sales provenance. Rarely does one observe the sale of a near complete Swansea and Nantgarw service in present times and therefore the identification is dependent upon historical and associated provenancing to trace the attribution: in this respect the present research will advance the capability of achieving this end, hopefully by incorporating both the historical and scientific evidence in a holistic approach.

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Chapter 2
Porcelain Manufacture in South Wales in the 19th Century

Abstract The start of porcelain manufacture in South Wales in the early 19th Century, from an already existing ceramics industry in Swansea headed by Lewis Weston Dillwyn to the fledging and novel start-up in Nantgarw by William Billingsley and Samuel Walker. Billingsley's ambition to create the finest porcelain as a vehicle for his esteemed ceramic painting initiated his set-up at Nantgarw: initial success and demand for this new ceramic product was plagued by unacceptably high kiln wastage and the venture failed economically. This prompted his move to Swansea along with the expert kiln master, Samuel Walker, who engaged in experimental recipes for porcelain paste bodies and glazes with Dillwyn to create the famous duck-egg Swansea translucent body which was so admired in Regency society. The departure of Billingsley and Walker from Swansea to re-fire the kilns at Nantgarw, this time with secure financial backing, started the second phase of porcelain production there, only to fail again because an insatiable demand from the London retailers, their ateliers and purchasers still could not be met because of kiln wastage upon firing.

Keywords Lewis Dillwyn · William Billingsley · Samuel Walker · Duck-egg porcelain · Kiln wastage · London decoration · China retailers and agents

Pottery manufacture in Swansea started in July, 1764, when a local industrialist, William Coles of Cadoxton-juxta-Neath, near the town of Neath, took a lease on the site of the old copper works at the Hafod for the production of stoneware. In this venture he was encouraged by the Burgesses of the Borough and Corporation of Swansea, who were making a conscious effort to remove the perceived social stigma and physical nuisance of smoke, grime and stench from copper smelting, which for many years had given Swansea a prime international trading position in the metal worked from its ores and afforded the town the title of "*Copperopolis*". Thereby, they hoped to encourage a nevertheless industrialised Swansea as a fashionable and attractive seaside resort for visitors. The first copper works in Swansea opened in 1717 in the Tawe Valley, where the smoke and noxious fumes

H.G.M. Edwards, *Swansea and Nantgarw Porcelains*,
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from the smelting operations destroyed all vegetation on the downwind eastern side of the valley. This was quickly followed by a second copper smelting works established on the site of what transpired later to be the Cambrian Pottery, situated much closer to the town in the Hafod—later acquired and enlarged to be the largest of its era by the Cornishman John Vivian to smelt his copper ore brought from Cornwall into the local docks (B. Morris, *Welsh Ceramics in Context I*, 2003). Vivian would be a major supporter of the Swansea porcelain manufactory in the early 18th Century and he commissioned from there a plate showing his Marino residence painted by Thomas Baxter, in addition to the large *Marino Ballroom* service and several other highly important Swansea services. The surge in demand for copper can be attributed to the requirement of the Royal Navy for copper sheathing for their men-of-war to combat the destruction of ship's wooden hulls by barnacles and teredo worm.

Coles was trying to emulate the success and reputation of Josiah Wedgwood in Stoke-on-Trent, whose earthenware production had started in the previous decade and quickly led the field with his esteemed creamware. Coles made a successful start to ceramics manufacture at Swansea and he targeted useful domestic earthenware products. In 1786, Coles' son John carried on with the flourishing business set up by his father and entered partnership with George Haynes, a gifted manager and administrator, under whose proprietorship in the closing years of the 18th century the Swansea creamware was said to rival that of the esteemed Queen's creamware made by Josiah Wedgwood in Etruria, Staffordshire. The famous "*Frog*" service in creamware produced by Josiah Wedgwood between 1773 and 1774 for the Empress Catherine II (The Great) of Russia, whom he referred to as "My great Patroness in the North", and illustrating several Welsh scenes, was imitated by the Cambrian Pottery in Swansea with a very similar ivy leaf border in 1805 for a large dinner service for George Haynes and was decorated with similar scenes by William Weston Young (Blake Roberts, *Welsh Ceramics in Context II*, 2005, pp. 87–88; A. Renton, *ibid*, 2005, p. 129). Since the first publication devoted to Swansea and Nantgarw porcelains and earthenwares by Turner (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897), there has been some conjecture and debate about the actual date of the start-up of pottery manufacture in Swansea and Turner cited a believed date of "*about 1750*" from discussions with the then living relatives of Lewis Weston Dillwyn, a later owner of the Swansea china factory in the early 19th century.

In 1801, a prosperous Quaker, William Dillwyn, bought the lease of the Swansea Pottery, which had adopted the name of the Cambrian Pottery under George Haynes since 1790, and he placed his 23 years old son in charge, Lewis Weston Dillwyn. The arrangement whereby the Dillwyns retained control of the Pottery whilst retaining the local business acumen and skill of George Haynes as manager worked very well and Lewis Dillwyn acquired much knowledge about the ceramics industry. Between 1802 and 1810, the Cambrian Pottery traded under the name "Haynes, Dillwyn and Co." and the business expanded to nine kilns for earthenware production despite a rather unfavourable economic climate operating at that time. In 1810 Lewis Weston Dillwyn became the sole proprietor of

the Cambrian Pottery, with the rather elderly Haynes retiring in favour of another Quaker family, Timothy and John Bevington, who joined Dillwyn upon Haynes' departure and then entered formal partnership with Dillwyn in December 1811. From this time until Michaelmas 1817, the time when British ceramics factories established their annual contracts, the Cambrian Pottery traded under the name "Dillwyn and Co.". At this point the chronology becomes rather murky as Grant Davidson suggests that Haynes may have dabbled with the idea of producing experimental porcelain prior to Dillwyn's arrival, around 1796, but that nothing significant was actually produced before 1802. It is clear that the true era of porcelain production at Swansea probably began with the association between Dillwyn and the Bevingtons. In 1817, it was realised that the ability to produce high quality translucent porcelain at Swansea as exemplified by the characteristic and desirable duck-egg porcelain body was not commercially profitable and experiments that had been carried out by Samuel Walker under the aegis of Lewis Dillwyn did result in a more robust porcelain body through the introduction of Cornish soapstone into the body, a magnesium silicate, from Lord Falmouth's mine at Gewgraze. There are ample records which indicate that a flourishing business existed with the waterborne transportation of soapstone from Falmouth directly into Swansea docks.

However, the markedly inferior translucency and rough pigskin-like texture of this new porcelain was an instant dislike of the London retailers and their clientele—meaning that the days of porcelain production at Swansea were now severely numbered indeed. Dillwyn now came to an opt-out agreement with the Bevingtons who then took on the lease of the Swansea China Works and the Cambrian Pottery in late 1817. A rather fractious dispute ensued over the true valuation of existing unsold stocks of undecorated porcelain which seemed to comprise the excellent quality duck's egg and the poorer trident variety. The sum of £13,600 was deemed to represent the stock value, later readjusted to £9,500 by the Bevingtons, but an important clause in the settlement related to the very finely executed *Garden Scenery* dessert service of beautiful, duck-egg porcelain which had been painted personally for Lewis Dillwyn by Thomas Baxter, which still remains in the possession of the Dillwyn-Venables-Llewellyn family. It is alleged that no more china was made at Swansea during the Bevington period and that the existing stock was then decorated locally and sold off, much of the trident ware being purchased locally. Elis Jenkins has suggested that perhaps up to 100, 000 pieces of porcelain were held in stock at that time ready for sale, but there seems to be little in the way of documentation to support this idea. By 1824, the Bevingtons decided that they would not renew the lease and the Swansea China Works and Cambrian Pottery reverted back to Lewis Weston Dillwyn, who thereafter manufactured domestic earthenware only. It is alleged that around this time Samuel Walker again approached Dillwyn with the idea of resuscitating porcelain manufacture at Swansea, but Dillwyn was by then totally disinterested. After the death of Billingsley in 1828, Walker left Coalport and set up a ceramics earthenware manufactory in New York, eventually becoming a prosperous man.

In 1831 Lewis Weston Dillwyn brought his 17 years old son, Lewis Llewellyn Dillwyn, into the business and the son ran the works from 1836. Dillwyn Jr embarked upon a short-lived venture between 1848 and 1850 to manufacture Swansea Etruscan Ware, red and black earthenware vessels in a pseudoclassical style which did not succeed as a venture, so in 1850 he transferred the lease to David Evans and J. E Glasson, who traded under the name Evans & Glasson. In 1862, David Evans' son took over and renamed the output under the title D. J. Evans & Co., manufacturing simple domestic wares and clay pipes for smokers until the final closure of the Swansea Pottery in 1870. As with several other ceramics factories, the advent of the cigarette in the middle to last quarters of the 19th century dealt a mortal blow to the clay pipe tobacco industry and this probably contributed to the final demise of ceramics production at Swansea. Although the roll-your-own variety of cigarette using pipe tobacco was certainly still extant in the mid-19th Century, the invention of the mechanised cigarette machine by American Tobacco in 1883 made commercial cigarette production cheap and effective for wider public consumption, so dealing a final death blow thereafter to ceramic clay pipe manufacture.

Whereas the Swansea porcelain factory can be seen to have developed in about 1812 from an earlier pottery works and in fact co-existed with two ceramics factories at Swansea, namely the *Cambrian* and *Glamorgan* potteries, for a few years until its closure in 1824, Nantgarw, on the other hand was started up in its first phase as a totally new venture in 1813. By the early to mid-1820s, however, both porcelain factories were finally closed, the last of four auction sales of undecorated and decorated pieces which commenced in 1821 was carried out in Swansea in 1826. From the statement of a Swansea china works employee and noted ceramic artist, Henry Morris, made to Colonel Grant Francis in January 1850, some 28 years after the formal closure of the factory in 1822, it is apparent that Lewis Weston Dillwyn had the idea of manufacturing porcelain at Swansea in about 1812/1813 when he acquired the services of two former Coalport workers to construct a kiln in the premises of the *Cambrian Pottery*, but this venture was doomed to fail because of the lack of expertise of the personnel concerned and at best several pieces of rather mediocre glazed earthenware termed "stonebody" were produced here. Dillwyn then looked elsewhere for expertise and persuaded Samuel Walker and William Billingsley to leave their troubled enterprise at Nantgarw, which they had started up in 1812, and set up with him at Swansea in 1814. Their collaboration lasted just short of 3 years, creating the best porcelain ever produced at Swansea—having the famous duck's egg translucent body—before Billingsley and Walker left Swansea to embark upon their second phase of production at Nantgarw where they made what transpired to be the finest quality porcelain ever made in the British Isles in the 19th Century, which has never been emulated since. However, both factories in striving for excellence, and eventually achieving, it ran into severe economic distress and by 1819 for Nantgarw and 1822 for Swansea, porcelain production ceased. As noted earlier, ceramics manufacture still persisted at Swansea in the form of earthenware until 1870; at Nantgarw William Henry Pardoe, the son of Thomas Pardoe, took over the vacant

and derelict Nantgarw Pottery in 1833 and manufactured stone bottles, brown glazed earthenware and clay pipes but again, mainly due to the advent of commercial cigarette manufacture, this business had to close in 1920.

This account is verified by reference to existing documentation; however, controversy still exists as to whether the Nantgarw porcelain body was actually used at Swansea when William Billingsley and Samuel Walker arrived there from their initial start-up at Nantgarw in 1814; it could be argued that Dillwyn's favourable response to the invitation of Sir Joseph Banks to visit Nantgarw and to assess the quality of the porcelain being made there, followed up by his invitation to Billingsley and Walker to transfer to Swansea, must surely have involved his appropriation thereby of the successful Nantgarw china body. Dillwyn has himself stated that the very first pieces to emerge from his fledgling porcelain manufactory at Swansea were impressed "Nantgarw"—and several authorities since have claimed to have recognised these pieces that are still extant. However, even whilst Samuel Walker was building the two new kilns at Swansea for porcelain manufacture, he is said to have received a letter dated the 12th November, 1814 from Flight, Barr & Barr, the new name of the Worcester china factory following the death of Martin Barr Sr. in 1813 (prior to this it was called Barr, Flight & Barr from 1807 for the period when Billingsley and Walker were employed there). This letter was written in an aggrieved tone and remonstrated with Walker about the manner of departure of Billingsley and himself from the Worcester china works after the kind treatment they had both received there and expressing astonishment on hearing that they had formed "some *sort of contact with a person named Young*" and that he was about to make the secret porcelain composition for Lewis Dillwyn and the Bevingtons. This letter also informed Walker of "*the firm resolution of instantly giving our attorney instruction to commence an Action against you for the amount of the Penalty of 1000 Pounds named in the bond given you on the 17th November, 1812"*. Clearly, someone had alerted the Worcester china works to the activities of Walker and Billingsley at Swansea, but we can raise the question as to the timing of this: Dillwyn is not mentioned at all in the letter, but Young is certainly mentioned there. William Billingsley and Samuel Walker had already been attempting to make their improved porcelain body which they had perfected at Worcester during the preceding year at Nantgarw: no secret was made of this and they had even applied for Government funding and had acquired support and sponsors through William Weston Young. So, why should Messrs. Flight, Barr & Barr of Worcester wait until they had moved to Swansea to issue this threat, which actually must be regarded as quite an empty one as Billingsley and Walker had seemingly departed Worcester amicably and had even been paid £200 by Martin Barr as a leaving gift, on the understanding that they should not inform anyone else of the secret recipe and there was actually no reason at all to prevent them from setting up themselves elsewhere to make porcelain with that formula. This, of course, is exactly what they did at Nantgarw—with no demur from Worcester—and it was only when they were engaged by Lewis Dillwyn that the threat of legal action was issued. Did this shot across the bows mean that Flight, Barr & Barr at Worcester finally saw the financial backing of the Dillwyns

along with the "Nantgarw" porcelain formula manufacture a real hazard to their own operations? Dillwyn in a letter to Marryatt mentions that he had received a gentlemanly warning from Flight, Barr & Barr that the persons calling themselves Walker and Beeley had clandestinely left their service and that they should not be employed by Dillwyn under any circumstances, whilst also advising Dillwyn that the new experimental porcelain formula was useless! It must be said that this letter was obviously of a very different tone from the letter sent to Samuel Walker noted above. This situation must have caused Dillwyn to consider that the new Nantgarw body would be very likely not economical to make and that if he undertook to do so he would further incur the legal wrath of Flight, Barr & Barr. It is sensible to argue that these threats, real and perceived, could well have convinced Lewis Dillwyn to immediately abandon the idea of using the identical Nantgarw body at Swansea and to preferentially create a new improved body there using the newly acquired skills at his disposal in the form of Walker and Billingsley. This is a reasonable proposition as it is believed that whilst Walker was pressing ahead with Dillwyn to perfect the formulation and trials of the new duck's egg translucent china, Billingsley walked out and disappeared for some months only to return later to Swansea but then adopting a more distinctive role of china decorator and overseer of the artists' workshop, which rather pointedly excluded him from any decisions involving the manufacture and body compositions there.

For the very few years that these china works were actually in production in the first quarter of the 19th Century they undoubtedly made some of the finest porcelain in the world, which rivalled and even surpassed the output of the revived French *hard paste* porcelains from Sevres in a post-Napoleonic era—so, we can attempt to theorise what factors conspired to cause their closure after effectively just 2 or 3 years total operational output? A complex tale of commercial intrigue and the constant striving for perfection of an already high quality output in a highly competitive and demanding market resulted in extraordinarily large kiln losses of up to 90% output wastage in the firing process at Nantgarw in particular and the development of a stronger but markedly inferior and less attractive "trident" body at Swansea saw, firstly, the demise of Nantgarw in 1819/1820 and then of Swansea in 1822/1823.

However, this is really a retrospective success story in that these porcelains today represent some of the finest ceramic artworks in existence which rightly command first tier and premier prices for collectors in international auction rooms and in dealers' sales. William Turner (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897) records that the final Nantgarw dessert service retailed after closure of the factory by Mortlock's, their London retailer and distributor, which they had owned for some 45 years since the factory closure in 1819, was purchased in about 1864 for the princely sum of 500 guineas: this apparently represented the largest sum ever paid for a dessert service from this or any other British factory from retailers at that time and is equivalent to approximately £100,000 today.

2.1 The Influence of William Billingsley

The porcelains made at Swansea and Nantgarw in South Wales under the direction of William Billingsley, Samuel Walker, William Weston Young and Lewis Weston Dillwyn during the first quarter of the nineteenth century, which grew from the initial pottery production by Coles' successors, Lewis Weston Dillwyn and George Haynes (O. Fairclough, *Welsh Ceramics in Context II*, 2005, pp. 215-218), in the early 19th century are some of the finest examples of *soft paste* (*pate tendre*) bodied ceramics produced anywhere. A superior translucency coupled with exquisite painting decoration and the finest gilding accomplished by local artists and by established ceramics enamellers in the London ateliers or workshops engaged by the London retailers rapidly established these manufactories as the most desirable for purchase and acquisition by the aristocracy and landed gentry in the extended Regency period from about 1812 to 1823 (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897; E. Morton Nance, *Pottery and Porcelain of Swansea and Nantgarw*, 1942; W. D. John, *Nantgarw Porcelain*, 1948; W. D. John, *Swansea Porcelain*, 1958; E. Jenkins, *Swansea Porcelain*, 1970; R. Williams, *Nantgarw Porcelain:* 1813–1822, 1997), rivalling the very best output then available of Sevres *hard paste* (*pate dure*) French porcelain.

An interesting press clipping from the London newspaper "*The Morning Chronicle*" on July 11th, 1816, supports this acclaimed superior standing of Nantgarw porcelain in London society.

> Improvement in porcelain has succeeded in this country beyond the most sanguine expectations, a new manufactory has been established in Wales, the brilliancy of the white and transparency being equal to the celebrated Porcelaine of the Royal Sevres Manufactory. We understand that Her Royal Highness Princess Charlotte and Princess Mary have each a superb dejeune (Cabaret service) of the Cambrian Porcelaine. Mortlocks in Oxford Street is the only house where this rare production can be seen.

Although the name Nantgarw is not mentioned, being substituted by Cambrian (which also existed contemporaneously and confusingly as the Cambrian Pottery in Swansea!), the recognition of the high esteem in which this porcelain was held in Regency London is immediately apparent, and by mid-1816 the impact on London society was significant—directing them to Mortlock's in Oxford Street, London, as sole retailer for purchase of this desirable commodity.

Several experimental bodies based on the incorporation of the finest Cornish kaolin, fine Lynn sand, soaprock and bone ash were undertaken in the pursuit of perfection, an analysis of which will be discussed later, which resulted in significantly high kiln losses (it is claimed up to 90% at Nantgarw, and damaged goods transported to the waste tip by "the cartload" at Swansea) and the eventual closure of the two factories in 1819–1822 after which large sales of unsold stock, decorated and in the white, were disposed of in a series of auction sales until 1826 (A. Church, *English Porcelain from Museum Collections*, 1904; H. Eccles and B. Rackham, *Analysed Specimens of English Porcelains in the V&A Museum Collection*, 1922; W. D. John, *Nantgarw Porcelain*, 1948; W. D. John, *Swansea*

Porcelain, 1958; M. S. Tite and Bimson, 1991; J. Owen et al., 1998; J. Owen and Morrison, 1999; M. Hillis, *Welsh Ceramics in Context II*, 2005; H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015a). Such was the desirability of these porcelains, particularly Nantgarw, that they have always commanded very high prices: the esteemed American ceramics writer and collector, G. Ryland-Scott Jr. in 1961 (*Antiques Porcelain Digest*, 1961) described Nantgarw porcelain as:

> … the fascinating story of William Billingsley, who created the most beautiful porcelain ever produced anywhere.

William Billingsley and his enthusiastic and all-consuming drive for perfection is the key figure in the story of Welsh porcelain; his skill, dynamism and association with especially Samuel Walker provided the impetus and practical abilities whereby some of the most beautiful renditions of ceramic art were created first at Swansea and then at Nantgarw in the opening quarter of the 19th Century. We shall address the question of "Why Nantgarw?" elsewhere, but suffice to note for the moment that a suitable property was available for rental on the banks of the Glamorgan Canal, with local supplies of the highest grade anthracite Welsh steam coal available (which possessed the highest calorific value of any coals mined in Britain at that time) and Cardiff Docks only seven miles away at one terminus of the Glamorgan Canal for the importation of china clay and minerals from Cornwall and for the export of the finished goods to London and elsewhere. A further point is that the services of a local miller David Jones, who had a mill adjacent to the Cross Keys public house nearby with a water powered wheel driven by a leat from the Glamorgan Canal, could be arranged for the especially fine grinding of calcined bones mixed with clay to form the essential frit for the production of fine porcelain; as will be highlighted later, the thorough grinding and mixing of the source materials is a critical parameter in the production of the finest porcelain body when fired.

2.2 Factory Output

It is certainly true that since the premature closure of these two factories, collectors who have had the privilege to examine and handle Swansea and Nantgarw porcelains have been most enthusiastic and eager to acquire examples and this has contributed materially to their continued interest and in maintaining their appreciated position as ceramic art works; it is testament to their perceived quality that the very limited production of these fine porcelains emanating from two rather small factories which were only in production for a relatively short time, perhaps summed only over a total of 2 or 3 years at best intermittently, has generated so much interest that it still continues internationally today. It has been recorded that immediately after the final auction sale of Nantgarw porcelains on 28th October, 1822, that Nantgarw plates were changing hands for 2 guineas per plate; several

notabilities who had travelled some distance by carriage to purchase these porcelains expressed their extreme dissatisfaction that they were unable to acquire Swansea and Nantgarw china at these sales but this was paradoxically not sufficient to save the factories at this late stage—for example Sir Watkin Williams-Wynn of Wynnstay in North Wales arrived too late by carriage to participate in this final sale in Swansea much to his annoyance and chagrin (see Henry Morris' statement, Appendix, Document 2) and he vented his dissatisfaction upon the vendors.

The porcelains of Swansea and Nantgarw were very much sought after and they can be broadly classified here into two main categories: namely, examples locally decorated by esteemed artists such as David Evans, Henry Morris, William Pollard, George Baxter, George Beddoes, Thomas Pardoe and William Billingsley (W. D. John, *Nantgarw Porcelain*, 1948; W. D. John, *Swansea Porcelain,* 1958; W. D. John, *William Billingsley,* 1968) and items usually more flamboyantly decorated for aristocratic Regency consumption in the London ateliers. It will be seen later that this class division into two of the porcelain output from these factories is actually too simplistic and we shall need to expand this after discussion. Much of the porcelain output from both Swansea and Nantgarw, but especially Nantgarw, was sent in the white, i.e. simply glazed, to the London enamelling ateliers of John Sims of Pimlico and Robins & Randall of Islington, who employed famed ceramic artists and enamellers such as Moses Webster and James Plant, from where the finished outlet production was ordered through retailers such as John Bradley's of 47 and 54, Pall Mall, Bailey, Neale & Bailey of 8, St Paul's Churchyard, Boucher & Guy of 128, Leadenhall Street, John Powell of 91, Wimpole Street, Daniell and Co. of Wigmore Street, and Pellatt & Green of 16, St Paul's Churchyard. John Mortlock's of Oxford Street and Orchard Street acted as the major London purchaser of Nantgarw porcelain in the white and they decorated it in their own workshops and in that of Robins & Randall according to specified orders and commissions placed with them. Bradley and Co. of Pall Mall had a similar retail position and there was stiff competition to acquire as much of the output of the factories as possible, especially Nantgarw porcelain. It is known that Mortlock's regarded themselves as the prime suppliers of Nantgarw porcelain to an insatiable London clientele and John Mortlock urged William Billingsley to let him have all the output from his kilns—which Billingsley strived to do, keeping back perhaps just a few pieces for local purchase and gifts and, of course, some minor flawed items for local decoration only. Here was the first manifestation of the unacceptably high kiln losses thwarting the successful promotion of Nantgarw porcelain—the supply just could not keep up with the demand, even at the premium sale prices being applied by the London retailers.

Richard Robins and Thomas Martin Randall employed over 40 people in their enamelling atelier in Sparfields, Islington, where much Swansea and Nantgarw porcelain was decorated for the retailers' commissions. Other contemporary china manufacturers tended to have their own dedicated outlet retailers in London, e.g. Derby and Worcester, who employed itinerant artists and decorators. For example, Moses Webster had initially served his apprenticeship at Derby then joined

Thomas Randall in London in 1819, working there until he returned to Derby in the early 1820s, where he decorated many fine items of china including the celebrated dessert service for John Trotter Esq. of Dyrham Park in 1825, an example of which is shown in Fig. 2.1 (J. Twitchett, *Derby Porcelain: An Illustrated Guide* 1748–1848, 2002; p. 168, Colour Plate 133 depicts a cup and saucer from a generic tea service of this same pattern). A fine cup and saucer from a Nantgarw tea service decorated in London by Moses Webster at Robins and Randall's atelier is illustrated in Fig. 2.2, comprising delicate arrangements of pink roses and foliage accompanied by typical dentil edge gilding: a similar cup and saucer is illustrated in the *Nantgarw Porcelain Album* (W. D. John et al., 1975, Colour Illustration 79) and a sucrier (*ibid.*, Coloured Illustration 86). It is of relevant interest that the definitive artistic work of a named artist on another porcelain factory output, in this case Derby, can be instrumental in the identification of his work on Welsh porcelains also. Moses Webster is quoted by the ceramic historian Bemrose (*Bow, Chelsea & Derby Porcelain*, 1898) as saying

> … in 1819 he painted quantities of Nantgarw porcelain for Mortlock's in Oxford Street, who purchased everything that Billingsley made at this time in the glazed white state….

Indeed, this was praise from one of the premier china retailers in London, who had their pick of the output from contemporary factories, including the famed Sevres porcelain factory. It is known that Mortlock's, by securing the bulk of the Nantgarw output, could sell the porcelain at the best prices once decorated, fetching some 300% premium at least on its nearest English porcelain competitors and rivalling if not outmatching that of the Sevres porcelains in the desirability of its possession. It was even alleged, perhaps unfairly, that Mortlock's passed off Nantgarw items (presumably unmarked) successfully as Sevres porcelain, which then retailed at a further premium of over 500%—a rumour possibly circulated by jealous competitors in the porcelain retail trade! An interesting difference becomes manifest between the Welsh porcelain factories, especially Nantgarw, and those of their contemporary rivals in that much porcelain output from Swansea and Nantgarw was sent in the white, i.e. glazed but undecorated, to their London retailers' workshops and enamelling ateliers. In contrast, other factories such as Derby, Worcester and Coalport decorated their own china locally and then sent this for distribution and marketing to their own dedicated London agents, or indeed just used their specific agents to create the business orders which were then sealed through their own factory order books—clearly, in this scenario any discussion of patterns and design would have been taken up with the factory concerned through their agents, and this is documented in the work books of, for example, the Derby factory. Edmundson (*Welsh Ceramics in Context I*, 2003) makes a particular reference to a statement made by Billingsley at Pinxton in 1796 that it was much more profitable to decorate and then sell the fired china from one's own factory than to supply retailers and other factories with undecorated wares in the white. This

means that locally decorated Swansea and Nantgarw porcelains were invariably commissioned directly with the factory and that London decorated pieces were very different in style and concept, which could be reflected in the different tastes of the local gentry and of London high society. Examples of locally decorated Swansea services are the *Lysaght* service and the *Lady Seaton* service whereas the *Burdett-Coutts* is a London decorated service. Similarly, for Nantgarw porcelain, locally decorated services are represented by the *Edwards* and *Ferguson* services, whilst the typical, and rather more flamboyant London decorated analogues are represented by the *Duke of Cambridge*, *Brace* and *Mackintosh* services. The decoration of porcelain supplied in the white to the London retailers has also generated the possibility that for completion of a commission to a special order items of non-Welsh origin were sometimes included to meet a deadline and this will be alluded to later. As an example of a dedicated London agent, Joseph Lygo dealt exclusively for Derby porcelain from 1777, shortly after the factory had achieved their Royal Warrant from King George III in 1775, until the early 1800s when Robert Bloor transferred his agency to Courtney's at 34, Old Bond Street. It has already been mentioned that Derby, in contrast to its Swansea and Nantgarw contemporaries, decorated all of its output at the factory even for its London commissions.

Fig. 2.1 Derby plate from the *Trotter* service painted by Moses Webster for John Trotter Esq., Dyrham Park, which documents his flower painting, *ca.* 1820. *Private Collection*

Fig. 2.2 Nantgarw coffee cup and saucer with heart-shaped handle, dentil edge gilding, London-decorated with pink roses, buds and moths by Moses Webster in the atelier of Robins & Randall, Spa Fields, Islington and retailed through Mortlock's, Oxford Street, London. Illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, Colour Plate 79, and also a sucrier and cover from the same service in Colour Plate 86. *Private Collection*

John Sims, in his atelier in Five Fields Row, Pimlico, employed several fine ceramic artists, including Billingsley's mentor at Derby, Zacariah Boreman who worked there after leaving Derby in 1794 until he died in 1810, James Plant and James Turner—the first two artists specialised in landscapes and figures and the latter in flower painting. It should be recognised that these ateliers did not exclusively decorate Nantgarw and Swansea porcelain and W. D. John (*Nantgarw Porcelain*, 1948) has suggested that a possible explanation for his own discovery of several items of French hard paste porcelain in otherwise large nearly complete Nantgarw services he examined at that time could well arise from a shortage of items delivered from South Wales and unobtainable immediately due to the exceptionally high kiln losses in Nantgarw. Another intriguing possibility, of course, is that the French porcelains were later substitutes for breakages in Nantgarw services following the factory closure in 1819, but the consistent and similar decoration undertaken by apparently the same artist seen on both the original and putative "replacement" items would tend to negate this view. Nevertheless, several Nantgarw and Swansea services today are acknowledged to contain these rogue items from other factories, such as some dishes and ice pails ascribed to Coalport manufacture in the *Lysaght* Swansea dinner-dessert service, although both the true Swansea and the fake "Swansea" items have been decorated locally by Henry Morris. The attribution of Coalport to these rogue pieces has been made solely on the basis of non-Swansea shapes and this clearly gives a very sound experimental base for some further investigation of the porcelain body composition of individual items in this service by non-destructive analytical chemical spectroscopy (see later) which has not yet been undertaken but which would achieve the

scientific support for recognition of associated items in otherwise incontrovertibly designated porcelain services from Swansea or Nantgarw, and even from other factories (H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry: Historical Pigments*, 2015b).

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Chapter 3
Historical Research Issues

Abstract The issues facing historical research into porcelain factories in the 19th Century and the problems facing Swansea and Nantgarw china works research: the absence of factory pattern books and work schedules for commissioned services is especially noteworthy for these two small factories in comparison with their larger contemporary competitors such as Worcester and Derby, where original records are still extant for consultation and study. The use of pattern numbers, absent for Nantgarw and sporadic for Swansea is discussed along with the presence of factory impressed and applied stencil and script marks, which especially for Nantgarw products were prone to mimicry and faking. Disputed attributions again illustrate the necessity for a holistic approach to vet and confirm genuine articles form spurious porcelain generated at other factories but bearing a Swansea or Nantgarw mark. The attribution of an artist to the decoration of ceramics has always been challenging and is no exception for these two factories and a list of artists who have been identified as working at Swansea and Nantgarw is provided.

Keywords Pattern books · Work documentation · Pattern numbers · Factory marks · Artist identification · Fake marks · Spurious porcelain

It might be a reasonable supposition that a good starting point for any investigation into the history of porcelain manufacture would be the marks on the ceramic artworks themselves; these would include the impressed, stencilled or freehand script painted factory marks, geometric devices or a rebus, retailers' painted marks, pattern numbers, gilders' numbers and descriptive script relating to the location of a scene, a bird or an animal or the botanical source of a plant featured in the decoration. For example, in the Derby *Trotter* service alluded to earlier, the originals were consistently marked in gold on the reverse but later, generic versions lacked this refinement. Sometimes a Royal Warrant or evidence of patronage was also displayed and this can be a useful additional item for attribution and chronological dating purposes, such a situation pertained at Rockingham and Worcester. Whilst recognising that too much reliance on an applied mark on a ceramic art work can generate the too ready acceptance of a fake item and, therefore, we should always be wary,

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much as the signature on an oil painting does not guarantee its authenticity, their outright dismissal as advocated by Drane (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897) is equally not acceptable as much information is locked into such marks and their combination which needs to be properly evaluated. This is certainly true for Swansea and Nantgarw porcelains: Nantgarw invariably marked their items with an impressed mark, but only for plates and related flatwares, never for cups and saucers (W. D. John, *Nantgarw Porcelain*, 1948; but see statement from Brown, 2016, later) and more complicated shapes, whereas Swansea used a combination of both impressed and/or painted script and stencilled marks.

It is interesting that occasionally items of genuine Nantgarw porcelain do appear which "buck the trend" and have rare marks: a recent case of a Nantgarw cup and saucer is mentioned by Stuart Brown (S. Brown, 2016), which has a recognisable Nantgarw pattern of floral decoration, distinctive turquoise ground and gilding swags, along with the dentil-edge gilding associated with its London retail outlet, and a correctly shaped cup handle and dimensions, but with the highly unusual, impressed NANT-GARW C. W. mark on the saucer. A potential problem still exists, however, in that this pattern of decoration also occurs on Sevres and Derby porcelains and an almost identical cup and saucer in shape and decoration appears in Twitchett (*Derby Porcelain*, 2002) where it is indisputably recorded as being of Derby manufacture—so the pattern in isolation cannot be definitive for attribution to a particular factory. The *Marquess of Anglesey* tea service is a case in point, being a mixture of both Nantgarw and Swansea pieces but with identical applied decoration, although still having the retention of distinctive cup and saucer shapes characteristic of each factory.

Occasionally, Swansea used one or more tridents impressed into the body before firing for their later so-called "trident" porcelain body, which was not appreciated by potential purchasers as much as the beautifully translucent "duck's egg" body it replaced. In contrast, Nantgarw as a rule never used painted or script marks to identify their products and therefore an applied overglaze script mark is usually correctly taken to be indicative of a fake (see later)—care should be taken, however, in exercising this prescription as there are one or two verifiable instances of a script Nantgarw mark being seen on a genuine piece of porcelain, such as the dish described later from the *Williams* service at Aberpergwm House, decorated distinctively in Thomas Pardoe's hand. This reinforces the forensic application of the holistic approach in which every statement is examined and verified, considering all the evidence available for assessment and the application of broad dismissive statements whilst useful is not totally reliable.

3.1 Pattern Numbers: Absence in Nantgarw

In marked contrast to their porcelain manufactory contemporaries and rivals, such as Derby, Worcester, Spode and Coalport, Nantgarw porcelain did not carry pattern numbers: W. D. John et al. (W. D. John, G. J. Coombes & K. Coombes,

Nantgarw Porcelain Album, 1975) have noted that in an examination of some 5000 pieces of Nantgarw porcelain none contained a pattern number. Nantgarw porcelain plates in dinner, dessert and tea services were usually marked with an impressed "NANT-GARW C. W." stamp, signifying Nantgarw China Works (and not Nantgarw, Cardiff, Wales, as has been suggested apocryphally), but saucers and ornamental pieces were "never" so marked (but see Brown, 2016, above). Because the pattern numbers are non-existent, the only information that we now can access about the origin of the porcelain service commissions for this factory arises from the work books and diaries of William Weston Young. Another first-hand source of valuable information about orders and commissions directly placed for Nantgarw porcelain would have been the order books of Mortlock's, the main London agents for Nantgarw porcelain, especially—but unfortunately these too were lost after the final closure of their china retailing business eventually in 1933.

Of course, as with most desirable and expensive works of art, copies from other factories and fakes were made for some years later, after closure of the Nantgarw and Swansea factories, to satisfy the ongoing demand by discerning collectors for quality items from these factories; these fakes can sometimes be detectable on account of their inferior translucency, poor quality decoration, incorrect porcelain body texture, inaccurate glaze composition and incorrect shapes. For example, French versions of Swansea porcelain copies produced from the Samson factory in Paris in the last quarter of the 19th century have been passed off regularly as genuine Swansea porcelains even finding their way into famous and discriminating collections and earlier substantive texts, yet these comprise a *hard paste* (*pate dure*, see below) porcelain body with a different texture and shape to the originals and the painting quality is in addition usually quite inferior and yet recognisable in its own way. Nevertheless, several of these items have been accepted as genuine Swansea porcelain hitherto by misattribution, often by association in rather famous collections of genuine pieces, and this situation still pertains. Turner (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897) in his classic text on Swansea and Nantgarw porcelains describes how even he as an expert, and perhaps the earliest researcher on these factories in the last quarter of the 19th Century, was occasionally duped into purchasing cleverly faked items pertaining to have been made in Paris: he bequeathed a selection of these to the National Museum of Wales in Cardiff to be made available for examination and education by future collectors as a case of *caveat emptor*. A conclusion of studies made of "rogue" porcelain introduced into Nantgarw and Swansea services, supported by Dr. John in his books, is that the incorporation of French hard paste items or other factory products into Welsh porcelain services was most easily carried out in the London retailers to complete the shortfall in Nantgarw or Swansea pieces in commissions received there—a reference to French ice pails in named services such as the Swansea *Gosforth Castle* service and the Nantgarw *Williams* service will be made in this respect—and, therefore, from this idea it has been stated presumptively that locally

decorated services could not possibly suffer in this way. However, there are some instances where this is patently untrue—the presence of Coalport dishes and plates in the *Lysaght* service of Swansea porcelain, where both Swansea and non-Swansea items were decorated locally by Henry Morris, provides a classic example of the operation of this practice in fulfilment of an order locally to meet a required deadline schedule.

In this context, the difficulties in the attribution of unmarked pieces of Swansea and Nantgarw porcelain occasioned even when pattern numbers or documentary pieces are available nevertheless pale into insignificance compared with the reliability or otherwise of the blanket acceptance of marked pieces. We have already alluded to the presence of fakes, which existed contemporaneously it is believed with the genuine articles: in some instances, the presence of fake marks must be recognised and a good example of this is provided by that noted on a Nantgarw spill vase in the collection of Morton Nance, where a cursive script Nantgarw mark is clearly indicated in red enamel along with an almost indecipherable pattern number! Although completely atypical of its genuine Nantgarw analogues in porcelain quality, decoration, shape, size and even style this was accepted and purchased as a genuine product of the Nantgarw factory—although it was later ascribed by Morton Nance to a Coalport origin: this attribution has now been further questioned by Edmundson (*Welsh Ceramics in Context Part I*, p. 209, 2003). Other examples of similarly marked Nantgarw spill vases are cited by Morton Nance (*The Pottery and Porcelain of Swansea and Nantgarw*, 1942, Plates CLXV. F and G; CLXVI. C) and his attribution of these to the Coalport porcelain manufactory is also questioned. The key feature in all of this is the sheer guesswork that prevails when it is realised that something is not correct in the attribution of a piece to Swansea or Nantgarw porcelain: this, again, is where scientific analysis could provide the solution and a definitive answer, but it must be realised also that a considerable database of porcelain compositions needs to be constructed to achieve this aim and this is not such a simple task because of compositional changes in naturally sourced raw materials and empirically altered porcelain body compositional changes. In this context, similar studies of the Sevres porcelain manufactory have been commenced, but these are assisted fortunately by the presence of complete factory workbooks and recipes for quantitative changes in porcelain composition which can act as markers for the correct interpretation of the analytical chemical results (Colomban, 2013).

Even in more recent times the automatic attribution of Nantgarw or Swansea porcelain to items that are similarly marked in rather dubious fashion is quite prevalent and a trawl of several auction sites over the past few years has revealed some rather glaring anomalies in the attribution of what is really some mediocre porcelain to these factories: in one case a tazza identified as “Nantgarw” solely on the evidence of a potentially fake script mark, *Nantgarw*, was sold for several thousand pounds at auction and some items of a tea service with a red stamped mark “Swansea China England” on the reverse were sold as genuine where the teacup

shapes, handles and applied decoration was completely wrong for early 19th Century porcelain, let alone Swansea, in addition to the abysmally deficient and patently incorrect geographical knowledge being displayed by the forger! Another porcelain plate, which should have invariably been in possession of the standard, impressed NANT-GARW C. W. mark, was sold as such at auction with a rather glaringly mis-spelled upper case script mark in red enamel, NANTHGARW CH W and missing the correct impressed version!! Finally, in 2015, a rather splendid campana vase was auctioned for a princely sum with a most unusual and incorrectly spelled *NANTGARROW* script mark … a real rarity, or perhaps a fake, but clearly the purchaser was convinced of its authenticity and was pleased to acquire this perhaps rare item of Nantgarw porcelain.

Even now, some forensic distinction needs to be made between a fake and a forgery of expensive items, whereby the latter is legally and technically made with deliberate intent to deceive, and sometimes the forger will also specifically introduce a spelling error in order to cleverly circumvent possible later legal prosecution, as happens in the case of brass or gilded Georgian gaming tokens which simulate and are intended to pass for genuine guinea coins in the dim lighting of candlelit rooms. Perhaps this explains the reason for some modern "reproductions" of Nantgarw and Swansea porcelain appearing to possess patently poor examples of the factory marks as it could later be argued that purchasers would surely not be duped by these obvious errors? In contrast, it would be equally wrong to state that a script mark for Nantgarw always implies a fake item, as we shall recount later a superb piece from a very important commission made for the Williams family of Aberpergwm House (W. D. John et al., *Nantgarw Porcelain Album*, 1975, Coloured Illustration 53, upper) which has a puce Nantgarw script mark accompanied by a crown, which along with its established provenance is otherwise of a genuine shape and has several characteristics of the recognisable decoration of Thomas Pardoe and so makes this a very rare item and highly desirable indeed!!

In many cases of disputed attributions of, in particular, Nantgarw porcelain, the fact that much of the production other than the table flatwares is unmarked lends itself to much debate and controversial argument, particularly for the rarer shapes: for example, not all Nantgarw spill vases of cylindrical form were made with masks in the form of heads—these were usually applied after the first kiln firing anyway, so some are found with applied head decorations and some without. Nantgarw examples of decorative wares, tureens, spill vases and teacups and saucers were invariably unmarked (but see the example cited above by Brown, 2016), unlike the plates as cited by Dr. W. D. John which were "*always impressed with the factory mark*". An example of this impressed factory mark is seen in Fig. 3.1, taken in light transmission through a Nantgarw plate and showing the beautiful translucency of the porcelain.

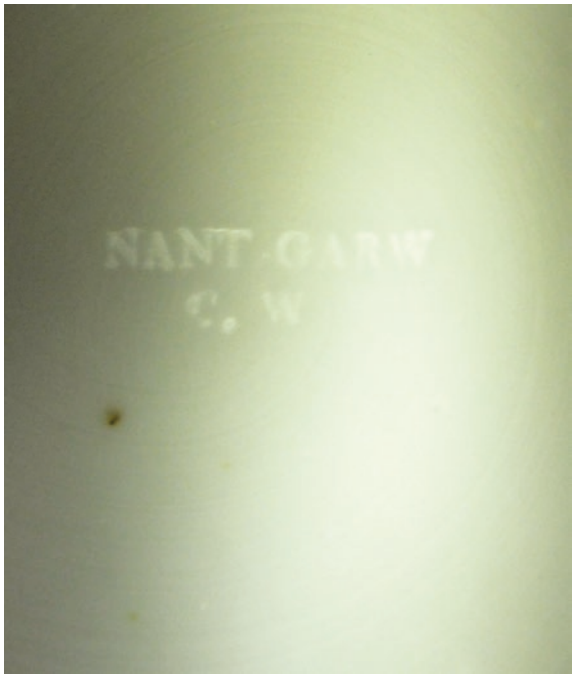

Fig. 3.1 Example of a genuine Nantgarw mark: impressed NANT-GARW C. W. viewed by transmitted light in base of dinner plate shown in Fig. 8.2. The translucency and clarity of the glaze should be noted. *Private Collection*

Much more Swansea porcelain was marked, usually in red enamel cursive or upper case script, but again it is found that normally only selected items of a service were so marked and others were left unmarked. An example of the SWANSEA red stencil mark shown in transmission through a duck-egg porcelain soup dish can be seen in Fig. 3.2: the beautiful clear blue- green colour transmitted through the porcelain is seen and the moulding at the front edge can also be recognised from the reverse side—this plate was decorated with exotic birds (Fig. 3.3) by William Pollard and these can also be seen as pale shadows in the view taken from the reverse side of the plate.

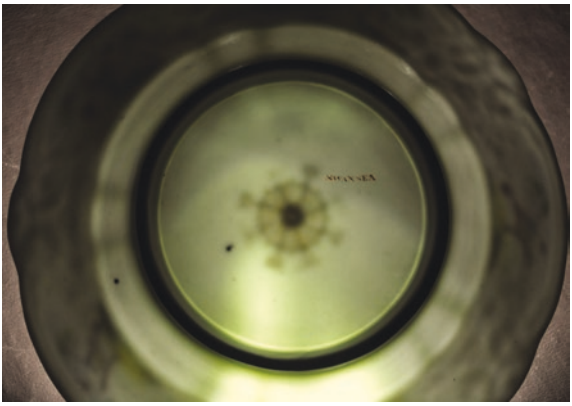

Fig. 3.2 Example of a genuine Swansea mark: Swansea soup dish with Nantgarw type floral embossed mouldings decorated by William Pollard with six vignettes containing birds and showing the red stencilled SWANSEA mark on its base when viewed by transmitted light—the characteristic duck-egg colouration of the highest quality Swansea porcelain is also clearly seen here. *Private Collection*

Fig. 3.3 The Swansea soup dish shown in Fig. 3.2, showing the high quality decoration typical of William Pollard, in this case comprising six vignettes of birds in foliage. *Private Collection*

Thus, it is often seen in books such as those written by E. Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) and Dr. W. D. John (W. D. John, *Swansea Porcelain*, 1958) that a statement is made that only larger items of a Swansea porcelain tea service such as the teapot, bread plate, sucrier and tea bowl were marked; this must not be taken as definitive as we shall see later that some tea cups and saucers were similarly marked representatively. Hence, for pieces without a designated pattern number in Swansea porcelain, it became quite *de rigueur* for collectors to keep even a badly damaged piece if it had the Swansea mark and/or an associated pattern number to lend credence to

a perfect although otherwise unmarked piece from the same service. For Nantgarw porcelain, as only the plates would have been so marked in a service it is important to record this fact when studying rarer items with the same pattern such as dessert dishes, comports, spill vases, violeteers or more ornamental tablewares.

3.2 Swansea Set Pattern Numbers

It seems at first that historical studies of the Swansea porcelain set patterns would fare much better than their porcelain counterparts at Nantgarw, as Swansea porcelains did carry stencilled or written pattern numbers (although not all pieces of the tea, dessert or dinner services were so marked—and sometimes only the larger items carried factory and/or pattern numbers), usually in red pigment, alongside the stencilled or impressed "SWANSEA" or script "Swansea" marks. However, the factory pattern books, if they ever existed, have now been lost—although there is an unsubstantiated suggestion in the literature that John Rose, proprietor of the Coalport factory, did acquire these initially along with the moulds and recipes for Swansea porcelain composition upon closure of the Swansea factory in the auction sales of remaining stock in the early 1820s. Even so, a learned and comprehensive study of Swansea porcelain by Jones and Joseph (A. J. Jones & L. Joseph, *Swansea Porcelain Shapes and Decoration*, 1988) has managed to match successfully only some 67 known patterns with identifiable set pattern numbers from some 150 different Swansea set patterns which were known and photographed at that time—it should be noted that these data were distilled from a factory range encompassing pattern numbers noted on pieces in the range from 3 to 705; Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 322) mentions that Mrs Moore-Gwyn of Dyffryn House, Neath, at that time owned a Swansea service exquisitely painted by William Pollard, with freely executed random flower arrangements of roses and auriculas interspersed with butterflies, with the then highest recorded pattern number of 704; Morton Nance has described the composition and decoration of the 25 pieces comprising this service in some detail—illustrating an example of a dessert plate from the service in Plate CXXVIIID in his book. This service had probably been ordered or at least acquired earlier by Howell Gwyn, MP, whose widow died childless in 1900, the family succession passing to Joseph Edward Moore Moore-Gwyn of Longford Court, who died in 1922, succeeded by his son Joseph Gwyn Moore- Gwyn. The Dyffryn estate was dispersed during the period 1916–1927 and presumably the porcelain was disposed of at this time also, the house itself being sold in 1928 and then demolished in 1931; sadly, no record can now be found of any surviving porcelain from this potentially important and historic Swansea service.

So, it may be concluded that in 1988, some 46 years later than Morton Nance's book, only one higher pattern number had been positively identified by Jones and Joseph in their authoritative study of Swansea porcelain set patterns. Hence, if we make the reasonable assumption that the Swansea set pieces were numbered consecutively and chronologically, as was the situation at other contemporary

porcelain factories, only some 10% of the available pattern numbers have thus far been identified and matched with the existing porcelain patterns on known Swansea china. Some Swansea services are known which comprise in-filled Japan designs and several of these are not associated with pattern numbers per se whereas others do seem to have pattern numbers and there are also some small but observable variations in these designs which may or may not reflect a different assigned pattern number, as noted by Jones and Joseph. It is clear, therefore, that there must be many more as yet unattributed pattern numbers to be identified from known examples of marked and unmarked Swansea porcelain. Oliver Fairclough has extended the study of Swansea set patterns in his excellent article (O. Fairclough, *Welsh Ceramics in Context II*, 2005, p. 193 and ff.) on the use of set pattern decoration in the Swansea China Works and according to his analysis he has estimated that only one quarter of Swansea porcelain was decorated freehand by accomplished and well-known artists; in contrast, the remainder comprised set patterns involving simple gilding and transfer ware, with repetitive and hand-painted designs which he has attributed to un-named but nevertheless accomplished factory hands. It is believed that children and young relatively unskilled workers accomplished these simple designs and decoration for essentially the local market; we shall see later that interviews with surviving ex-factory workers and their families carried out by Turner in the 1880s for his book on the ceramics of Swansea and Nantgarw (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897) makes reference to some 12 children employed in Nantgarw out of a workforce of 20 and a similar number employed at Swansea, although the workforce at Swansea would seem to have been somewhat larger. A combination of transfer patterns and infilled designs or applied floral decoration is also relatively commonly encountered; an example of this type is shown in Fig. 3.4 of a Swansea cream jug, with marked pattern 403, which has a vignette of painted roses in a white panel on a deep blue ground with gold vine leaves and magenta tracery, and has been recorded and illustrated in Jones and Joseph (*Swansea Porcelain*, 1988, p. 183).

Fig. 3.4 Swansea porcelain cream jug, Type 1, pattern 403, marked SWANSEA in red stencil, illustrating the application of painted panels of roses on a white background panel on a deep blue ground with copious gilding of vine leaves and magenta arabesques. Pattern illustrated in Jones and Joseph, *Swansea Porcelain*, 1988, p. 183/3. *Private Collection*

3.3 Attribution of Artist and Source

In the area of painted art works the identification of the artist provides seminal information which can be used in provenancing and attribution to a specific chronology and timeline. This is also the case for ceramics, but artistic attribution must be treated with caution especially where the artistic decoration is not supported by ancillary information from pattern books or commission receipts. As mentioned earlier, both Swansea and Nantgarw porcelains suffer markedly in this respect and this has been compounded by unsubstantiated statements in the literature which have been accepted without rigorous examination. There is no doubt that phrases such as "in the style of" or "after" have little bearing when it comes to a true attribution as it was in the manner of leading ateliers to follow a trend as demanded by their clientele for their china commissions.

A further problem, which has caused some controversy in the past, centres upon Nantgarw porcelains, especially marked plates, which bear the clear artist's hand and palette of William Pollard or Henry Morris, who never were employed at the Nantgarw China Works. It has been suggested that these pieces cannot therefore be genuine unless Nantgarw supplied the Swansea factory with undecorated finished wares at some time, probably between the first phase and second phase of its production, that is *ca*. 1813–1817—and there is some evidence extant for this actually happening from local stocks of undecorated porcelain remaining at Nantgarw remaining after the first phase of operations ceased in 1813; even Dillwyn hinted that in the earliest days of production some Swansea output used a Nantgarw impressed mark—which some researchers have taken to imply, without corroboration, that Dillwyn was using the Nantgarw porcelain recipe at Swansea!. However, an alternative explanation, which is supported by documentary evidence, is that both Morris and Pollard stayed on at Swansea after closure of the factory in 1823 and decorated porcelains there bought-in at the sales of Nantgarw porcelain on the 8th November 1820, the 9th–11th May, 1821 and finally on the 28th October, 1822, this final sale actually occurring in Swansea. It is now believed that they purchased items of Nantgarw porcelain in the white probably at the final auction and decorated and fired these using their own muffle furnaces at home. So these porcelain pieces instead of being deemed to be obvious fakes are in fact now considered to be rare and very desirable collectors' items—giving a new category altogether for locally decorated Nantgarw porcelain, namely, genuine Nantgarw porcelain decorated in Swansea by established and locally recognised Swansea artists. One example from W. D. John et al. (The *Nantgarw Porcelain Album*, 1975, Coloured Illustration 73) is a Nantgarw marked plate decorated at Swansea by William Pollard which he had presumably purchased at the final auction sale of Nantgarw porcelain in 1822 and had decorated locally thereafter.

The hand of Pollard can easily be verified on this plate in comparison with his other painting on Swansea china—an interesting example of Pollard's elegant floral painting on Swansea porcelain can thus be identified on the small watering can shown in Fig. 3.5, which is clearly a normal coffee can which has been cleverly adapted into this small porcelain "trifle" by the addition of a porcelain spout, a top stretcher across the rim and a gilt strap handle.

Fig. 3.5 Swansea porcelain, watering can, unmarked, a rare item decorated locally with a floral wreath by William Pollard showing the adaptation from a standard coffee can by the addition of a spout, lip and strap handle. The assignment of the artist as William Pollard is facilitated by the identification of his floral painting on other documentary pieces. Illustrated in W. D. John, *Swansea Porcelain*, 1958, Plate 51A and in Jones and Joseph, *Swansea Porcelain*, 1988, p. 59/3. *Private Collection*

The identification of individual artists and artisans who worked at Swansea and Nantgarw during their brief periods of porcelain production relies heavily upon the early historical research of William Turner, who published his classic text in 1897 (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897) after gathering statements from eyewitnesses and relatives of people who had actually worked at both china works. At first sight this may be seen as compelling forensic evidence indeed on which one can definitively formulate lists of people who had contributed to the operation of the two factories over the broad time span between 1811 and 1823. In several cases, children of the original factory workers were still alive when Turner began collecting information for his book in the 1880s—it is recorded that Henry Morris, a very accomplished Swansea artist, survived until 1876 and his family were able to recount personal information gleaned from his experiences at Swansea and his subsequent work endeavours to William Turner within the decade following Morris' death. Despite this apparently unique witness evidence, however, several authors have since questioned Turner's work, sometimes realistically in the light of archival documentation that has since appeared elsewhere, and it appears that several of these witness statements must be regarded as now being questionably without foundation. W. D. John (*Nantgarw Porcelain*, 1948) has suggested that the statements collected by Robert Drane, who was clearly held in much esteem by Turner, in particular be treated with some caution as they are of "*fundamentally unsound hypothesis and many of his statements are inaccurate and misleading"* according to Dr. John. These statements appear in the 32-page Appendix B (pp. 296–320) in Turner's book (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897) and entitled *Mannerisms by which the Different Artists who Decorated the Swansea and Nantgarw Porcelains may be Identified.* Drane, who was President of the Cardiff

Naturalist Society, is acknowledged by Turner as his mentor and indeed as the inspiration for his authorship of his book and he was clearly well respected for his scholarship and standing. As an illustration of one unsubstantiated statement that had no foundation whatsoever, for example, Drane maintained that most of the important examples of Nantgarw porcelain that were still extant in the country houses of Glamorgan and Monmouthshire were of local acquisition and therefore must have been painted by William Billingsley, Thomas Pardoe was therefore to be considered merely a minor and rather inferior copyist. Dr. W. D. John has countered this particular statement with his own personal study of these surviving porcelains still extant with local families and has concluded that some of these Nantgarw pieces identified by Drane were actually London decorated and the others were painted locally by Thomas Pardoe after closure of the Nantgarw factory in 1819, specifically in the period 1820–1823 when William Billingsley was no longer at the Nantgarw factory and was then employed in Coalport under the aegis of John Rose! Despite this indictment, Drane's statement has been accepted unequivocally by some and has itself given rise to the potential and unreserved misattribution of much Nantgarw porcelain in private collections as being by the hand of William Billingsley, even examples that have since been shown to be decorated in the London ateliers, where of course, Billingsley himself never worked. From his own studies of Nantgarw porcelains W. D. John has identified certain characteristics of London decorated items such as the dentil edge border gilding to plates, cups, saucers and bowls and the peculiar iridescence observed at glancing angles at the edges of enamelled floral decoration which can be attributed to the post-decorative re-firing process in the ateliers' kilns at different temperatures to those operational at the factory. This iridescence, which will be discussed in detail later in this current book, is never observed on local Nantgarw decorated and fired porcelains: there has been no specific comment to this effect but it would be very interesting to see if the Nantgarw porcelain plates decorated and fired at Swansea by Pollard and Morris have this characteristic iridescence or not—it would be extremely coincidental if the Swansea home-based muffle furnaces had the same high temperature profiles as the Nantgarw kilns, the difference in the London kilns producing the iridescence being attributable by Dr. John!

3.4 Swansea and Nantgarw Artists

It is appropriate that a summary of the Swansea and Nantgarw artists is now given here as provided by William Turner (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897) and also therein by Robert Drane, the first real attempt to categorise the artistic work of the two factories and which drew on two earlier but more general texts on ceramics by John Haslem and Llewellyn Jewitt in the 1870/1880s which merely mentioned the Nantgarw and Swansea factories but which have nevertheless provided some quite definitive and compelling evidence for personnel who worked at other porcelain factories, such as Derby. This link is actually quite relevant because of the peripatetic nature of the itinerant artists who travelled

between porcelain works such as Derby, Coalport, Spode and Worcester in the early 19th Century exemplified by William Billingsley himself in the years leading up to the foundation of the china works at Swansea and Nantgarw. Willaim Billingsley was certainly not alone in being a contributor to the artistic output at several British porcelain manufactories and reference to classic and authoritative books compiled on the Derby, Ridgway and Coalport china works bears witness to this practice (G. A. Godden, *Coalport and Coalbrookdale Porcelains*, 1981; M. Messenger, *Coalport 1795–1926: An Introduction to the History and Porcelains,* 1995; J. Twitchett, *Derby Porcelain*, 2002; G. A. Godden, *Ridgway Porcelains*, 1985). Drane (R. Drane, Appendix B, in W. Turner, *Ceramics of Swansea and Nantgarw*, pp. 296–298) starts his survey of resident artists with the statement that expert knowledge of the "hand" of the individual porcelain artists is much more reliable for the attribution of a piece of porcelain to the factory output than applied marks, which even in the latter quarter of the 19th Century were the subject of clever forgery and Turner himself admits to having been duped on several occasions by these fake marks as described earlier. Again, this statement is open to debate particularly since we have already recognised that ceramic artists did work at several factories and also purchased some output in the white from others whilst based there—so, in reality, the hand of a particular artist, even when indisputably recognised, is just not a reliable indicative guide to the porcelain manufactory concerned. The definitive list of artists at Nantgarw and the times they were at the china works according to the research of William Turner and Robert Drane and later authors can be summarised as follows:

William Billingsley: Nantgarw 1811–1814 and 1817–1819.
John Latham: Nantgarw 1817–1819.
William Pegg the Younger: Nantgarw 1817–1819.
William Weston Young: Nantgarw 1819–1822.
Thomas Pardoe: Nantgarw 1821–1822.
William Pardoe: Not at the porcelain factory but at Nantgarw 1833–1867 (reopened the pipeclay works at Nantgarw 11 years after closure of the porcelain manufactory).
Lavinia Billingsley: Nantgarw 1811–1814 and 1817, died in September 1817.
Mary Hewitt: Nantgarw 1811–1814 and 1817–1822(?), daughter of Hewitt the "thrower".
Betty Singleton: Nantgarw 1811–1814 and 1817–1819 (?), estranged wife of Thomas Singleton the "turner".

The last two named artists are recorded as working at Nantgarw but the times are not specified–the years noted here are estimated, therefore: Betty Singleton was William Billingsley's housekeeper and followed him around his various porcelain factory appointments—he left Nantgarw in 1819 and joined John Rose at Coalport where she is recorded as still being his housekeeper there. Mary Hewitt was the daughter of Thomas Hewitt the "thrower" at the Nantgarw china works so she would have been in residence for the full period of production at the factory but presumably not so after its closure was effected in 1822.

Dr. John asserts that he has found no evidence for the last three names on this list as having painted on Nantgarw porcelain and that the work of John Latham and William Pegg similarly remains unidentified. However, Dr. William Price of Llantrisant, the famous local medical practitioner, personally recalled to William Turner that Lavinia Billingsley painted porcelain at Nantgarw (W. Turner, *Ceramics of Swansea and Nantgarw,* 1897, pp. 100 and 205): Lavinia, the daughter of William and Sarah Billingsley, actually was in residence with her father and worked with him at several china works, firstly at Worcester from 1808 until 1811, then at Nantgarw from 1811 until 1814, then at Swansea from 1814 to 1817, and finally at Nantgarw in 1817, where she died on the 10th September of that year, aged 21 years. She is buried in Eglwyssilan Church under the name Beeley, which is believed was the surname adopted by Billingsley after the village of the same name near Chatsworth House in Derbyshire. Lavinia Billingsley has at times been credited with simple flower painting on locally decorated Nantgarw porcelain with chocolate edging—but again this statement has been discredited by Dr. W. D. John, who correctly has substituted Thomas Pardoe as artist in this role. In another statement, however, Dr. John has assumed that Sarah Billingsley would have been much more likely to have been engaged in painting porcelain in Nantgarw because she was the elder sister—completely disregarding the fact that Sarah had died before the second and major phase of production at the factory started later in 1817, but this still means that she could have still been involved in the phase 1 of the more limited production at Nantgarw! In fact, Morton Nance in his seminal and authoritative study of Swansea and Nantgarw ceramics (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 374) suggest that several simple pieces of locally decorated Nantgarw porcelain were by the hand of "the two girls", Mary Hewitt and Lavinia Billingsley, but he also points out a misinterpretation by Turner and attributes much of the simple decoration to highly accomplished London decorators. Again he (Morton Nance, *ibid.*, p. 386 and monochrome plate CLXVIIIA) attributes a Nantgarw tea cup and saucer simply decorated with floral sprays to Lavinia Billingsley.

The information given to Turner and to Drane about the workforce at the Nantgarw china works was supported by Richard Millward of Groeswen, who knew the people concerned and had actually worked there with them at the Nantgarw factory. He was able to cite Mary Hewitt as an artist, James Boden as a squeezer, Thomas Hewitt as a thrower, Thomas Singleton as a turner and Thomas James as a saggerman. Evan Thomas, Betty Singleton's brother confirmed to William Turner (*Ceramics of Swansea and Nantgarw*, 1897, p. 206) personally that "*she painted bits*" but Dr. W. D. John dismisses this observation out of hand. Millward also confirmed Betty Singleton as housekeeper to the Billingsley household with the added comment that Billingsley was unable to communicate except in English and through actions to his predominantly Welsh-speaking workforce. A letter from William Billingsley to his wife Sarah in September 1817 is of relevance here, since it recounts Billingsley's trauma and deep depression at the sad loss of both his daughters, Sarah (in January, 1817, at the age of 34) and Lavinia

(in September, 1817, at the age of 21). A most interesting feature of this letter is not the heartrending content of a bereaved father, but rather the address where the letter was despatched: to Derby, where William Billingsley's wife, Sarah, was still resident. It appears from other correspondence that Billingsley believed that it was too difficult to have his wife Sarah at Swansea or Nantgarw for his porcelain production venture, yet his daughters were both there, which immediately suggests that they were employed in some roles at the factories—but would this have been as artists? This idea that the daughters were otherwise engaged in employment at Nantgarw is supported by the presence of a housekeeper to the Billingsley household in the form of Mrs Singleton—who left Nantgarw with Billingsley in 1819 to look after his home in Coalport for the last phase of his working life until he died there in 1828. It is quite possible, therefore, that Lavinia Billingsley, and also perhaps her elder sister Sarah, did decorate porcelain first at Swansea and then finally at Nantgarw and that the information provided by Dr. William Price is vindicated—to find examples of their work on Nantgarw we should then perhaps look for a simple local decoration, such as that on the marked dessert plates shown in Figs. 3.6 and 3.7. The former is a grouping of blue delphiniums and orange pink roses in a rather simple but clean palette, obviously locally decorated and gilded and the specimen in Fig. 3.7 shows a simple wreath of copper-coloured bronze beech leaves, again locally decorated: the plate shown in Fig. 3.7 is a pattern which was believed by Dr. W.D. John to belong to the hand of William Billingsley but perhaps it could here perhaps be equally well attributed to another Billingsley! It is significant that Sarah Billingsley, William's elder daughter, who was married to Samuel Walker, is not mentioned at all by Richard Millward or by Robert Drane as being employed at Nantgarw, possibly because she had died in the January of 1817, before the second phase of porcelain production commenced there by Billingsley, Walker and Young: does this imply that Sarah did not work there in the first phase?

Fig. 3.6 Nantgarw porcelain, locally decorated dessert plate, marked impressed NANT-GARW C. W., with simple floral decoration of orange roses and blue delphiniums and gilt edging, which could be possibly attributed to the hand of one of the other less experienced local artists. *Private Collection*

Fig. 3.7 Nantgarw porcelain, locally decorated dessert plate, marked NANT-GARW C. W., with copper-coloured bronze beech leaves in a wreath border and with a similarly coloured edging and a simple gilt band centrally: although competently executed and the pattern is attributed to William Billingsley by W. D. John, this is possibly an example from a less well-known local factory hand? *Private Collection*

The case for John Latham as an established Nantgarw painter is even more obscure and although Turner has apparently identified a plate painted by him (*Ceramics of Swansea and Nantgarw*, 1897, p. 276) W. D. John has disputed this again for lack of evidence: this, of course does rather beg the question as in what role Latham was employed in Nantgarw—he was clearly an accomplished painter from the statement of John Randall, who had married his niece, and it is believed that he was indeed at Nantgarw between 1819 and 1820 after decorating porcelain purchased in the white from Coalport and Worcester (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897, pp. 100, 204/205). Again, the work of William Pegg at Nantgarw is also rather confused: born in Derby in 1795, Pegg completed his apprenticeship there in 1817 and then he walked to Nantgarw with his wife to take up employment, moving to Coalport in the spring of 1820 and, after several other moves to London and then back to Derby, he died in Manchester in 1867. Dr. John again disputes Turner's statements and believes he was misinformed as no record emerges in Young's notebooks of either Latham or Pegg having employment in Nantgarw.

A similar exercise was undertaken by Turner for the Swansea manufactory with its larger artistic workforce, but no dates have been proposed for their artistic tenure there: William Billingsley, William Pollard, Thomas Baxter, Henry Morris, William Weston Young, Matthew Colclough, George Beddow, David Evans and a mysterious French ceramic artist called "de Junic" or "Jenny the Frenchman" are all cited by Turner as artists at the factory.

It has, nevertheless, proved to be a challenge to identify the work of some of these artists on Swansea and Nantgarw porcelain—for example, William Pegg the Younger has never been attributed to specific items of Nantgarw porcelain decoration, when examples of his work on Derby are quite well respected and much sought after. According to John Haslem (J. Haslem, *The Old Derby China Factory* 1876), William Pegg the Younger, born in 1795, worked at Derby from 1810 until 1819, having taken his apprenticeship there in 1810, and he is not to be confused

with William "Quaker" Pegg, who also worked at Derby, but rather earlier in the years pre-1800 and then much later and conscience-smitten for Robert Bloor at Derby from 1813 until 1820, when he was going blind (J. Twitchett, *Derby Porcelain*, 2002). Clearly, there is some discrepancy here in that the younger Pegg must have left Derby a little earlier than thought (J. Twitchett, *Derby Porcelain*, 2002) to have spent the last 2 years with his friend William Billingsley at Nantgarw before its closure in 1819. There is documentary support for Pegg the Younger actually having worked at Nantgarw in the form of an account he wrote of his arduous trek he and his wife made on foot from Derby to reach Nantgarw (J. Twitchett, *Derby Porcelain*, 2002 and W. D. John, *William Billingsley*, 1968) and personally to Bemrose (*Bow Chelsea and Derby Porcelains*, 1898):

> He (William Pegg) and his wife often used to speak of the long and arduous pedestrian journey they had to make to reach such a distant and out-of-the-way place.

It should be noted that Dr. W. D. John has seemingly confused William Pegg the Younger's identity with that of William "Quaker" Pegg. It appears that William Pegg the Younger and his wife, Margaret, were personal friends of William Billingsley and they decided to join him at Nantgarw, where they remained for 2 years, presumably until Billingsley's departure for Coalport in 1819 upon closure of the Nantgarw factory. A collection of William Pegg the Younger's artistic work on ceramics is given in Murdoch and Twitchett (J. Murdoch and J. Twitchett, *Painters and the Derby China Works*, pp. 124–125, Trefoil, 1987). We can theorise as to the reason that Pegg's painting, which has been so admired at Derby along with the eponymous "Quaker" Pegg, has never been identified on Nantgarw porcelain when documentary evidence is available for its potential attribution; a possible explanation is that Pegg's work was very similar to and could therefore have been misattributed to either Billingsley or Pardoe? The identity of these 2 Peggs seems to be further confused with the existence of a letter from William "Quaker" Pegg to Robert Bloor, proprietor of the Derby china factory written on August 1st, 1817, from Swansea in which he states his intention to return to Derby following the significant but still only partial recovery of his eyesight and mental stability after some years absence recuperating in London; realistically, this letter means that "Quaker" Pegg cannot be the one and the same person who left Derby and joined Billingsley in 1817 at Nantgarw and that we are truly referring to William Pegg the Younger in this venture. It seems that William "Quaker" Pegg had appeared at Swansea seeking work there as a ceramic artist, an unsuccessful venture which was alleviated by the offer of his re-employment at Derby from Robert Bloor in a response to his letter. After his departure from Nantgarw upon its closure around 1819/1820, William Pegg the Younger left to pursue a career in the textile decorating business in Lancashire where he became quite well-off, as his photograph reproduced in Twitchett (*Derby Porcelain:* 1748–1848, p. 94, 2002) shows: he died in January, 1867, but not before he had met with Bemrose, to whom he recounted his experiences at the Nantgarw and Derby china factories. Bemrose states that William Pegg the Younger "*produced some of the finest botanical services ever got up in a china works*" at Derby during his time there but unfortunately a real confusion that has

been generated through his namesake "Quaker" Pegg being also based at Derby at a similar time: indeed, it is quite possible perhaps that some of the fine botanical painting attributed to William "Quaker" Pegg could have been the work of William Pegg the Younger—several authors have commented generally on the change in style of "Quaker" Pegg's botanical painting from his earlier work to his later work, attributed naturally enough to his deterioration of eyesight as noted in his letter written from Swansea and mentioned earlier, but this could equally arise from a confusion with the accomplished artistry of William Pegg the Younger?

There is a hypothesis proposed that the involvement of the younger, lesser known and less experienced "child" artists such as Lavinia Billingsley and May Hewitt would have been encouraged by their fathers and perhaps used in the production of additional ceramic service items locally to allow for kiln failure wastage … a reasonable way to generate and amplify their artistic skills, and surely some of their work would then have found a route into porcelain sales? Again, Lavinia Billingsley had already been employed as an artist at the prestigious Worcester porcelain manufactory by Messrs Barr, Flight & Barr since 1808, so she could hardly be termed "inexperienced". It is relevant to note here that one of the most well-known and accomplished Derby porcelain artists, William "Quaker" Pegg, was employed at the Derby China Works as a china painter, working 15 h a day at the age of 10! It has also been documented that several ceramic artists ran associated "cottage industry" decorating businesses from their own homes—indeed, William Billingsley's father, himself a ceramics artist who trained at Chelsea before moving to Derby, had a small porcelain firing kiln installed in the basement of his home where he experimented with the making of porcelain and its subsequent decoration in the well-lit attic, an industry in which the young William Billingsley was known to have been involved. Indeed, the initial partnership between Samuel Walker and William Billingsley was founded upon Walker's engineering expertise in kiln construction and Billingsley's decorative excellence of the fired ceramics. The Derby documentation also refers to an association between William Billingsley as a young apprentice and his mentor, Zacariah Boreman, who spent much time in the manufacture (and presumably its decoration?) of porcelain at the Billingsley home using the family home-based muffle furnaces and kilns.

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Chapter 4
A Chronological Summary of the Billingsley Family and Their Contribution to Porcelain Manufacture and Decoration

Abstract This chapter covers the birth and apprenticeship of William Billingsley at the Derby china works at the age of 16 to his reaching the epitome of porcelain decoration there in the 1790s and the accolade of the best painter of roses and flowers on china in England, to his departure in 1796 for a succession of other places, including Pinxton and Worcester, where he strove to develop and manufacture the finest porcelain body to demonstrate and set off his exquisite painting on china. Swansea and Nantgarw were the final two places, where he did achieve his ambition but with consequent appalling financial losses. The role of his immediate family, wife Sarah, daughters Sarah and Lavinia, and now his son-in-law Samuel Walker is reviewed and their support given to the William Billingsley's china manufacturing and decorating enterprise is delineated.

Keywords Derby china works · Pinxton · John coke · Brampton-in-Torksey · Mansfield · Worcester Barr Flight and Barr · Sarah Billingsley · Lavinia Billingsley

It is perhaps appropriate at this point to summarise comprehensively the rather complex itinerant movements of Billingsley and his family between the various porcelain factories with which he was associated, from which several useful pieces of evidential information can be gleaned—shedding some light particularly on his daughters, Sarah and Lavinia, and the possibility that they could have been actively engaged in porcelain decoration locally at Swansea and Nantgarw, along with some of the better-known artists.

William Billingsley was the eldest son of William and Mary Billingsley (nee Dallinson), who were married on October 9th, 1757, at St Alkmund's Church, Derby, where William Sr. had transferred in 1756 from his position as senior flower painter at the Chelsea manufactory to work for William Duesbury I, proprietor of the Derby china manufactory. William Billingsley Jr. was born in October, 1758, the eldest of six children of the marriage, and brought up in the family home at 22, Bridge Gate, Derby. His father, William Sr., died in March,

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1770. Mary Billingsley inherited the Nottingham Arms Alehouse, also in Bridge Street, Derby, and ran this as a commercial venture whilst still apparently living at the family home in the same street. On September 20th, 1774, William Billingsley was apprenticed by his widowed mother to William Duesbury I at the Derby china manufactory at the age of 16 years old, serving in this position for five years at the fixed rate of 5 s per week. After the completion of his apprenticeship, on November 4th, 1780, William married Sarah Rigley at St Alkmund's Church, when he was 22 years old. They had three children of the marriage, Sarah (born in 1783), James (born in 1793, who died in infancy), and Lavinia (born in 1795). Even in his early years he was well appreciated at Derby for his attractive flower painting, being understudy firstly to Edward Withers and then to Zacariah Boreman, who arrived at Derby in 1783. Boreman mentored Billingsley in his early years and they became great friends—it is recorded that they often spent much spare time at Billingsley's parental home in Bridge Street making experimental porcelain bodies and firing them in a miniature kiln there which had been installed by Billingsley's father some years earlier. It is believed that a decorating workshop also operated on the top floor of the residence, which had special windows installed for the provision of additional natural lighting. In 1779, William Billingsley completed his apprenticeship and, following his growth in stature under Boreman's tutelage, then succeeded Edward Withers as chief decorator at the Derby factory in 1790; by this time, he had moved into residence at the Nottingham Arms, where he lived until 1794; he is recorded as landlord of the Nottingham Arms in the parish registers up to this time under the name "Billensley".

At the end of 1795 William Billingsley left the employ of the Derby china works to set up a collaborative venture to manufacture porcelain at Pinxton with John Coke; the first trial kiln firings commenced at Pinxton in April, 1796, and active commercial production began in October, 1796, ceasing with a dissolution of the partnership between Billingsley and Coke on the 15th April, 1799, and confirmed by a legal announcement to that effect on June 18th, 1799. Billingsley then moved to Belvidere Street, Mansfield, where he established a porcelain decorating business, buying in porcelain in the white from Coalport, Worcester, Sevres and even Pinxton, documentation confirming the latter implied that his break with John Coke, still the owner of the Pinxton factory, was not an acrimonious one. We can theories about the catalyst which resulted in the departure of Billingsley from Derby, which several previous authors have always attributed to his drive to manufacture exquisite porcelain which befitted his superlative decorative flair. However, this does not really explain his collaboration with Coke at Pinxton: Billingsley was an esteemed decorator at Derby and had achieved the pinnacle of his ceramic artistic profession there already at the relatively early age of 32—in fact, Joseph Lygo, the well-respected London agent for Derby porcelain wrote a letter in late 1795 to William Duesbury II, who had assumed command at the factory following the death of his father in 1786, beseeching him to retain Billingsley at Derby at all costs otherwise the sale of Derby porcelain through the London business in which Billingsley's floral artistic decoration was so highly appreciated would suffer:

> I hope that you will be able to make a bargain with Mr Billingsley for him to continue with you for it will be a great loss to lose such a hand and not only that, but his going to another factory will put them in the position of doing flowers in the same way, which they are at present ignorant of.

Others have suggested that Billingsley fell out with Michael Kean, who took over at Derby after the death of William Duesbury II in 1796, but the chronology does not really match up here, even though Billingsley did not start producing porcelain at Pinxton with Coke until later that same year, as it is evident that he had already physically moved to Pinxton by that time. It is revealing to consider the Billingsley familial role here, since there has been an indication that Sarah, who would have been only 12 years old at the time of Billingsley's departure from Derby, and therefore too young for a formal apprenticeship, had perhaps already received some training at home in decorating porcelain? It is significant that on leaving Pinxton in 1799, the surviving members of the Billingsley family all moved to Mansfield and resided at Belvidere Street where documents confirm that Sarah the daughter was employed in "burnishing" porcelain. In late 1802, the family moved to Brampton-in-Torksey, taking up residence in Hall Close Farm, and remaining for only a few years, again decorating bought-in porcelain items until the 15th July, 1807. This was a significant episode in the life of the Billingsley family as it was in Brampton that their neighbour from a local farmstead, Samuel Walker, first met William Billingsley and also his eldest daughter Sarah, whom he eventually married in Worcester in September, 1812. At this stage in 1802, Sarah Billingsley Sr. did not accompany the family to Brampton from Pinxton but she returned to Derby, where she remained until she died in June 1825, aged 64. This is the first occasion where the Billingsley family separation is noted and it is significant that William Billingsley and both his daughters remained together thereafter as "team Billingsley", presumably employed in decorating or gilding and burnishing porcelain. Walker and Billingsley then entered into a partnership first at Brampton which lasted until the closure of the Nantgarw factory in 1819. It is commonly related that William Billingsley moved immediately on leaving Brampton in 1808 to join Martin Barr of Barr, Flight & Barr, at Worcester, where he was engaged mainly to improve the porcelain body quality, but he probably did also undertake some porcelain decoration too; just prior to this move it is recorded that William Billingsley met his wife for the last time in 1808 near Derby. An apparently out-of-context letter dated 24th October, 1808, has surfaced in which Sarah Billingsley has written to her Mother at Derby from Swansea sending greetings from William and Lavinia: at this time Sarah would have been 25 years old and Lavinia only thirteen, yet "team Billingsley" appears to be now operating fully as a working unit. Both Sarah and Lavinia are recorded as working for Barr, Flight & Barr at Worcester in 1808, as "burnishers"; Dr W. D. John has queried this, as contrary evidence seems to indicate that they were otherwise engaged there, but their roles are not specified further—the explanation of this could lie in the definition of burnishing (see later). In November 1812, intent on leaving Worcester William Billingsley and Samuel Walker, signed an agreement with Barr, Flight & Barr that they would not divulge the recipe for the experimental and very beautiful

white translucent china they had succeeded in making at Worcester to any third party, but critically, they were actually not forbidden to make this porcelain themselves: the question is whether or not this was the first experimental version of the later successful Nantgarw body? In consideration of this undertaking Billingsley and Walker were given £200 cash with the stipulation that a payment of £1000 would be made to Barr, Flight & Barr in the event of their disclosure of the formula to anyone else. Finally, William Billingsley, Samuel Walker, his new bride Sarah Walker and Lavinia Billingsley eventually left Worcester in 1812, by a tortuous route overland to Bristol and thence across the Bristol Channel to either Cardiff or Newport, and thereafter walking to Swansea. Billingsley was now set to embark upon the last phases of porcelain manufacture, briefly at Swansea and then at Nantgarw, then back to Swansea and finally again on to Nantgarw until the closure of the china works there in 1819. In the autumn of 1813, Billingsley (now calling himself Beeley), Walker, Sarah and Lavinia were at Nantgarw: there is a good deal of surmise as to the reason that Nantgarw, a small, isolated village was selected for their enterprise. The simplest answer is for practical reasons. Nantgarw had good supplies of excellent Welsh anthracite coal, prized for its thermal and calorific qualities, from the Rhondda Valleys for the firing of the kilns and the Glamorgan Canal had recently been constructed to pass through the proposed site for their factory, so facilitating the bringing in of china clay and raw materials through Cardiff docks, just seven miles away. The canal and docks would also be necessary for the export of their finished porcelain wares to London. It has been alleged that Billingsley and Walker selected Nantgarw because of its isolation, where they could effectively lose their identities after "debunking" from Worcester; however, the parting of the ways at Worcester with Messrs. Barr, Flight & Barr was quite amicable as seen from the legal document which specified that they were legally entitled to pursue the manufacture of porcelain using their new ideas and formulation—they, therefore, had no need for any secrecy! The £200 they had received from Martin Barr as a parting gift was supplemented by a further £50 from their own savings and provided start-up capital for the new venture at Nantgarw: a property was rented from Edward Edmunds adjacent to the Glamorgan Canal and two kilns, one large and one smaller, were constructed (see Frontispiece). Elis Jenkins (E. Jenkins, *Swansea Porcelain*, 1970) has described the foundation of the Nantgarw china works as a "*shoestring operation*" and after 2 months' initial construction and production costs, team Billingsley were in dire financial straits, when along comes William Weston Young, a surveyor from Newton near Porthcawl who injected £600 of his own money into the operation. This was clearly insufficient to get the china works properly established, and Young was bankrupted as a result: the three, Billingsley, Walker and Young, then wrote on the 5th September to the Secretary of the Lords of the Committee of Council for Trade and Plantations with a covering letter of support from Sir John Nicholls of Merthyr Mawr, a highly influential lawyer and local businessman with contacts in Government, requesting the sum of £500 to enable the enterprise to compete with the state-funded Sevres china factory in Napoleonic France, whose porcelain was still being purchased by the aristocracy at a very high premium in England despite the crippling naval blockade of French

ports. They also appealed to the Committee to increase further the tariff on French porcelain breaking the blockade—Waterloo was still two years away. All was to no avail and a polite refusal was given very rapidly to the fledgling application. Sir John Nicholls then sent specimen plates of the decorated Nantgarw porcelain to Sir Joseph Banks, a discerning china collector and highly influential member of the Royal Society, who seemingly was so impressed with their quality that he contacted a friend and Royal Society member, Lewis Weston Dillwyn from Swansea, inviting him to visit Nantgarw and report back on his findings.

Dillwyn, who had already tried unsuccessfully to make porcelain at Swansea and then had reverted to earthenware production using nine kilns, was duly impressed with the Nantgarw china and he entered into negotiations with Billingsley and Walker, with much to-ing and fro-ing particularly between Young and Dillwyn, as monitored in Young's records (W. W. Young, Records Office, Cardiff). Finally, on the 29th September, Billingsley, Walker and Young agreed terms for their transfer to Swansea to work on creating porcelain for Dillwyn—all this was achieved in just 3.5 weeks from the first request (known as the Memorial) being submitted to the Committee and its subsequent rejection. Jenkins (*Swansea Porcelain*, p. 14, 1970) intimates that the speedy solution and agreement resulted from the need of Billingsley for cash, but the latter also raised the stakes with Dillwyn by suggesting that Lord Dumfries (later the Marquess of Bute) was also interested in a bail-out purchase of the Nantgarw china works, which may have forced Dillwyn's hand. However, as noted elsewhere, The Marquess of Bute and his Land Agent, Priest Richards, were later ardent supporters of Nantgarw and perhaps this was a genuine approach made for a stake in Nantgarw porcelain manufacture in a competitive arena (W. D. John, William Billingsley, 1968).

This last phase contained the highest and lowest points of the Billingsley family's lives—the achievement of the best porcelain ever produced anywhere resulted but with an uneconomic production figure which could not be offset against the insatiable desire of potential purchasers and the deaths of Sarah and Lavinia in the same year, 1817, when tragically they were most needed for the second and most successful phase of Nantgarw production operations. Eventually, even after an injection of finance, this second phase of Nantgarw operations was terminated necessarily in late 1819: proof that Billingsley was still at Nantgarw in December, 1819, has been unearthed by Robinson & Thomas (*Not Just a Bed of Roses: The Life & Work of the Artist, Ceramicist and Manufacturer, William Billingsley*, p. 56, 1996) in the form of a receipt dated December 4th, 1819, for six Nantgarw Masonic emblem beakers received by Mr Thomas Jones. In April, 1820, Billingsley and Walker started at Coalport, where Billingsley lived together with Samuel Walker, Walker's two children and Betty Singleton. William Billingsley died at Worcester on 16th January, 1828, having outlived his wife and three children, and he is buried in an unmarked grave in Kembleton Churchyard near Coalport under the name of William Beeley. Samuel Walker did actually carry on with ceramics manufacture in the United States of America at the Temperance Hill Pottery, New Haven, where he set up commercial kilns for the manufacture of robust earthenware which was sold through outlets in New York. He died in

1880 at nearly 100 years of age. An excellent and eloquent statement by Robinson & Thomas (*Not Just a Bed of Roses*, page 56, 1996) succinctly summarises the achievement of William Billingsley:

> William Billingsley's time at Nantgarw had been both a success and a failure. He had finally achieved what in 1796 he had set out to do. He had produced, in quantity, a porcelain, the beauty of which equalled anything that had previously been manufactured. With little or no resources, he had achieved what it had taken the vast resources of both the French State and Monarchy to achieve at Sevres. However, the personal price was high for his time at Nantgarw cannot have been a happy one – beginning with the death of his beloved daughters, Sarah and Lavinia and ending with financial disaster which left him once again in poverty.

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Chapter 5
Burnishing and Gilding

Abstract A scientific and historical review of burnishing and gilding, the exceptional skill levels involved in the process of gilding porcelain and the dangers recognised for burnishers and gilders in the 18th and 19th Centuries due to their exposure to mercury is discussed. The role of William Billingsley's daughters, Sarah and Lavinia, in this operationat Swansea and Nantgarw, citing evidential documentation from their previous employment at the Worcester factory, is proposed and the effects of mercury poisoning are considered.

Keywords Burnishing · Gilding · Mercury poisoning · Cholera epidemic · Sarah Billingsley · Lavinia Billingsley

The art of burnishing gilded porcelain has been first accredited historically to Pierre-Joseph Macquer at the Sevres manufactory and the operational procedure was steeped in mystical alchemical practices dependent upon the application of thin sheets of gold leaf, triturated with essential oils, gums and minerals and then subjected to agate polishing. In the early 1760s Josiah Wedgwood revealed his formulation for a gilding recipe comprising 10 parts of gold powder, mixed with 1 part cerussite (lead carbonate), compounded with gum and water and then fired, which could then be polished unidirectionally with agate powder. Dr. Wall at Worcester in 1783 promoted his own method based on a recipe of the Duc d'Angouleme in Paris for a better gilding involving the grinding of metallic mercury with brown gold (a mixture of pure gold and iron sulfate, vitriol) and subsequent firing at a low temperature to yield, firstly, a rather dull gilt finish which could then be burnished to a high gloss gilding. A further variant was reported by Henry Daniel in 1816 in which he dissolved 1 ounce of pure gold in *aqua regia*, which was precipitated with a strong solution of copperas (iron sulfate), filtered, then dried and washed with spirit of salts to remove remaining iron: then, 1 ounce of the treated gold was added to 15 pennyworths of quicksilver and 20 grains of magister of bismuth (bismuth oxide) and the mixture ground finely for half an hour. The hazards of working in the open and unprotected with mercury were even

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then not fully realised, but were considered "*somewhat irksome to the eyes and teeth of the gilders and burnishers*"!

In a 19th century directory of dangerous occupations, that of porcelain gilding and burnishing was noted as being particularly hazardous, coupled with the fact that often young people and children working in the manufactories on the decoration of ceramics were exposed to high concentrations of mercury vapour and even to the harmful effects of liquid mercury in amalgams through unprotected skin absorption—a British Government safety warning later blandly stated that "*There is no safe level of mercury exposure*". This warning, however, came too late to prevent horrible, lingering deaths for those who had the misfortune to be exposed to mercury poisoning in the enamelling ateliers, for which there was no antidote. It has been recorded anecdotally that many children were employed in gilding silver pieces in Birmingham in the late 18th Century because of their dexterity, but the average age at death of these child gilders was only 12 years old! We have already recorded that both Sarah and Lavinia Billingsley died at Nantgarw working for their father in 1817: he was devastated by their deaths and remarked on the speed of their passing. The symptoms of mercury poisoning, known as hydrargyria or mercurialism, are now only too well known and from William Billingsley's meticulous and harrowing description of his daughter Lavinia's suffering in her last moments, it is quite possible that she was slowly dying from exposure to mercury: the classic symptoms of abdominal pains, corrosive effects on the skin tissue, nausea, persistent sweating, tachychardia, vomiting and death following within a few days are hardly the effects of a bad cold, as believed by William Billingsley in his letter to his wife Sarah in September, 1817, and these observations really better fit the advanced stages of mercury poisoning. Of course, other possible contributing factors and undiagnosed illnesses could have been responsible for their deaths, perhaps compounded by poor sanitation and the toxic contamination of drinking water, polluted air from industrialisation and the effects of consumption of bad food could also have been be responsible. Even in 1858, some 40 years after Lavinia's death, the effects of copper smelting on the local populace in Swansea, with the copious production of noxious sulphurous and nitrogenous fumes and particulate toxins containing arsenic, cadmium, zinc and phosphorus, were actually considered "beneficial" to the local populace in a rather dismissively trite and "whitewashed" report to the Board of Trade made by a local medical practitioner, Dr. Thomas Williams. In the early 1800s, of course, the great cholera epidemics that were the scourge of industrialised Victorian Britain and indeed most countries where large numbers of workers lived in appalling housing and unsanitary conditions had not yet arrived or at least were not recognised as such and it is possible that small localised outbreaks were left unrecorded. Surely, such an outbreak of this type, if responsible for the deaths of Lavinia and Sarah Billingsley, would have caused much more widespread affliction and death in the Nantgarw locality and especially would have resulted in similar debilitating effects on the other members of the immediate Billingsley household? Although endemic in late 18th Century India from an ascribed source near the Ganges Delta, a particularly virulent strain of *Vibrio cholera*e was noted near Jessore in 1817 and this spread

rapidly through China to Russia, where the first cholera epidemic was recognised and documented in 1823. The first incidence of cholera in Britain was confirmed at Sunderland in 1831, brought in by passengers and sailors on a ship from Baltic Russia, for which the imposed appropriate quarantine notices were ignored upon disembarkation of the passengers and crew members. Incorrect diagnosis and attribution of cholera to airborne miasma and bad smells rather than sewage contamination of food and drinking water for a long time delayed treatment until the 1870s, but the symptoms of dysentery, vomiting and profuse sweating were not dissimilar to those recounted by William Billingsley for Lavinia's fatal disease. However, for the reasons stated above, it would seem that mercury poisoning was possibly the more likely cause of her fatality in view of her stated occupation.

A little known rider to this discussion is provided by the change in meaning of the word "*burnishing*" over the last two centuries: nowadays, we take this to mean the polishing of an applied coating to a metal or ceramic base—and, of relevance here specifically, the gilding process in ceramics production—but in earlier times there are references to burnishing being the process of application of pigment to a substrate through the rubbing of textile or paper transfers onto ceramic or other material bases (rather akin to the transfer process of lead pencil onto paper via brass-rubbing, where an obvious etymological link with burnishing is apparent). Hence, the applicators of transfer printed decoration onto porcelain overglaze or underglaze before final kiln ceramics firing were also called *burnishers*—the link with gilding burnishers being clearly the rubbing processes involved in each case. Would it be reasonable therefore to suggest that the Billingsley daughters who were both employed firstly at Worcester and then in his Swansea and Nantgarw enterprises were both perhaps decorators of transfer ware and/or gilders? There are many reports of young people especially girls being employed in ceramics factories for such work; for example, of the workforce comprising a maximum 20 people at Nantgarw according to the statement Richard Millward to William Turner (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897), he and other contemporary observers note that about 12 were classed as children or young adults. We can theorise as to their jobs, which probably ranged from fetching and carrying materials to possibly even simple decoration, transfer printing and even perhaps more skilled burnishing and decorating duties?? It is interesting that Roger Edmundson in his article on the Billingsley artists at Pinxton (*Welsh Ceramics in Context, Part I*, 2003) has made a chronological list of artists employed at Pinxton from 1796 to 1802 and Sarah Billingsley is already recorded there in this context, so by the time she went to Worcester with her father in 1808 she would have been an accomplished and experienced decorator of porcelain.

Therefore, this seems to indicate that, until now, the important role of the Billingsley father and daughter team has gone unrecognised—after all, as has been pointed out above, it is of relevance to examine reasons for William Billingsley and both daughters, but not his wife Sarah, being actively engaged in his porcelain manufacturing and decorating business as employees—the Billingsley team of father and 2 daughters moved together from place to place whilst the mother returned to Derby after their departure from Pinxton in 1802 and remained there;

there can only be one logical reason for this situation and that is that both daughters were a crucial part of his operations, otherwise they should have remained at home with their mother. Of course, Sarah was married later (in 1812) to Samuel Walker, co-investor with William Billingsley in Swansea and Nantgarw, but her role at these factories surely extends beyond her marital situation. The cursory dismissal of Sarah and Lavinia Billingsley from their participation in decoration including the gilding of Swansea and Nantgarw porcelains by some authors is not really acceptable and more research needs to be undertaken towards the identification of their work—if this can be achieved for the attribution of more famous decorators such as Henry Morris, Thomas Pardoe, William Pollard and David Evans then surely a similar exercise could be undertaken for the work of the Billingsley daughters, accepting that if they were involved with only the gilding process this would be difficult, as unlike other factories such as Derby, the gilders at Swansea and Nantgarw did not have assigned numbers but like their father, who could say they were not only accomplished gilders (Billingsley himself was accorded with a gilding number 7 at Derby—and indeed he used this on several of his most important pieces, such as the *Prince of Wales* service and the *Rothschild* service) but also rather competent flower, animal or landscape painters?

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Chapter 6
Commercial Exploitation

Abstract The commercial exploitation of china manufacture and the incorporation of ideas into contemporary competitors factory products is raised in this chapter with the relevant example of a case study of a visit of Robert Bloor, proprietor of the Derby china works, to the workshops of John Sims in London where he purchased several Nantgarw plates which had been decorated exquisitely with various scenes by James Plant. Bloor then used these plates as an inspiration to create the most sumptuous china service ever made at Derby for Lord Ongley: previous authors have stated that these Derby plates were identical to the Nantgarw versions but the evidence for this is re-examined and investigated here.

Keywords Robert Bloor · Bloor Derby · James Plant · Lord Ongley service · John Sim's atelier · Commercial exploitation

It should be mentioned here that some contemporary appropriation and aggressive acquisition of Welsh china patterns seems to have occurred, which perhaps approaches the category of commercial exploitation and espionage in that rival porcelain factories attempted to copy the success story of Swansea and Nantgarw china and thereby marketing the copied wares as their own—of course, evidence for this practice is covered in the maxim, *success breeds success!*! An interesting and very relevant example of this practice is that of the *Lord Ongley* service, a very fine and expensive Derby dinner-dessert service made for Lord Ongley in 1820–1821 and painted by William Corden, so it has been proposed, at Derby (J. Twitchett, *Derby Porcelain: An Illustrated Guide, 1748–1848,* 2002???; p. 26, Colour Plate 202) which apparently bears the correct painted crown and Bloor Derby marks of the Derby porcelain factory but which is clearly and unashamedly modelled on a characteristic Nantgarw plate design with a very similar moulded border and raised gilding (which itself is a non-standard Derby creation), and with a central subject of children at play. It is on record (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, quoting John Haslem, *The Old Derby China Factory*, 1876) that William Duesbury II, or more likely

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Robert Bloor perhaps as proprietor of the Derby China Works at that particular time, visited the workshop of John Sims in Islington, London, around 1820 and saw there several exquisite Nantgarw plates of exactly the same form which had been painted by James Plant, which he immediately purchased and instructed to be copied on his return to Derby. It is written in the Derby day books that each plate from his service cost Lord Ongley the sum of 5 guineas, an astronomically large amount at that time. Haslem (J. Haslem, *The Old Derby China Factory*, 1876) writes:

> One of the costliest services ever got up at Derby was for Lord Ongley, about 1820–1825, a dessert service very richly painted and elegant. Plates averaged about five guineas each. Several were copied from Nantgarw plates decorated at John Sims' establishment for which Mr Bloor has purchased them.

It is interesting that William Corden is designated as the decorator for this prestigious service: he was born in Ashbourne in 1797 and was apprenticed at the Derby china factory in 1811 being an accomplished landscape and figure artist. It is recorded by Haslem (*The Old Derby China Factory*, 1876) that Corden departed from Derby soon after completing his apprenticeship to work in London as a portrait painter. The normal apprenticeship was for 4 or 5 years only, so he would have left Derby around 1816 or 1817. Twitchett (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002) believes that the *Ongley* service would have been decorated by Corden around 1820–1825, but this is surely too late—and, furthermore, it is not immediately obvious that the London ateliers would still be purchasing Nantgarw porcelain in the white for decoration some 6 years after closure of the factory; also, it is clear that after cessation of kiln production with the departure of Billingsley and Walker from Nantgarw in late 1819, Thomas Pardoe locally decorated all remaining stock for the final sales up to 1823 when he died. We can therefore, now propose an alternative chronological scenario for the creation of the *Ongley* service which better fits the time frames involved: Robert Bloor would have seen the work of James Plant at John Sims' atelier sometime in 1817–1818, where he would have purchased several Nantgarw plates decorated with figures in landscapes. Having taken these back to Derby, Bloor then engaged William Corden, an esteemed landscape and figure artist who had recently departed Derby to work in London, to paint the *Lord Ongley* service, probably in 1818 or 1819, considerably earlier than several previous authors have suggested.

The surviving pieces of this service are now in the possession of a descendant of Sir William Pennington-Ramsden of Muncaster Castle in Cumbria, Peter Pennington-Thomas, where their identification as being from the long-lost *Ongley* service resulted from some superlative detective work carried out hitherto by the late and esteemed Derby porcelain historian John Twitchett, as recounted in his book on Derby porcelain (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002). On first inspection, an *Ongley* service plate could very easily be confused with Nantgarw, so similar is the gilding, moulding and decoration. Similar rim mouldings with high quality floral decoration are also to be found on John Rose's Coalport plates of the 1815–20 period as shown in Godden's article (G. A. Godden, *Welsh Ceramics in Context I,* plate 8. 16, p. 146 and ff.; R. Edmundson, *Welsh Ceramics in Context, Part 1*, 2003). Examples of the Nantgarw moulding can be seen in Figs. 8.1 and 12.1, representing ungilded and gilded versions, respectively.

The acquisition of an unspecified number of Nantgarw plates from John Sims' workshop by the Derby China Works by Robert Bloor for copying purposes was certainly not a unique occurrence, apparently, and it is also interesting that after copying at Derby these Nantgarw plates were then sent for "disposal" to the Bloor Derby workshop in London in 1848 on closure of the Derby china works—from where Sir Henry de la Beche acquired several examples for his Museum of Practical Geology in Jermyn Street, London. One of these decorated with two children's figures by James Plant in John Sims' workshop is now on display in the National Museum of Wales, Cardiff, and was judged to be identical in figure composition and execution with an another example stamped Bloor Derby on the reverse in the collection of Morton Nance (shown in Plate CLXXIIIA of E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, footnote p. 388 and ff.). Truly, imitation must be considered as the most sincere form of flattery!

Actually, a more detailed micro-comparison of photographs of these two plates by this author in the course of writing this text reveals several small differences related to the edge gilding decoration. A close examination of the *Ongley* service plate shown in Twitchett (*Derby Porcelain: 1748–1848*, 2002, p. 217, Colour Plate 202) raises a very interesting question that as yet cannot be answered: there is a statement on record that Robert Bloor of Derby had also acquired some Nantgarw pieces in the white from the Robins & Randall atelier, probably in 1820, and that these were then *decorated* in a similar style at Derby—could it be then that some of the Ongley service could possibly be really Nantgarw and not Derby? The whole style of the plate and its moulding is very unlike the characteristic Derby product of the period and what is more, seems not to have been reproduced generically in other Derby services apart from the possibility of only one other (J. Twitchett, *Derby Porcelain,* 2002)—therefore, is this effectively an almost unique quality production, which raises the question of the economic viability for a leading factory to undertake such a commission in a time where increased competition from other quality manufacturers was intense in the post-Napoleonic era. An even closer examination reveals that the moulding on the *Ongley* service plate seems to be almost identical with that of its Nantgarw analogue on a twelve—lobed dessert plate with six vignettes of flowers. It is intriguing to contemplate exactly how the *Ongley* service was produced at Derby with such a closely similar design to its Nantgarw analogue: did Robert Bloor subsequently create new moulds from his Nantgarw acquisitions or perhaps he even used some Nantgarw china for decoration at Derby—in this respect it is intriguing that documentation exists that Robert Bloor purchased Nantgarw porcelain *in the white* from Robins and Randall's atelier? We can theorise as to the purpose of this: porcelain in the white is intended for subsequent decoration elsewhere—but did this also perhaps then occur at Derby? The gilding is so prolific on the *Ongley* service that the translucency of the porcelain is hidden but several parameters could be looked for in a detailed inspection to test this hypothesis—firstly, evidence of any obscured Nantgarw impressed mark existing beneath the over painted applied Bloor Derby marks; secondly, the size of the plate compared with Nantgarw (a mould made directly from a Nantgarw

plate would give rise to a smaller piece in the copy due to shrinkage effects in the porcelain paste upon firing; thirdly, does the moulding penetrate through to the rear of the plate as expected for its Nantgarw analogue; fourthly, is there evidence of the typical crazing on the glaze which characterises the Bloor Derby product and not the Nantgarw, and fifthly, is the translucency what one would anticipate from Nantgarw or Bloor Derby? The idea that an impressed Nantgarw mark could be obscured by another mark is not such a ridiculous one as it may at first seem, as the author has an item of Nantgarw porcelain in his own collection which was acquired from a dealer and sold as "Victorian china, Staffordshire" but which has a clearly impressed genuine NANT-GARW C. W. mark, which was partially obscured by glaze infill and which itself was only manifest when viewed by transmitted light! In this case the clear translucency and Nantgarw moulding should have been indicators of the source factory but these were patently ignored by the retailer. It is realised that only a relatively small portion of the original *Ongley* service has probably survived but the remnants in Muncaster Castle would certainly repay a meticulous forensic examination to determine their origin according to the five parameters given above—for example, it would be extremely interesting for this discussion if any of the limited number of surviving items of the *Ongley* service at Muncaster Castle were found to contain both Nantgarw and Derby porcelain exemplars! Some further thoughts and a visual analytical comparison between the precursor Nantgarw moulded porcelain plates and those of the *Ongley* service are detailed later here in Appendix E.

Nevertheless, in contrast, "false" Swansea and Nantgarw marks are to be encountered quite frequently on porcelain from other factories (R. Edmundson, *Welsh Ceramics in Context I,* p. 209 and ff.) and the red stencilled script mark on the fake "Nantgarw" spill vase formerly in the Morton Nance collection is also illustrated there (R. Edmundson, *Welsh Ceramics in Context I,* plate 11. 26, p. 210), as described earlier, complete with a bogus pattern number in red stencilled script.

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Chapter 7
Service Types and the Importance of Nomenclature in Their Attribution

Abstract A description of the types of porcelain service manufactured at Swansea and Nantgarw and the special services recorded as being owned by notable people: the concept of attribution of a named service commission and how this originated and their historical importance for chronology of output from a factory and also the association of a particular artist and decorator with such a named service. A listing is prepared of the main sponsors of the Swansea and Nantgarw factories who reasonably might have been expected to have ordered such services from the fledgling factories in support of their activities and from which an idea could be gauged of potential missing services of this type which may still be in existence. Finally, it is realised that the dispersal of large remnants of Swansea and Nantgarw services at auctions during the last century would probably have now resulted in the loss of context with their original attributions.

Keywords Named service · Nomenclature · Sponsors of Swansea and Nantgarw · Burdett-Coutts · Lysaght · Duke of Cambridge

At both Nantgarw and Swansea the production of tea and coffee services, in which the tea cups and coffee cups or cans shared a saucer (so forming a "trio"), far exceeded the number of dessert and dinner services produced. In a special category, large breakfast services included plates and additional items such as muffin dishes, egg cups and a centre stand, as well as teapots, stands, sucriers and slop bowls. The latter, which are sometimes functionally now confused with sucriers, despite the fact that sucriers were made with lids or covers, were used for rinsing cups in water by the host or hostess before their re-use at the table—consequently, they often suffered considerable impact damage in daily use. Tea and coffee services generally did not include small plates, but did include a teapot or coffee pot, an appropriate stand and a milk or cream jug. Dessert services could have several dishes of various sizes, along with tureens and covers, and dinner services were equipped with larger plates, soup plates, soup tureens, ice pails and spill vases as requested; it is still a matter of conjecture as to whether or not porcelain soup ladles were an integral part of Swansea or Nantgarw dinner services as none have

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been identified so far—despite there being an indented provision for resting a ladle in the soup tureen—which could mean that the use of silver ladles or large serving spoons would normally be anticipated for this purpose. At Swansea, there are three well-known named services, namely the *Lysaght*, the *Marino Ballroom* and the *Burdett—Coutts*, which are compound dinner and dessert services: these are therefore unusually large and contain several pieces which are rarely found elsewhere. Each of these services would be expected to comprise about 200 pieces. W. D. John (*Swansea Porcelain*, 1958) has clearly identified at least six different types of dessert service shape at Swansea, including a rare type which has a very attractive beaded moulding: in his study, Dr. John has had a particular advantage in being able to examine many such services which had survived in a reasonably complete form as acquired by collectors at auction sales from the early 1900s and hence he was able to classify these before they were broken up and dispersed in later auction sales. Rarely does a large Nantgarw or Swansea service now appear as one item at auction and often these would have been split up into several lots for modern auction: exceptions in recent times are the *Earl Spencer* Nantgarw service remnants auctioned at Christie's in 2009 and the *Duchess of Richmond* Nantgarw service of some 20 pieces, which was auctioned and purchased as a complete lot in 2015—both of these still comprise only surviving remnants of what were originally larger component services. When a service has been dispersed, of course, it is difficult afterwards to quantify its original composition and to identify the presence of additional and perhaps unusual pieces that were commissioned initially on special order to complete the sale.

The acquisition of high quality porcelain dinner, breakfast, dessert and tea services, as well as ornamental pieces and decorative cabinet items, by Royalty, the aristocracy, gentry and wealthy sponsors of porcelain manufactories during the 18th and 19th centuries was appreciated as a desirable social accomplishment as befitting one's social standing, prestige and wealth (G. Godden, *Welsh Ceramics in Context, Part 1*, 2003). It is recorded (W. D. John et al*., Nantgarw Porcelain Album*, 1975, p. 27) that:

> The Prince Regent, later King George IV, purchased **quite a number** of splendid complete services, some of which were presented to his brother the Duke of Cambridge on the occasion of his marriage.

These services would be expected to be demonstrative of the highest quality of factory output and artistically employing the best decorators and gilders available; if not decorated locally, large quantities of porcelain from Swansea and Nantgarw were sent to established workshops, ateliers and retailers in London, such as Pellatt & Green, Mortlock's and Robins & Randall, glazed and in the white for decoration according to the commissions received. Classic examples of such important and *named services* can be cited for many factories, such as the *Prince of Wales* dessert service in Derby porcelain (1787) carrying the pattern number 65 (Fig. 7.1), the *Barry-Barry* dinner-dessert service (Fig. 7.2) in Derby porcelain (ca. 1800) and the sumptuous *Royal Rockingham* dinner-dessert service (1835) (see Cox & Cox, *Rockingham Porcelain*, 2005, for illustrated examples of this service) which was commissioned by King William IV but was only delivered

after his death in 1836 and used at the Coronation Banquet of Queen Victoria at Windsor Castle in 1837. The dinner-dessert service commissioned by the Earl Camden from the Derby porcelain manufactory in April, 1795 (Fig. 7.3), is fully documented in existing correspondence between William Duesbury of the Derby factory and Lady Camden, giving details of its composition, number of items, its decoration and painter, along with its assigned pattern number of 185. Duesbury commented that this service was at that time the most expensive ever created in his Derby factory, as befitting its exceptional quality of decoration and size (being some 100 pieces); naturally, William Billingsley, the most prestigious ceramic artist then employed at Derby, was charged with the painting of the *Earl Camden* service. The initial cost of the *Camden* service was 160 guineas, which was up to ten times the cost of other contemporary, smaller dinner—dessert services from the Derby factory, yet it is supposed that modern porcelain collectors would now happily pay ten times this sum now for one *Earl Camden* service plate!

The importance, therefore, of the concept of the *named service* to historians of porcelain manufacture cannot be emphasised too highly. Twitchett (J. Twitchett, *Derby Porcelain:* 1748–1848, p. 234, 2002) refers to such a named service as a "*special service*", which has not been ordered by pattern number but to a special and unique commission: however, this ignores the fact that even named or special services were still often recorded under an assigned pattern number, even at Derby, the subject of his monograph. Examples include the *Prince of Wales* service (pattern number 65), the *Earl Camden* service (pattern number 185), the *Rothschild* service (pattern number 100) and the *Margrave of Anspach* service (pattern number 139), all of which are believed to be unique services, unlike others with accorded pattern numbers which are generic. The advantage to later historians is that the pattern number in the pattern books was usually recorded against the artist and gilder who carried out the work, giving a useful crosscheck against other documentation for provenancing purposes and provides a useful basis for the identification of the artist on other less well-referenced works and more subtly affording the historical researcher a useful assessment to be made of development and changes in artistic style of a named artist with time. One still has to be rather careful in assigning artistry in some cases, even when a specific painter is assigned to the commission: for example, the Duke of Northumberland commissioned his large dinner-dessert service from Derby in the 1780s, with Edward Withers as the recorded artist in the factory workbook—however, in 1790, the Duke then placed an order for an additional 20 soup plates from the Derby factory to be decorated in exactly the same pattern and the order was accomplished by the most accomplished painter employed at Derby at that time, namely William Billingsley. A sample of Billingsley's rose painting on the *Duke of Northumberland* service is illustrated in W. D. John (*William Billingsley*, 1968, Colour Illustration 12 and also B/W illustration 38B); this documentary service addition, of course, assists in the identification of Billingsley's rose painting for which he was famed on other decorated porcelain.

Fig. 7.1 Dessert plate from the *Prince of Wales* service, pattern 65, puce painted mark of crown and crossed batons, gilder's mark "8" in puce ascribed to William Longden, Derby porcelain, ordered by HRH George, Prince of Wales, in 1787, and painted by William Billingsley with a small central rose in a circlet of gold dots, fine gilding and with dawn pink edging. Illustrated in W. D. John, *William Billingsley*, Plate 28, and described in J. Twitchett, *Derby Porcelain:* 1748–1848, 2002, pp. 254–255, quoting a letter from Joseph Lygo to William Duesbury II on May 21st, 1787, for a complete dinner service costing £26-5-0. *Private Collection*

Fig. 7.2 Dinner plate from the *Barry-Barry* service, Derby porcelain, showing sumptuous decoration with a wreath of beautifully executed pink roses at the rim and oak leaves at the centre, a cobalt blue ground with gold stars, enclosing the arms of Pendock-Barry; attributed to William Billingsley (W. D. John, *William Billingsley*, 1968), but now open to a possible reassignment (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002, p. 219) on supposedly chronological grounds. Illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, Colour Plate 92. *Private Collection*

Fig. 7.3 Dessert plate from the *Earl Camden* service, the most expensive Derby porcelain service ever created at its time, 1790, marked with the puce mark of crossed batons and a crown with pattern number 185, painted by William Billingsley with a wreath of pink roses and rosebuds on an apple green ground. Illustrated in W. D. John, *William Billingsley*, 1968, Coloured Plate 16 and Plate 61B; and also in J. Twitchett, *Derby Porcelain:* 1748–1848, Colour Plate 156, 2002, p. 180. *Private Collection*

7.1 Sponsors of Swansea and Nantgarw Porcelains

It might be a reasonable expectation that the original sponsors and supporters of the Swansea and Nantgarw factories would themselves be commissioners and recipients of "*named services*"—what better way would there have been of demonstrating one's support and pride in the achievements of the two fledgling china works? Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 363) has researched much relevant extant documentation and has discovered a list of patrons (which he has termed *subscribers*, after William Weston Young's own terminology) of the Swansea and Nantgarw factories, whom he has listed as follows:

Nantgarw: William Weston Young of Nantgarw; The Hon. William Booth Grey of Duffryn St. Nicholas, High Sheriff of Glamorgan; John Crichton Stuart, The Marquess of Bute, Cardiff Castle (and his agent, E. Priest Richards of Cardiff); Sir John Nicholl, Merthyr Mawr; Robert Jones, Fonmon Castle; Wyndham Lewis, MP, Green Meadow, Llanishen; Dr. Whitlock Nicholl, Cowbridge; The Mansell Talbots of Margam Abbey; Griffith Llewellyn, Baglan Hall; The Rev. William Perkin M. Lisle, LL. D, Prebendary of Llandaff and Rector of St Fagan's (often referred to in documents as Dr. Lisle); Lord Windsor, St Fagan's; R. Franklin Esq.; Thomas Wyndham, Dunraven Castle, was initially approached and he reacted favourably to the invitation with an offer of support but he died in November, 1814, before his support could be realised. In addition, Young had

several influential business friends and contacts through his surveying profession who probably also supported the financial start-up of the Nantgarw factory, which included: Walter Coffin, Llandaff Court; John Bruce, Duffryn Aberdare; William Crawshay, Cyfarthfa Castle, Merthyr; Crawshay Bailey, Merthyr; Richard Hill, Plymouth Lodge, Merthyr; Bacon, Aberaman; John Edwards, Rheola House, Vale of Neath; Mitchell, Aberdare; William Forman, Penydarren, Merthyr Tydfil; Richard Blackmore, Melyn Griffith; J. J. Guest, Dowlais Ironworks; T. B. Rous, Courtyrala; Thomas Edmondes, Cowbridge; R. H. Jenkins, Llanharan House, Llantwit Fardre; William Williams of Aberpergwm, Vale of Neath; The Rev. John Traherne, St Hilary, Cowbridge; William Vaughan, Llantrisant;Edward Edmunds, Penyrhos, Nantgarw (landlord of the Nantgarw factory site) and William Lewis of Great House. In total, the relatively handsome sum of £2100 was raised to start up porcelain production at Nantgarw in the second phase after 1814 which can be compared with the modest sum of £200 that was invested by Billingsley and Walker in their first phase Nantgarw operation in 1812, this being their severance payment received from Barr, Flight & Barr, Worcester.

Swansea: The main investors for Swansea porcelain production in the second phase, the so-called Bevington period, when T & J Bevington and Co. bought out Lewis Weston Dillwyn for £9200 on September 23rd, 1817 were: John Bevington (0. 2 share), Timothy Bevington (0. 2 share), George Haynes Senior and George Haynes Junior (0. 3 share jointly) and John Roby (0. 3 share). Interest was still maintained by Samuel Walker, Sir John Nicholl, John Vivian and Lewis Weston Dillwyn (who still carried on with earthenware production at Swansea following the sale of the porcelain china works to the Bevingtons), with support from Sir Henry de la Beche, Sir Joseph Banks and Joseph Maryatt.

7.2 A Cautionary Word

Analysis of the possible named services that could be directly attributable to these benefactors and subscribers, who total 17 in all between Swansea and Nantgarw, reveals that only 5 can now be definitely assigned to named services commissioned from the factories that have so far been identified: in some cases, these benefactors ordered multiple commissions, e.g. The Marquess of Bute, Sir John Nicholl, John Vivian and Wyndham Lewis are accredited with ordering several services of Welsh porcelain. However, it must be regarded as rather strange that so many important personages locally apparently refrained from ordering porcelain services when, in contrast, their counterparts elsewhere in the country patronised both factories. Indeed, a reasonable explanation for this discrepancy, of course, is that there are a significant number of potential named services that have yet to be identified as such from the Swansea and Nantgarw china factories from the surviving porcelains that have come through to the 21st Century: Robert Drane has drawn attention to the number of Swansea and Nantgarw items that still existed

in local estates and country houses in the late 1800s (W. Turner, *The Ceramics of Swansea and Nantgarw*, 1897) and he has cited the names of local families who still possessed services and other items of Swansea and Nantgarw porcelain in the 1880–1890s period—from his extensive list, the names of families such as the Evans Bevan of Cadoxton House, Neath, the Moore-Gwyns of Duffryn House, Neath, Wyndham Lewis of Bridgend, Sir J. T. D. Llewellyn of Penllergaer, Lady Swansea of Singleton Park, Swansea, Glynn Vivian of Clyne Castle, Swansea, Colonel Young of Preswylfa, Neath, W. Williams Esq. of Aberpergwm House, Neath, and the Marquess of Bute, Cardiff Castle, are all registered by Turner as having significant collections of Welsh porcelain. Unfortunately, Drane then proceeds to make a totally unfounded statement that all of the Nantgarw porcelain in particular would have been locally purchased from the factory and therefore would have been decorated personally by William Billingsley! However, as has been noted elsewhere, there must be items of Swansea and Nantgarw porcelain still extant which are unrecognised as being important remnants of once significant services which have now been dispersed.

A particularly interesting statement in this context relates to people interviewed by Turner who were close relatives of the painters at Swansea and Nantgarw and who had personal collections of their ceramic work: he cited a Mrs. Eliza Lewis, who was actually the only still living survivor in the 1890s who had painted at the Swansea factory and its ongoing pottery as a young girl and who still held specimens of her own work from the factory! Sadly, these items were not adequately described or catalogued by Turner and their discovery now cannot be identified or substantiated. Again, Turner stated that a Mrs. Pollard had amassed a collection of fine porcelain personally decorated by her father-in-law, William Pollard, which has now disappeared. Such provenancing would be very desirable for the attribution and identification of the styles of the palettes of the Swansea and Nantgarw artists.

A note of caution should still perhaps be raised here, since we would normally regard a piece of decorated porcelain which was still retained in the family by descendants as an absolute exemplar of a particular painter's work and hence to be highly significant for historical research, documentation and attribution in that respect. However, Turner does remark that in the collection of Henry Morris' work made by his descendants, even containing some individual pieces signed by him, on one of these illustrated (Plate IV) in Turner's book the Swansea plate clearly has a dentil edge gilding—and this is normally accepted as a certain sign of the gilding and decoration having been carried out for Swansea and Nantgarw porcelain in the London enamelling shops (W. D. John, *Nantgarw Porcelain*, 1948). Henry Morris never worked in London—so how do we now correlate the signed artist's work with what could seemingly otherwise be perhaps a rogue piece of ceramic art?? A simple explanation is that the painted plate, which is stylistically very similar indeed to that of Morris, was acquired and possibly signed by him, maybe with some embellishment of the painting after closure of the Swansea factory and its presence with other genuine locally decorated art works from Morris then becomes acceptable by association. A similar case has already been described

for a Nantgarw plate decorated by William Pollard in Swansea and has already been mentioned: again, it is evident that Pollard never worked at Nantgarw, and therefore the sourcing of this plate for his applied decoration needs an explanation, a possible scenario for which has been advanced earlier.

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Chapter 8
Armorial Porcelains

Abstract The importance of armorial porcelain as reference points for historical chronology and provenancing is discussed for the few examples which are extant from the Swansea and Nantgarw factories compared with their contemporaries. Important armorial commissions depicting crests or coats of arms are detailed and their placement in the historical record is undertaken wherever possible.

Keywords Armorial porcelain · Crested china · Historical provenancing · Coats-of-arms · Mottoes · Rarity in Swansea and Nantgarw

In the context of porcelain services, the presence of a coat of arms or a family crest is often invaluable for defining the original commission of a service, and even ascribing to it a possible date or time frame for its manufacture. Armorial services are known to have been made on porcelains from the Swansea and Nantgarw factories but these are believed to be relatively few in number in comparison with other contemporary factories, such as those at Derby and Worcester: it has been recorded for other porcelain manufactories that the cost of inserting personal coats of arms or family crests in 24-carat gold on china was often prohibitively expensive—in one noteworthy example, the Derby porcelain service made for the Duke of Devonshire at Chatsworth for this reason contained his crest of a coiled snake only on the plates and flatwares—in addition, much of this crest was decorated in coloured enamels and these were not further gilded. There are relatively very few surviving armorial examples of Welsh porcelain services extant, which of course can be used to definitively ascribe their original commissions to purchasers and sponsors even when the correspondence from the order books is missing. Only one example of a crest with a motto in Welsh is known on Swansea porcelain and this has the rather more usual famille-rose type chinoiserie filled-in transfer pattern called *Mandarin*, pattern number 164, with the crest of the Lloyd family in the reserve; this service was created for the wedding of Thomas Lloyd Esq. of Bronwydd, Ceredigion, in 1819—the coat of arms showing a boar and oak tree

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is in a vignette at the rim with the Welsh motto "*Y Dduw bor Diolch"*, translated as "*Thanks be to God*". A Swansea twig-handled dish showing the Lloyd coat-of arms and motto from this service is discussed by Oliver Fairclough in *Welsh Ceramics in Context II,* plate 10. 18, p. 200; here, the more standard *Mandarin* pattern plate from a non-armorial dessert service is shown in Fig. 8.1.

Fig. 8.1 Swansea porcelain, dessert plate from an oriental chinoiserie infilled *Mandarin* design, pattern 164, marked SWANSEA in *red stencil*, in bright colours. Author's collection. This is a similar pattern to an armorial service which contains the only Welsh inscription upon Swansea porcelain, namely, the Mandarin service commissioned by Thomas Lloyd of Bronwydd, Ceredigion, on the occasion of his marriage in 1819; the motto "Y Dduw bor Diolch", which can be translated as "Thanks be to God", appears on the rim of this service under the crest of Lloyd. *Private Collection*

There is a suggestion that other family crests could also have been used similarly for this pattern (A. J. Jones & L. Joseph, *Swansea Porcelain*, 1988, p. 172) but they do not amplify this comment and further details are tantalisingly not given. It is interesting that the pattern 164 *Mandarin* service is one of the few Japan design patterns on dessert services to be numbered. A perusal of the classic text by W. D. John (W. D. John, *Swansea Porcelain*, 1958) gives some brief reference to other Swansea armorial porcelain services, in particular, there is a centrally located, dolphin-crested complete dessert service of unidentified attribution along with a chantilly sprig decoration (monochrome illustration 33, *Swansea Porcelain*, 1958) with a unique addition of dolphin-moulded handles to the tureen lids; current research indicates that this crest belongs to the Orme family (or perhaps, Garnett-Orme) of

Abbeytown, Co. Mayo, motto *Fortis et fideles*, translated as *Strong and Faithful*. Preliminary research by this author into the dolphin-crested Swansea service reveals that at the State Funeral of Admiral Lord Nelson in 1806, his orders and decorations were paraded behind his coffin and in the eleventh position was his dolphin crest, identical to that shown on the Swansea set pieces. Clearly, the Swansea dolphin crested service cannot have belonged to Horatio Nelson per se as this would have been commissioned at least 10–15 years after his death at Trafalgar, but it is quite possible that his descendants in that family line may have been the originators of this service commission and this may be a fruitful basis for further genealogical research to identify the originator of this service commission.

Another dinner-dessert service of beaded porcelain moulding with a floral decoration of four green urns containing roses painted by Henry Morris contains the central coat-of-arms of Clarke of Hereford impaling Parkinson (W. D. John, *Swansea Porcelain,* 1958, monochrome illustration 35), motto *Frangas non flectes*, translated as "I *may be broken but never bent*". The decoration on the *Clarke* service is clearly a variant of that seen on the *Prince Regent* Nantgarw tea service painted by Billingsley, which comprises a single dark green urn centrally placed with a single rose on each item. An interesting inconsistency of fact between two well-respected authorities on Welsh porcelain appears with controversy about the attribution of this service—Dr. W. D. John asserts that the crest is that of Clarke of Hereford whereas Morton Nance asserts that it is that of Abel Gower, a wealthy London merchant, on the basis of the motto alone. Further personal research here favours the Dr. John attribution, backed up by the London auction houses who have advertised recent sales of armorial porcelain from this service as being that of Clarke of Hereford.

In Fig. 8.2 is shown a rather rare Nantgarw dinner plate in the finest porcelain, which is completely undecorated otherwise except for the crest of a "demi-*lion rampant, or, with palm frond*" painted in gold in one reserve in the typical moulded Nantgarw border. Modern research undertaken at the behest of the author has indicated that this is the crest of the Phippes family (acknowledgement to A. Renton, 2014, for this identification), whose motto "*Virtute quies*" can be translated as "*Repose through valour*". This service, therefore, probably chronologically relates specifically to Henry Phippes, Viscount Normanby and Earl Mulgrave, who was raised to this earldom in 1812. The beautiful quality of the Nantgarw porcelain body with its characteristic moulding is demonstrated to particular advantage in this fine example, which dates from about 1817, and which is otherwise completely ungilded and undecorated, which in the opinion of the author demonstrates the sheer beauty of the finest quality Nantgarw porcelain.

Fig. 8.2 Nantgarw armorial dinner plate, marked NANT-GARW C. W. (see Fig. 3.1), free of painted decoration, bearing the crest of the Phippes family—a demi-lion, or, rampant sinister, holding palm frond—, ca. 1817. The Phippes family of London were granted arms by the Commonwealth in 1656: this service was probably ordered in London through Mortlock's on the commission of Henry Phippes, Viscount Normanby, created Baron Mulgrave in the county of York in 1794 and Earl Mulgrave in 1812. *Private Collection*

There is only one example recorded (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) of a completely undecorated Nantgarw service, i.e. glazed only, and that is a service supplied to the *Marquess of Bute*, which is simply glazed in the white and does not even have any applied enamelling or armorial decoration. The author could not locate any examples of this service in current ownership, which must be similar in appearance to that shown in Fig. 8.1, but minus the crest. Another isolated example of glazed and undecorated Nantgarw porcelain is illustrated in Morton Nance (ibid., monochrome Plate CLXIII, facing p. 373) of a scalloped shell dish in his own collection and acquired from Hensol Castle.

Only three other examples of crested or armorial Nantgarw porcelain are known currently, one of these being a tea service with the crest of the Homfray family of Penllyn Castle, Cowbridge (motto: "*Vulneratur non vincitur*", translated as "*He is wounded but not defeated*"), of which several pieces are now in the National Museum of Wales, Cardiff. This chronologically fits with John Homfray (1793–1877) of the Penydarren ironworks dynasty and is undecorated, except for the crest showing a speared otter in gold and plain edge gilding. According to W. D. John (W. D. John, *William Billingsley*, 1968, p. 89 and illustration 69C) this service decoration and gilding was executed by Billingsley himself in a Masonic style—and remains the only known example of a crest on armorial Nantgarw porcelain painted by Billingsley outside of another part service of six beakers on Nantgarw porcelain decorated with Masonic emblems made for Mr. Thomas Jones in December, 1819—possibly one of the last commissions executed personally by Billingsley at Nantgarw before the imminent factory closure and his own departure early in 1820. The Homfray crest is rather simply executed in gilt and is centrally located on the coffee cans, tea cups and saucers. It is also therefore, currently, the sole representative of a locally decorated Nantgarw family crested porcelain service.

A dinner-dessert service was found in Scotland some years ago with a central crest and motto "*Migro et respice*" (literal translation: *I depart and look forward)* which has been identified with the Ramsay family; the *Ramsay* service has geometric coloured designs in pink and purple around the rim and a central coat of arms which also contains the family motto. The central crest shows an eagle with a circular banner containing the motto and a border painted with green vines and bouquets of flowers and birds.

A third Nantgarw armorial dessert service also displays the appropriate coat of arms and motto "*J'ay bonne cause*" (literally translated as "*I have good reason*") of Lord Henry Thynne, Viscount Weymouth, later the 3rd Marquess of Bath and this has been illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, coloured illustration 56). The simply gilded rim encloses a large, central crest with a Viscount's coronet and a reindeer and lion as supporters.

It may therefore be concluded that armorial examples of Nantgarw porcelain are indeed scarce. Another interesting point here is that the *Homfray* tea service has been decorated locally by William Billingsley (W. D. John, *Nantgarw Porcelain*, 1948) whereas the three dessert services, namely the *Phippes*, *Thynne* and *Ramsay* services, are most likely to have been London decorated. This could reflect the geographical assignment of the coats of arms: the only local family of this group of four are the Homfrays, who lived within a few miles of Nantgarw, whereas the others who were not locally situated, it can be surmised would have reasonably placed their orders through the London retailers, probably Mortlock's. Another example of an incorrect statement being made by Robert Drane in Turner's book (*The Ceramics of Swansea and Nantgarw*, 1897) which was accepted hitherto without contradiction relates to the coats of arms or crests on Swansea and Nantgarw porcelains never being painted by esteemed artists but rather being applied by children or casual labour at the factories—there is no evidence for this statement whatsoever and indeed it is recorded in letters and diaries that William Billingsley himself painted armorial porcelain with Masonic motifs and also accomplished the tea service ordered locally for the Homfray family, as described above.

8.1 Armorial Provenancing and Historical Dating

To illustrate the particular advantage of armorial identification for successful historical provenancing and dating in ceramics research, a documentary case exists in the Derby factory for the *Cremorne* service, which appears as an order in William Duesbury's daybook for December, 1788, having been ordered by Thomas Dawson, 1st Viscount Cremorne, for his wife Philadelphia Harriet, William Penn's granddaughter, which includes her "*PHC*" cursive cipher and seven-pearled coronet (Fig. 8.3). The actual delivery of this service on time as agreed was clearly a problem for Duesbury and the correspondence with Lady Cremorne expressed her dissatisfaction at the ongoing delay in its completion: as was experienced for the preceding Nantgarw *Phippes* armorial service, the cipher and coronet uniquely identify the *Cremorne* service, here in an otherwise rather plain and nondescript decorative pattern, in this case a Chantilly sprig in blue, green and gold, and hence

serves to provide a unique documentary and historical dateline for this service which would otherwise not have been possible from the examination of the pattern alone. The other major point to be realised here, of course, is that the survival of the Derby workbooks and extensive personal correspondence of William Duesbury has facilitated the exact matching of the porcelain patterned and crested comport of this *Cremorne* service with the dated order and commission, which is just not possible with its Nantgarw analogues which are discussed above. Another point to emerge from a perusal of Duesbury's records of this commission is the specially requested and unique design for the two small fruit comports in the *Cremorne* service, described as "*oval and scalloped*", and one of these is actually shown in Fig. 8.3; these comprise a very rare and unique shape for the Derby factory, rather different from the more usual "kidney shaped" comports being produced for other services at this time. The marriage of historical armorial provenancing together with the surviving correspondence relating to the commissioning order at the Derby factory gives an infallible and unambiguous assignment and attribution to this porcelain item which sadly cannot always be emulated elsewhere: in the case of Swansea and Nantgarw porcelains, the absence of the order books at the factory and also those of the London retailers leaves only relatively few such assignments that can now be made possible with any degree of certainty, but nevertheless, the additional information afforded by the presence of a crest does facilitate the correct placement of the artefact chronologically.

Fig. 8.3 Dessert comport from the *Cremorne* service, Derby porcelain, 1788, marked with puce crossed batons and crown, bearing the coronet and initials "PHC" of Lady Philadelphia Hannah Cremorne, wife of Viscount Cremorne, born in Philadelphia in 1741 and grand-daughter of William Penn, founder of the state of Pennsylvania in the USA. Lady-in-Waiting to Queen Charlotte, wife of King George III, Lady Cremorne died in 1828. The initials and coronet facilitate the identification of this as an important, unique historical and documentary service in an otherwise common factory pattern, namely the Bourbon cornflower sprig. The scalloped, lozenge shape of the comport in this particular service is also extremely rare in Derby porcelain and was specially commissioned for this service by Lady Cremorne. Illustrated and discussed in J. Twitchett, *Derby Porcelain:* 1748–1848, 2002, pp. 194–195, where it is noted that only two comports of this shape were ordered. *Private Collection*

In contrast, the *Barry-Barry* service of Derby porcelain contains both a unique painted decoration and the arms of Pendock Barry-Barry of Tollerton in Nottinghamshire enclosed within an oak leaf wreath on a bright dark blue ground with applied gold stars (Fig. 7.2): despite this being a named service, however, the attribution of a painter for this unique and lavishly decorated service has variously been ascribed to William Billingsley, John Brewer, Martin Randall and John Stanesby as evidence for the artist who carried out this beautiful work in the Derby order books is tantalisingly missing—providing an example of an incomplete forensic documentary audit for what should have been a very important commission at that time. It could easily be ascribed to Billingsley and, indeed, this has been done so historically by several authors, but recent research into Derby correspondence casts some doubt upon this attribution as the *Barry-Barry* service could be dated possibly later than first thought and even to the period 1800–1805, which is after William Billingsley had left the factory, for which a date of 1795 must be assured! Hitherto, however, the *Barry-Barry* service was believed to have been executed in the period 1790–1795, which would have been compatible with William Billingsley executing the decoration and again the order books do not provide the necessary information in this respect, since the date of the commissioning of the service is not provided. Current thinking, if we accept the premiss of a later date seems to favour John Stanesby (J. Twitchett, *Derby Porcelain*, 2002; p. 50) as the painter; despite the apparent chronologically exclusive proposed date, some texts still attribute the *Barry-Barry* service to Billingsley as his classic work (for example W. D. John, *William Billingsley*, 1968)—which illustrates that even for a unique documentary porcelain service, sometimes one cannot still fully and definitively attribute an artist or gilder to these important works of art unless there is also documentary support from factory work books with an associated and unambiguous date of commission! A case study of the Pendock-Barry family and this service appears later in this text, demonstrating the value of a holistic approach in consideration of the timeline for its execution—the fact that it does not appear in the Derby pattern book could be explained that it was decorated outside the factory—perhaps by Billingsley—as has been theorised for the decoration of the *Ongley* service by William Corden.

In contrast, the *Prince of Wales* Derby dessert service (Fig. 7.1), pattern 65, created in 1787, although not strictly exemplary of an armorial porcelain service can be credited absolutely to William Billingsley due to the presence of recorded correspondence from Joseph Lygo, the Derby factory London agent, to William Duesbury on May 21st, 1787, describing the service composition fully as 24 plates, 13 comports and two cream bowls for HRH, George, The Prince of Wales, and mentioning William Billingsley as the artist charged with accomplishing the work. In contrast to the *Barry-Barry* service, therefore, the forensic provenancing and historical attribution is complete and unambiguous for the *Prince of Wales* service. Similarly, the well-known pattern 100 Derby service of 1790, whose remaining 80 pieces were sold off as part of the Rothschild estate in the late 1800s—hence strongly indicating by associated nomenclature that this should be now properly renamed the *Rothschild* service—is also named as a Billingsley painted service in the factory work books (Fig. 8.4). In the *Rothschild* plate shown

in Fig. 8.4, the small moth in the reserve should be noted—this was inserted by the artist to cover successfully a small blemish in the porcelain body; for both the pattern 65 and pattern 100 named services, the factory workbooks clearly indicate that William Billingsley was also the nominated gilder, other gilder's numbers are occasionally seen on pieces from these services which could indicate that additional experienced assistance was brought in as required. Other nice examples of pattern 100 dishes and plates are provided in A. Bambery (*Welsh Ceramics in Context, Part I*, p. 162, 2003) and in R. Edmundson (*Welsh Ceramics in Context, Part II*, p. 153, 2005) (colour Plate 8. 3) and p. 165.

These examples strongly support the documentary evidential and historical attribution of named services, for which of course the factory source books and dated order receipts are essential for a complete, unambiguous provenancing, providing in addition the names of the artist and gilder(s) concerned. These can then be taken as gold standard baseline comparators for an artist's style and palette which can be used for the inspection and characterisation of other works which require identification.

Fig. 8.4 Dessert plate, Derby porcelain, ca. 1790, puce mark crossed batons and crown pattern 100, decorated by William Billingsley with a central single spray of flowers and a Smith's blue border. Known as the *Rothschild* service. Note the small moth inserted near the rim to mask a blemish arising in the surface after firing. Illustrated in W. D. John, *William Billingsley*, 1968, plate 32A, and in A. Bambery, *Welsh Ceramics in Context, Part I,* Fig. 9.8, 2003, p. 162; *Welsh Ceramics in Context, Part II*, Fig. 8.3, 2005, page 153. *Private Collection*

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Chapter 9
Documentary Porcelain and Historical Provenancing

Abstract The relevance of documentary porcelain, including that made for specific purpose such as a matrimonial celebration or that which has been specifically commissioned from a particular artist, is especially important for provenancing and for the identification of an artists' work elsewhere. Correlation with recorded attributions from other factories is not only helpful but necessary as artists moved around between factories. The case of William Billingsley being a classic example of this, and examples of his definitive work on Derby, Pinxton and other factories provides a useful means of determining his work on Swansea and Nantgarw.

Keywords Documentary porcelain · William Billingsley · Derby pattern books · PInxton · Artistic style · Named services form other factories

All documented entries for important commissions serve to confirm the artistic style (hand and palette) of the painters who are recorded as accomplishing the work—and this can be of critical importance for verifying their work undertaken at other factories; however, one must exercise some caution in this respect as for several reasons, perhaps for expediency or completion of an order to meet a deadline, sometimes other artists were thought to have been involved in the applied decoration of a large service to a greater or lesser extent. This is certainly the case for other porcelain manufactories; an example here is the pattern 100 service referred to above, which despite its being credited to William Billingsley completely for artistic decoration in the Derby factory workbook, is now thought could have possibly involved in addition the assistance of several of his colleagues as discerned on inspection by modern experts of the 80 or so surviving pieces of the *Rothschild* service (J. Twitchett, *Derby Porcelain*: 1748–1848, 1748). The example shown here in Fig. 8.4, however, can readily be ascribed to Billingsley's hand by comparison with his work from that time on other services, such as that on a cup and saucer in a Pinxton porcelain tea service discussed later in this article (Fig. 9.1). Edmundson (*Welsh Ceramics in Context, II*, 2005) makes this very point of multiple artists being involved in porcelain decoration with specific

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reference to the pattern 218 Pinxton landscape decoration which can be attributed to William Billingsley and perhaps five others.

Fig. 9.1 Cup and saucer, Pinxton porcelain, 1798, unmarked, from a tea service decorated by William Billingsley; very unusual in that it is completely ungilded, unlike most other Pinxton porcelain specimens and believed to be the only Pinxton service to be so decorated. *Private Collection*

A statement from Morton Nance in his classic and comprehensive text on Swansea and Nantgarw porcelains (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) which was the culmination of intensive personal study and research for over 40 years, echoes the importance of examples of documentary porcelain for provenancing:

> Documentary pieces – specimens which are dated directly or indirectly or which are signed by a particular painter – furnish valuable evidence as to the classes of work produced at a given time. But in the case of Swansea and Nantgarw the former are extremely rare and the latter practically non-existent

A particular advantage for museum conservators and porcelain collectors is that correspondence relating to named and commissioned services of importance was usually fully recorded in factory day books and diaries: hence, it is then possible to actually definitively date the pieces and historically research their purpose, even to the positive identification of a painter and a gilder, making the items documentary and dateable for historical provenancing purposes, which is always highly desirable in art work research. As mentioned above, an added advantage is that for designated artists one then has a documentary example of their palette and work which can be utilised in research on other decorated porcelains of less well defined attribution; this is particularly important for artists such as William Billingsley, who moved from factory to factory between his apprenticeship to Edward Withers at Derby in September 1774 until his leaving Derby in the autumn of 1795. He then set up the Pinxton China factory with John Coke in 1796, moving on

to set up a factory at Mansfield from 1799–1802 and then Brampton-in-Torksey up to 1807 before joining Martin Barr at Barr, Flight & Barr, Worcester, in 1808 until he helped to set up the factories at Swansea and Nantgarw with Samuel Walker in 1813–1821. After closure of the Swansea and Nantgarw operations, Billingsley finally moved on to John Rose's factory at Coalport in 1822 where he remained until he died, aged 70, in 1828 (W. D. John, *William Billingsley*, 1968; J. Robinson & R. Thomas, *Not Just a Bed of Roses; The Life and Work of the Artist, Ceramicist and Manufacturer William Billingsley*, 1996; R. S. Edmundson, *Welsh Ceramics in Context, Part I*, 2003; A. Bambery, *Welsh Ceramics in Context, Part I*, 2003; R. E. Chapman, *Welsh Ceramics in Context, Part I*, 2003). It is thus very useful indeed to be able to characterise Billingsley's flower painting from the documented examples and patterns initially at Derby and then to facilitate the attribution of his work at these other factories in succession. A typical example of this is shown in Fig. 9.1, a cup and saucer decorated by William Billingsley on Pinxton porcelain in 1798 (N. Gent, *The Patterns and Shapes of the Pinxton China Factory*, 1996), which is especially unusual on account of it being completely ungilded—so forming a unique tea service in this respect—but one in which the characteristic flower painting of Billingsley is instantly recognised and set perfectly on quality porcelain with no interference or detraction from the presence of extensive gilding. Another very fine example of the identification of the hand of William Billingsley is provided by the saucer dish shown in Fig. 9.2, fully marked Barr, Flight & Barr, Worcester, and which dates from his time there between 1808 and about 1812. The work of Billingsley on Barr. Flight & Barr porcelain is especially sought after by discerning collectors since he was involved there primarily in porcelain production and he painted very little.

Fig. 9.2 Saucer dish, Barr, Flight & Barr Worcester porcelain, ca. 1810 impressed mark and crown, and printed mark stencilled in puce, decorated by William Billingsley with a wreath of pink roses on a sky blue ground. Billingsley's work on Worcester porcelain is very rare because he was at the factory for only a very short time before leaving to set up at Nantgarw with Samuel Walker. *Private Collection*

This procedure has been instrumental and indeed an essential step in the attribution of Billingsley's later painting on locally decorated Swansea and Nantgarw porcelains as very few pieces from the production at both these factories recorded his signature, and of course the factory workbooks which could have contained so much valuable information in this respect are missing. Jones & Joseph (A. J. Jones & L. Joseph, *Swansea Porcelain*, 1988) have made a comprehensive study of the script marks on Swansea porcelain and have reached several conclusions about the identification of Swansea artists such as Henry Morris, William Billingsley and David Evans from an experienced graphological analysis of the associated script on marked attributed pieces—but how much more secure would this analysis have been forensically if the Swansea pattern books had also been available for evaluation in blind test procedures, which sadly is not possible in this case for confirmation purposes. The comprehensive analysis carried out by Jones and Joseph of the Swansea script and stencil marks is extremely valuable for a forensic evidential input in the assignment of artists and gilders working at the factory and several important conclusions can be made from their studies:

- The "standard" red stencil SWANSEA mark was applied to flatwares rather indiscriminately (for example that illustrated in Fig. 3.2 on the underside of a deep dish with a Nantgarw-type moulded rim and bird decoration by William Pollard in the vignettes, Fig. 3.3) and very occasionally this appeared in black and gold—the gold stencil mark is attributed exclusively to William Billingsley and can be seen on the underside of the bowl illustrated in Fig. 9.3 of duck egg translucency in a basket weave moulding with cartouches decorated in a Derby three-rose type pattern of red roses with fine applied gilding (Fig. 9.4).
- The script *Swansea* mark, again applied usually in red enamel, affords a better possibility for the source of attribution as evidenced by the survey of Jones and Joseph; they have successfully collated the script marks on Swansea porcelain with key figures such as William Billingsley, Henry Morris, David Evans and George Beddow from documented pieces. A good example of the way in which this can be used forensically to attribute an artist and/or a gilder is shown in Fig. 9.5, which shows a Swansea script mark from the foot of a cup and saucer of the finest, flawless duck egg porcelain which is beautifully moulded in a basket weave and cartouche pattern and simply gilded. Despite its simplicity and lack of applied floral decoration, the sheer perfection of the porcelain warranted the presence of the script factory identification mark. On close inspection of this script mark and comparison with those enumerated by Jones and Joseph it is seen that it is undoubtedly the work of William Billingsley himself: the characteristic graphology of Billingsley's hand is apparent in no fewer than three parts of the script, the initial capital italicised *S*, the forerunning tail to the letter w and the cursive link between the an and the adjacent n. We can thus immediately exclude the other identified script signatures of Morris, Evans and Beddow and attribute this particular *Swansea* cursive mark to Billingsley.
- Another example of such an identification is made rather more easily in the case of a small tea plate from a breakfast service (usually, Swansea tea services did not provide small plates as part of the commission and these were part of

the larger number of components in breakfast services which included muffin dishes, egg cups and stands and fruit tureens) decorated with small pink roses on a bed of gold seaweed, a pattern that has been attributed to William Billingsley's decoration by several authors. Indeed, this seems to be the case, as the script *Swansea* mark on the underside of this plate, Fig. 9.6, again possesses the characteristic traits of Billingsley's hand as identified above.

Fig. 9.3 Bowl from a Swansea duck-egg porcelain tea service with moulded cartouche and osier basket-weave pattern, richly gilded and with groups of three pink roses—a pattern later copied at other factories. *Private Collection*

Fig. 9.4 A very rare SWANSEA mark in gold stencilled capitals on the base of the bowl illustrated in Fig. 9.3, which is credited to William Billingsley by Jones & Joseph, *Swansea Porcelain*, 1988. Bowl type illustrated in Jones and Joseph, Swansea Porcelain, 1988, p. 69 type 3. The three-rose pattern is believed to predate that which later personified later Derby and Spode porcelain analogues. Pattern unrecorded hitherto. *Private Collection*

Fig. 9.5 Red script Swansea mark on a particularly fine duck egg tea cup and saucer of osier basket weave and cartouche pattern which matches that ascribed to William Billingsley found on documentary pieces, in Jones & Joseph, *Swansea Porcelain*, 1988. *Private Collection*

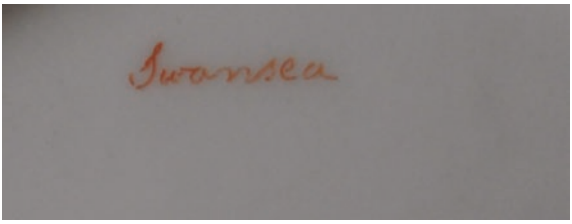

Fig. 9.6 Red script Swansea mark on small tea plate with pattern of red roses on gold seaweed attributed to William Billingsley by Dr. W. D. John (*William Billingsley*, 1968): the script is found to match that of Billingsley and confirms his hand in the decoration of this porcelain. *Private Collection*

A final word on Swansea script marks and their attribution to a particular decorator can direct the reader to Appendix G of this book, where the discovery of an early Swansea glassy porcelain part tea service can usefully put these protocols to a scientific evaluation based on the above. criteria.

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Chapter 10
The Production of Porcelain Services

Abstract Other methods of attribution of service production in porcelain factories are discussed and the identification of selected copies of original specifications can be differentiated by subtle changes to the design, ground colour, scene distribution, composition or a variation in pattern numbers. The difficulties in attribution of an original service arising from its sale and re-acquisition are also mentioned and some examples are chosen to indicate the resultant problems caused in provenancing.

Keywords Marks · Gilder's numbers · Unusual composition of decoration · Mackintosh service · Duke of Cambridge service · Prince of Wales service

10.1 Gilding Versus Painting

Another interesting conclusion made by Jones and Joseph (A. J. Jones & L. Joseph, *Swansea Porcelain*, 1988) concerned the colour of the Swansea stencilled or script mark, which is invariably red, except for a few instances where it appears in gold (or even more rarely in black or green, the former assigned to Billingsley and the latter to Baxter from signed pieces); it is alleged that because of the high cost of application of gold then a rare gold factory mark is usually ascribed to Billingsley's authorship on pieces that he considered were especially important– the cream/slop bowl from the osier pattern basket-weave moulded cartouche tea service shown in Fig. 9.3 has the SWANSEA mark in gold (Fig. 9.4), which could therefore on this hypothesis indicate that Billingsley himself perhaps had a personal hand in the decoration and/or gilding, as was recorded for him in the Derby books for the pattern 65 and 100 services discussed above.

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Fine gilding was always highly appreciated on quality porcelain services and the best gilders were usually associated with the finest artists, who were sometimes one and the same, such as Billingsley at Derby who was assigned the gilder's mark "7", which frequently appeared inside the footrim in association with his own artwork. In fact, at the final auction of Swansea and Nantgarw porcelain in 1823, one particularly large and desirable Swansea breakfast service was highlighted in the notice of sale, namely a "Paris fluting with broad gold bands" with no additional applied floral decoration—an example of which is shown in Fig. 10.1. A similar example shown in Fig. 10.2 has floral sprays by the accomplished Swansea artist David Evans, which confers a completely different appearance on the porcelain pieces to the pure gilded porcelain examples of its undecorated analogues shown in Fig. 10.1.

Fig. 10.1 Swansea tea cup and saucer, "Paris fluting with broad gold bands", as advertised in the final auction sale of porcelain in 1823. Marked SWANSEA in red stencil. Illustrated in Jones and Joseph, *Swansea Porcelain*, 1988, p. 54, cup type 1. *Private Collection*

Fig. 10.2 Swansea teacup and saucer, Paris fluting, broad gold bands, part of a trio. Marked SWANSEA in red stencil, and of similar design and shape to Fig. 10.1, but with floral sprays and insects painted by David Evans. *Private Collection*

As will be discussed later with particular reference to the *Ferguson* service (see W. D. John et al., *Nantgarw Porcelain Album*, coloured illustration 69, for examples) which was decorated at Nantgarw at or just after the closure of the factory in 1820–1823, sometimes for economic reasons only some pieces were gilded at the rim and at the edge: it is believed this was undertaken purely to reduce cost—for the same reason, Thomas Pardoe substituted chocolate or green pigmented edging instead of the usual gilt on locally decorated items at Nantgarw in this period and an example of this practice is shown later.

10.2 Copies of Well-Known Named Services

On occasion, of course, it is believed that porcelain factories would possibly issue copies of well-known *named services* for more general consumption, which had been perhaps been subtly changed in some small way—an example is the creation

of several later copies of the "*Prince of Wales*" Derby dessert service, which was painted originally by William Billingsley in 1787 with a dawn pink edging and a single rose on each item (an original example of a dessert plate from this service marked pattern 65 is shown in Fig. 7.1) to the special order of HRH, George, Prince of Wales. Several Derby services appeared later in exactly the same style, with single roses in a beaded gold circlet but with a salmon pink edging and even with a new pattern number, 151, and on rather different shapes as befitted later styles from the factory. Several of these pieces have Derby marks which post-date Billingsley's departure from Derby in 1795 and therefore immediately negate his ability to paint the service items there. Likewise, the famous *Trotter* service created by Derby in about 1825 for John Trotter Esq. of Dyrham Park and painted by Moses Webster soon after his return to Derby from the Robins & Randall enamelling atelier, Islington, London, is unique but this was later copied and gave rise to a generic type of Derby service known simply as the "*Trotter Pattern*", for an example see Fig. 2.1. The original service had dense chrome green panels in the reserve mouldings interspersed with floral decoration (Fig. 2.1) and had gold script descriptors of the scenes on the reverse (J. Twitchett, *Derby Porcelain*: 1748–1858, 2002; p. 168, colour plate 133 shows a generic *Trotter* pattern teacup and saucer with chrome green panels) but panels were reproduced later in several colours, including green, grey, red and yellow.

Another case of similar copies being created of famous services and more appropriate to Welsh porcelains is the so-called *Duke of Cambridge/Duke of Gloucester* Nantgarw tea service (see W. D. John, *Nantgarw Porcelain*, 1948, monochrome illustration 23B of a breakfast cup and saucer from this service) for which other examples are known from very similar tea services with the same *oeil-de-perdrix* decoration but which differ only in having a significantly different background colours for example the superbly decorated example of a small plate with birds and flowers shown in John et al., *Nantgarw Porcelain Album*, 1975, coloured illustration 39. This particular example was formerly in the possession of Miss Young of Preswylfa, Neath, a descendant of William Weston Young—and it is reported that family tradition ascribed it to another Royal service—a comparison with the coloured illustration 69 showing two egg cups and a large tea bowl from the similar Duke of Cambridge tea service given in the same source reveals that this single surviving plate at Preswylfa has different gilding patterns and composition of the floral vignettes but the *oeil-de-perdrix* ground is identical. A more intense version of the ground colour, being a vivid blue, and with subtly different gilding patterns and floral compositions is shown in coloured illustration 66 of the same *Nantgarw Porcelain Album*, and this emphasises the point made about production of several services of great similarity to emulate a single, documented Royal or another named service: a classic example of this will be highlighted in detail later in the case of the *Mackintosh* service, for which at least three different versions can now be identified.

The celebrated *Duke of Cambridge* dinner-dessert service commissioned in Nantgarw porcelain by the Prince Regent in 1818 originally had a very precise specification of four landscape panels, two with flowers and two with birds in the

reserve vignettes (an example is shown in Fig. 10.3), but it is now realised that copies were made which are genuinely of Nantgarw porcelain but with different combinations of artwork in the vignettes, typically these are found with four landscape and four floral vignettes. Naturally, these copies are not as highly prized as the originals by modern collectors because the provenancing associated with the original service is missing. A plate from this service appears in the *Nantgarw Porcelain Album* (John et al. 1975, coloured illustration 58), which has survived almost complete as over forty items.

Fig. 10.3 *Duke of Cambridge* service dessert plate, Nantgarw porcelain, marked impressed NANT-GARW C. W., commissioned by the Prince Regent for his younger brother, Adolphus, Duke of Cambridge, on the occasion of his marriage in 1818 to Princess Augusta of Hesse-Cassel. This plate depicts the original order specification of four landscapes, two of fruit and two of birds in the eight vignettes, unlike similar copies created later by Nantgarw which had a different composition. The service was decorated by Thomas Randall in the atelier of Robins & Randall, Islington, and retailed through Mortlock's, Oxford Street, London. Illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, Colour Plate 58. *Private Collection*

Finally, another example of the multiple reproduction of Welsh porcelain services of high quality floral decoration with exotic birds and superb gilding is provided by the so-called *Mackintosh* Nantgarw service (a square dish from this dessert service is illustrated as a coloured frontispiece to *Nantgarw Porcelain*, W. D. John, 1948); the London decorated original is a sumptuous and highly important documentary dinner-dessert service which has been further described by Dr. John in a Supplement to his authoritative work (*Nantgarw Porcelain*, 1948). At least two other services are known, also called *Mackintosh* services—these are equally sumptuous, but differing just slightly in design and composition, which are nevertheless still noticeable for differentiation and discrimination purposes; these are now best termed generic *Mackintosh* services, for one of which a tea service

was commissioned in a very similar pattern by the Earl of Dartmouth. These important examples of commissions for Nantgarw services will be discussed in more detail later.

10.3 Difficulties in Attribution

For Swansea and Nantgarw porcelains, the absence of any factory pattern books means that such special and highly prized commissions are only mentioned in passing and are recorded separately in correspondence between William Weston Young, Lewis Dillwyn and William Billingsley: therefore, compilation of the documentation provided by research for this study will hopefully assist current knowledge and provide historical placement for some of the best quality output from these two factories, which as can be seen, must necessarily also involve consideration of and contextual placement with some other mainstream and contemporary porcelain factories, especially Derby and Coalport. Another problem which surfaces in the identification of named services which are not accompanied by appropriate pattern numbers is that the descriptions are often written in existing correspondence in an abbreviated, rather cursive and shorthand text, which may generically involve statements such as "a border of garden flowers and edge gilding with central floral spray" and, of course, this description could cover several possible patterns and configurations in reality; without reinforcement of an actual pattern number, artistic identification or sketch in a pattern book then some ambiguity obviously can arise in their future assignment though historical research. Secondly, since many of these named services would have been ordered originally from Mortlock's in London, then the notes from the retailer's order books would have assisted greatly in the attribution and dating of important commissions: unfortunately, however, the original records of Mortlock's have also now been lost, so one is left only with tantalising snippets of information from personal letters as to the ordering or sale of an important service. Mortlock's closed in 1933 and since then all records had been lost—so even their sales of surviving complete Nantgarw services (see later) from their own collection and stock in our modern era have become obscured.

A rather more difficult problem encountered in the assessment of named porcelain services is that their attribution in a diary or workbook naturally refers to the original commission order placed either directly with the manufactory or with an appointed agent, usually based in the major London retailers, and this again may not be the acquired terminology that was later adopted: for example, the famous and original sumptuous *Mackintosh* service of Nantgarw porcelain mentioned earlier, ascribed to The Mackintosh of Mackintosh of Moy and illustrated as such in several texts (see for example, W. D. John, *Nantgarw Porcelain*, 1948; W. D. John, G. Coombes & K. Coombes, *Nantgarw Porcelain Album*, 1975), was surprisingly not actually commissioned and purchased by Mackintosh either from the Nantgarw factory or from its London retailer. It was ordered in 1820 by

Mr E. Priest Richards, a leading attorney, treasurer of Glamorgan and land agent for the Marquess of Bute, whose daughter married into the Mackintosh family in 1880 and for whom the porcelain service decorated in the London workshops of Robins & Randall, Islington, by Thomas Randall in 1817–1819 was a wedding present. Hence, strictly speaking this highly important Nantgarw service should really be ascribed properly as the *Priest Richards* service!! The service was, hence, already some 60 years old before it acquired the Mackintosh connection. It was dispersed at auction before 1900. A second "*Mackintosh*" service appeared in the auction rooms in 1944 and yet a third (from the Earl of Dartmouth's estate) appeared in the auction rooms in 1964.

Another example of this association and nomenclature through inheritance or marriage is the well-known and sumptuous *Burdett-Coutts*, Swansea dinner-dessert service ordered by Thomas Coutts, the wealthy personal banker to King George III, in 1818 on the occasion of his second marriage to Harriet Mellon (Fig. 10.4): because of the disinheritance of the eldest grandson on account of his ardent Napoleonic support, and indeed his subsequent marriage to Lucien Bonaparte's daughter, this service then passed into the hands of Thomas Coutts' granddaughter Angela, who had married Sir Francis Burdett and later became Baroness Burdett-Coutts in her own right in 1851. Upon her death in 1922, this service was auctioned as the *Burdett-Coutts* service of Swansea porcelain, but clearly it should perhaps really be more correctly described as the *Coutts* service, after the original person who commissioned it from the Swansea factory through its London retailers?

Fig. 10.4 Swansea porcelain, *Burdett-Coutts* service; a large dinner-dessert service of some 200 items, London decorated, fine dentil edge gilding with a central basket of flowers and butterflies. *Private Collection*

In other rather rare but historically fortunate cases, the descendants of the person who commissioned the original service still maintain it in the family possessions—such an example is the locally decorated *Garden Scenery* dessert service of Swansea porcelain, painted locally by Thomas Baxter and commissioned directly by Lewis Weston Dillwyn in 1817 and retained by him at the transfer of ownership of the Swansea factory to William Weston Young in 1820. This service is still in the possession of the surviving family at Llysdinam and is only missing a very few pieces from the original complement over the last two centuries. Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) states that at the time of writing of his authoritative work, Dillwyn's great grandson, Sir Charles Venables Llewelyn still retained some 41 pieces of the *Garden Scenery* dessert service in his possession at Penllergaer House. A possible error has occurred here in Turner's book of 1897 (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897), when he asserts that a family predecessor, Sir J. T. D. Llewellyn, owned this dessert service of 70 pieces at that time decorated by Thomas Baxter; surely this prized family possession would not have lost 29 pieces in the intervening 45 years between the reportage of Turner and Morton Nance? Also, the standard complement of a Swansea dessert service was usually around 40–45 items and a service of 70 pieces would therefore be of rather an odd specification unless it was designed perhaps as a combined tea and/or a dinner-dessert service which was not apparently specified in this particular case.

In another very recent discovery following some detective work by the present author, a rather splendid, superbly decorated Nantgarw dinner—dessert service has been unearthed in the cellars of Farnley Hall, North Yorkshire, which can be traced back to a purchase made by William Ramsden Hawksworth Fawkes of Farnley Hall in 1817–1819. Fawkes was a personal friend of James W. M. Turner, the celebrated English painter and watercolourist, who was a regular visitor to Farnley Hall for a period of over 25 years and possibly dined off this Nantgarw service whilst staying there. This provides another rather rare example of an original Nantgarw service which still resides in the family of the original purchaser, now Mr. Guy Fawkes of Farnley Hall, Otley, North Yorkshire. A more detailed account of this service is provided later in this book.

In another instance, we have referred above to the *Rothschild* service of Derby porcelain, which started life as pattern 100 (Fig. 8.4) in the workbooks and with documentary painting by William Billingsley in 1790—but what is not stated is the name of the original purchaser: was this actually Baron Rothschild, or did the Rothschild family acquire this service through gift, marriage or purchase in a dispersal sale at a later time, as did Lord Mackintosh for his eponymous Nantgarw service and Lady Seaton for her Nantgarw service? What is clear is that at the auction for dispersal of the Rothschild family effects in the late 1880s the pattern 100 service was sold as one lot of about 80 pieces and thereafter has become known as the *Rothschild* service!

We shall here consider the specific named services of Swansea and Nantgarw porcelain in detail and to report their historical attribution in the light of some of the evidential material highlighted in the examples cited above; wherever possible,

the statements are supported by existing literature research; it is unfortunately not possible to reproduce photographs of an item from each service—although desirable, this would occasionally infringe the desire of present owners for anonymity—so, distinguishing characteristics and descriptions are provided unless express permission has been given by the current owners. It should be remembered that these prestige services were the epitome of ceramic art and achievement at the time and represented a considerable time and investment of resources—the purchase cost could be staggeringly and proportionately large: for example, the 100-piece *Earl Camden* dessert service of Derby porcelain in 1795, painted with pink roses on an apple green ground (Fig. 7.3) by William Billingsley, cost the then astronomical sum of 160 guineas, some ten times the cost of a normal Derby dessert service at that time and equating with a real cost today of approximately £200,000!! This service, despite a great exhortation being made to his work force to complete the order on time from William Duesbury, was delivered very late to an irate Lady Camden, and the fulfilling of this order was seriously compromised—this difficulty, although unpleasantly experienced by Duesbury, has been fortunate for ceramics historians because of the trackable historical correspondence arising between Duesbury and the Camdens over the provision of this service!

A rather more subtle difficulty appears when one considers the appallingly large kiln wastage losses suffered particularly in the Nantgarw factory: sometimes, the production of the highest quality porcelain in sufficient quantities could not always be achieved to meet the target date and several pieces in large services are of notably inferior quality when compared with the rest of the service. In a noteworthy example, the much esteemed *Lysaght* service of Swansea porcelain is known to contain several pieces of Coalport porcelain of the same shape and design, but all have been decorated locally by Henry Morris—it is assumed that to achieve the mandatory delivery schedule of this service some non-Swansea porcelain was bought in by Lewis Dillwyn and decorated locally *en-suite* along with the genuine, home-produced article.

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Chapter 11
The Scientific Analysis of Porcelain

Abstract In this chapter the scientific analysis of Swansea and Nantgarw porcelains is described comprehensively from the earliest recorded elemental analyses of Eccles & Rackham (*Analysed Specimens of English Porcelain in the V&A Museum Collection,* 1922) which involved the destruction of the items being investigated, to the latest microspectroscopic and diffraction studies in the 1990s which still involved destructive sampling but on a smaller scale. The composition of factory wasters excavated archaeologically from malformed specimens taken from the kilns after firing and broken as being unsuitable for sale. The results are reviewed individually and then compared holistically: several inconsistencies are noted and these influence and compromise several important conclusions relating to the experimental changes made during Dillwyn's or Billingsley's attempts to improve their porcelains. The findings of the analyses are also compared with the formulations and mixture compositions outlined in Dillwyn's notebooks for his empirical experiments on improving Swansea porcelain and cross-referenced with his best approved porcelain mixture composition. During the discussion, the sourcing of materials and their potential impurities are discussed and the effect of kiln firing temperatures has upon the ceramic chemical composition. A Table is produced of the common chemical and molecular constituents of porcelains and those common to Swansea and Nantgarw porcelains are identified.

Keywords Chemical composition · Kiln firing reactions · Porcelain bodies · Kiln temperatures · Factory wasters · Elemental and molecular composition · Qualitative and quantitative analysis · Glazes · Pigments

In this context, the application of non-destructive scientific analysis of porcelains, comprising chemical and molecular structural analyses of porcelain bodies, their glazes and their enamel pigment compositions, is now paramount in the forensic attribution of unknown pieces from several factories and in conjunction with artistic and historical research is a powerful source of information to elucidate details of kiln temperatures and factory procedures which were often not completely elucidated (H. G. M. Edwards & J. M. Chalmers,

H.G.M. Edwards, *Swansea and Nantgarw Porcelains*,
DOI 10.1007/978-3-319-48713-7_11

Raman Spectroscopy in Archaeology and Art History, 2005; H. G. M. Edwards, *Frontiers of Molecular Spectroscopy*, 2009; J. M. Chalmers, H. G. M. Edwards & M. J. Hargreaves, *Infrared and Raman Spectroscopy in Forensic Science*, 2012; H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015a, b). Hitherto, the chemical analysis of porcelains and ceramic wares demanded a significant if not the complete destruction of the item presented for analysis (Sir A. Church, *English Porcelain from Museum Collections*, 1904; H. Eccles & B. Rackham, Analysed Specimens of English Porcelain from the V&A Museum Collection, 1922): hence, the excavation of factory waster sites has been instrumental in the provision of much analytical information from mechanically prepared sections of unglazed and unfinished porcelains (Tite & Bimson, 1991; J. Owen et al. 1998; Owen & Morrison, 1999). It must be remembered that at Swansea and Nantgarw Billingsley was striving for perfection and making modifications to the body and firing conditions in the pursuit of excellence but this could only be achieved at the expense of commercial viability and eventually realised the closure of the factories: in contrast, the Sevres porcelain manufactory was under Royal patronage and underwriting and was further protected in Napoleonic France by the Revolutionary Assembly. Demand for Sevres porcelain in Britain from Revolutionary France was still very high and encouraged its importation via blockade runners. After the Peace of Amiens in 1815, which ended the effective and crippling blockade of French ports by the Royal Navy, peace and stability meant that French porcelain could once again be made available in Britain against which British porcelain manufactories had now to compete, often unsuccessfully—by the 1820s, therefore, the supremacy of French production though not necessarily of quality but certainly through past reputation, was re-asserting itself and probably actually conspired in some undefinable measure to the downfall of the Swansea and Nantgarw factories. Morton Nance (*The Pottery and Porcelain of Swansea and Nantgarw*, 1942) also cites the general economic depression after the Napoleonic Wars as lasting for more than a decade as a contributory factor for the demise of the Welsh porcelain factories. It has also been asserted that the post-Revolutionary War of 1812 with the United States of America also severely hampered the sale of manufactured goods to this emerging economy, and ceramics suffered accordingly in a quite significant way.

A recent evaluation of the existing analytical chemical information for pieces from the Swansea and Nantgarw factories has been made (H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015a) in which the results from the older wet chemical methods of chemical analysis are compared with modern microanalytical techniques and several inconsistencies have been highlighted, suggesting that much further work needs to be undertaken to fully comprehend the changes in the porcelain body resulting from compositional changes in recipes and kiln firing temperatures. It must be appreciated that the earliest analyses were achieved through the so-called wet chemical methods whereby weighed ceramic fragments taken in their entirety or as sections of whole or damaged pieces of porcelain were subjected to a process of digestion or dissolution in strong, hot mineral acids and their chemical composition determined through gravimetric analysis, a process of

Table 11.1 Analytical data for Nantgarw and Swansea porcelains (after Eccles and Rackham, 1922)

Component %	Nantgarw			Swansea	
	No. 21	No. 22	No. 23	No. 40	No. 41
Silica	46.00	38.90	47.80	84.00	81.56
Alumina	17.01	18.12	26.49	8.67	8.90
Phosphoric acid	13.90	17.10	9.85	–	0.33
Lime	19.70	22.50	13.25	0.97	0.70
Magnesia	traces	traces	traces	2.50	4.26
Iron oxide	traces	traces	traces	–	traces
Potash	2.69	2.56	3.12	2.91	3.27
Soda	0.39	0.14	0.15	0.60	0.61
Total %	99.69	99.32	100.66	99.65	99.63
Bone ash %	35	40	25	–	–
Soapstone %	–	–	–	7.5	13

weighing precipitates after filtration and drying to constant weight. This was an extremely laborious procedure which had to be accomplished in replicate and consumed considerable quantities of the specimen, therefore being totally destructive of the sample through its dissolution and ultimate conversion into chemical salts. These gravimetric analyses gave measured percentages of key elements such as silicon, calcium, sodium, potassium, phosphorus and sulphur, expressed as chemicals such as silica, calcium phosphate, soda and potash (Table 11.1). These would have no relevance at all to the actual chemical composition of the ceramic bodies themselves but the analyses facilitated the determination of the amounts of each element present in the porcelain paste before kiln firing took place, for example, silica from powdered glass frit, soda from lye and calcium phosphate from calcined bone ash which would have been determined to be of a higher value in bone china than in true porcelain. It must be stressed that the first analyses of Nantgarw and Swansea porcelains reported by Eccles and Rackham in 1922 on specimens from the Victoria & Albert Museum, South Kensington, London, ceramics collection was a landmark study: readers who wish to consult the original pamphlet describing their results for data on the Welsh porcelains should not be side-lined by the title of the work, "*Analysed Specimens of English Porcelain*", as other factories such as Bow, Chelsea, Bristol, New Hall, Worcester, Liverpool, Longton Hall, Lowestoft, Pinxton, Derby, Caughley, Coalport and even K'ang Hsi Chinese porcelains are included.

More recent applications of spectroscopic and diffraction techniques and instrumentation have been made to the analysis of porcelains and ceramics: this has enabled a different and novel type of analytical information to be derived on porcelain and ceramic body composition which truly reflects its actual chemical components. This can also be accomplished using microscopic techniques which reveal the compositional changes over very small micro domains and which therefore give a much more accurate picture of what has happened during the firing

Table 11.2 SEM/EDAXS analytical data (%) from Tite & Bimson (1991) on three Nantgarw factory wasters

Specimen	SiO_2	Al_2O_3	Na_2O	K_2O	MgO	CaO	TiO_2	FeO	PbO	P_2O_5	SO_2
N14-1	43.8	12.5	0.8	2.5	0.6	22.5	–	–	–	17.4	–
N18-4	45.0	13.3	1.0	2.2	0.5	21.2	–	0.4	–	16.4	–
N18-7	44.6	13.3	0.7	2.2	0.7	21.9	–	0.2	–	16.4	–
E&R*	42.5	17.5	0.3	2.6	–	21.2	–	–	–	15.5	–

*Eccles and Rackham, *Analysed Specimens of English Porcelain in the V&A*, 1922

processes. By enabling information to be accessed through relatively small and naturally unglazed portions of decorated pieces the range of samples that can be studied is increased significantly. Therefore, a list of the chemical components which occur in Nantgarw and Swansea porcelains has been compiled in Table 11.2 to indicate the complexity of the chemistry that has been undertaken in the kilns at the high firing temperatures, where solid state chemistry reactions have been ongoing during the firing processes: this information not only is more definitive of the porcelain paste composition before firing but is clearly representative of the chemical changes which have taken place during firing, i.e. a measure can be made of changes in kiln firing temperatures. As with all things, however, a greater complexity of chemical composition renders more experimentation to be undertaken to define better the characteristics of each china factory—a spinoff, of course, would be the Holy Grail of porcelain analysis: a non-destructive analysis of porcelains which will define and determine the source of unknown specimens and the ability to correctly attribute them to a porcelain factory—as has been accomplished so successfully with oil paintings through the identification of characteristic pigments, stratigraphy and substrate treatments in artists' palettes and methodology.

Scientific advances have been made in the last two decades in the non-destructive instrumental analysis of pigments used in the decoration of artworks and ceramics: a chronological database for the usage of historically important pigments can be used to establish the originality of works of art and the identification of areas of later unrecorded restoration from which a correct "forensic art" scientific provenancing can be undertaken for correlation alongside available documentary evidence and historical records. As a result, several major international art houses and auction rooms now require the provision of this scientific information to be made as a component part of the overall provenancing before the sale of major artworks can be undertaken (H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015b).

11.1 Porcelain Bodies—A Scientific Appreciation

Before we can interpret the analytical chemical and mineralogical compositions of Nantgarw and Swansea porcelains and their special glazes, it is necessary to consider the raw materials of porcelain production generally. Two types of

porcelain can be recognised generically: *hard paste* (*pate dure*), or true Chinese porcelain, and *soft paste* (*pate tendre*), exemplified by early English porcelains of the 1750s such as Chelsea, Liverpool and Bow. Hard paste porcelain comprises two main ingredients, infusible kaolin (china clay, an aluminium silicate) and fusible *petuntse* (china stone, a potassium aluminium sodium silicate, also known as steatite). Wet chemical analysis of hard paste porcelains show the presence of components such as SiO_2, Al_2O_3, KOH and NaOH; an example of such an analysis is provided by a Chinese vase from the K'ang Hsi period (1662–1722) (Eccles and Rackham, *Analysed Specimens of English Porcelain in the V&A Museum Collection*, 1922) which gave silica 71.8%, alumina 23.0%, soda 2.1% and potash 1.9% with minor lime 0.6% and phosphoric acid 0.2%. Because of the difficulties experienced in the manufacture of hard paste porcelains in emulation of Chinese export wares in mid-18th Century England and also in mainland Europe, soft paste porcelains (*pate tendre*) were developed, of which three further sub-types can be identified: *glassy porcelain*, exemplified by the early French porcelains, *soapstone porcelain* containing soaprock from Cornwall, and *boneash porcelain*, containing calcium phosphate derived from the incineration of bones (Tite and Bimson, 1991). The *kaolin*, or china clays, employed in early British porcelains were usually sourced in Cornwall and the quality varied extensively: Lewis Weston Dillwyn's notebooks refer to trial compositional recipes for his Swansea porcelains between 1814 and 1817 in which he mentions two distinct sources for his china clays: Norden clay from Purbeck in Dorset, shipped out from Poole directly to Swansea docks and St Stephen's clay from St Austell in Cornwall, which was shipped out from Plymouth. Norden clay was one of the earliest clays used in ceramics manufacture in Britain, being used in the construction of clay pipes for tobacco smoking shortly after Sir Walter Raleigh brought home tobacco from the Americas in 1558. It was termed "ball clay" and in 1771 Josiah Wedgwood signed a contract with Thomas Hyde of the Norden mine for a supply of 1400 tons of ball clay per annum, which he called his "*secret ingredient—the whitest clay from Dorsetshire*", for the manufacture of his much esteemed Wedgwood *Queen's Ware* earthenware pottery. In 1792 Wedgwood announced to Sir Joseph Banks, who had hitherto been supplying him with china clay from Botany Bay, Australia, that his British sourced Purbeck Blue clay, also known as Norden ball clay, was the "*best in the world*"; in 1813, Dorset ball clay was so popular that it became exempt from Poole harbour revenue taxation, so making it commercially very attractive for usage in the ceramics industry. Clearly, this must have been instrumental in coming to the attention of Lewis Weston Dillwyn, who was founding his fledgling Swansea china factory around this time alongside the existing Cambrian Pottery in Swansea.

St Stephen's clay, on the other hand, was a Cornish clay from Tregonning Hill near St Austell at the edge of the Cornish clay mining operational district. In 1746 William Cookworthy discovered the china clay deposits here at Growan, which he used in the early manufacture of his Bristol hard paste porcelains, filing a patent for porcelain manufacture using Growan clay in 1768. Unfortunately, the presence of small particles of mica in the kaolin were deleterious to the appearance

of the fired porcelain, giving rise to minute black specks in the otherwise white translucent, fired body. A better quality of clay was soon found at St Stephen's mine nearby and this provided the bulk of the clay mining operations from this area well into the late 19th Century. The quality of clay from this source was also recognised by other porcelain manufactories, such as the Rockingham factory at Swinton in Yorkshire, which imported clay from St Stephen's and also from the Meledor Mine at St Columb, in Cornwall (A. Cox & A. Cox, *Rockingham Porcelain*, 2005). Again, the use of the higher quality St Stephen's Cornish clay in Swansea porcelain by Dillwyn would have been a conscious decision in his quest for a finer, more translucent porcelain body. It has been proposed that in Lewis Weston Dillwyn's experiments to achieve translucent porcelain perfection at Swansea a variety of the beautiful duck's–egg body was achieved through manipulation of the china clay component at factory source: the achievement of a particularly fine porcelain of exceptionally clear translucency by Samuel Walker, the technical expert in ceramics production in Dillwyn's china works at Swansea eventually resulted in the adoption of this composition for the *Garden Scenery* dessert service decorated especially for Dillwyn by Thomas Baxter, which was most highly prized by Dillwyn and which formed part of his personal settlement at the sale of the factory to T. and J. Bevington for what transpired to be the final phase of the Swansea china works operations which commenced in 1819.

11.2 The Production of Porcelain: Source Materials and Chemistry

Although porcelain manufacture had been discovered by the Chinese many centuries before, it was a closely guarded secret that only really pervaded into Western knowledge in the early to mid-18th Century; the details of its actual discovery is now lost in history and several apocryphal tales abound as to the catalyst for its production—one of these relates to the early Chinese practice of placing their excavated kaolin in dung heaps prior to its being worked up for ceramics manufacture: this could be related to the absorption into the kaolin of urea, $CO(NH_2)_2$, a by-product of human and animal protein metabolism and present in significant amounts in urine. It was found that thereby the kaolin could be potted very finely, resulting from the intercalation of the urea molecules between the silicate sheets of the china clay—this observation was correlated with the observation that snakes laid often their eggs in dung heaps to keep them warm, and that the resulting very fine and translucent nature of their eggshells was an indicator of the potential procedure to be adopted for the creation of what transpired to be the famous, very thinly potted Chinese "eggshell" porcelain!

The export market for Chinese porcelains to Europe in the early 17th and 18th Centuries was insatiable and provided a high demand for Portuguese trade with China and their Far East colonies: several wrecks of Portuguese carracks which foundered in storms off the southern coast of Africa in the early 1600s have given

archaeologists a rich source of historical information about this trade. The *Espiritu Santo, San Joao Baptista and Santa Maria Madre de Dios* all sank off South Africa on the way home to Portugal in the years 1603–1620 carrying cargoes of Ming Dynasty porcelains (E. A. Carter et al., *Heritage Science,* 2017). Early attempts by English manufacturers to simulate Chinese hard paste porcelains were largely unsuccessful until William Cookworthy started up his porcelain factory at Bristol in 1748 and filed a patent for the adoption of kaolin from Cornwall into the recipe in 1764.

It is appropriate here to consider the composition of porcelains, paste bodies and their associated glazes, and to relate the solid state chemistry of their manufacture to the kiln firing processes: in this way the variation in the reported experimental recipes noted by Dillwyn in his handwritten work book notes can be correlated with his eventual achievement of the satisfactory Swansea porcelain body, the so-called duck-egg porcelain. A detailed examination of the Nantgarw analogue in a similar fashion is unfortunately not possible to the same extent since William Billingsley and Samuel Walker's records have not survived—but we are still able to determine a baseline recipe for porcelain production at Nantgarw from a consideration of the Swansea recipes, the experimental changes in composition made by Dillwyn and a knowledge of the ceramics and kiln chemistry as determined here.

11.3 Lewis Weston Dillwyn's Recipes for the Swansea Porcelain Body

The handwritten notes made by Dillwyn between September, 1814, and December, 1817, appear in the form of several pages in his workbook: these have been reproduced in Eccles and Rackham (*Analysed Specimens of English Porcelain*, 1922) as a result of the gift made by John Campbell to the library of the Victoria & Albert Museum in 1920, where these workbooks have been archived. Several authors have commented on the fact that although these data were actually available to Herbert Eccles and Bernard Rackham when they reported on the selected specimens of Swansea porcelain from the V&A collection and produced the first ever chemical analysis of their composition, the analysts failed to correlate their experimental data with those of Dillwyn's recipes (which are reproduced here in an updated form later)—this could have arisen because Eccles and Rackham actually analysed many factories in their study (some 17 different porcelain manufactories can be identified in their report) and it is possible that such a detailed comparison was not possible for all the factories studied, especially for the first of these, the K'ang Hsi Chinese porcelain, whose composition was a closely guarded secret. Dr. John (*Swansea Porcelain*, 1958) subsequently made this comparison for Swansea porcelain and concluded that the recipes cited by Dillwyn and the chemical data reported by Eccles and Rackham were compatible. However, further examination of Dillwyn's recipes can shed some light on his

efforts to improve the Swansea porcelain body in what was a critical period of factory production: naturally, Dillwyn's compositional changes in the paste were made empirically and perhaps seemingly rather haphazardly—but some important conclusions can now be drawn about these changes and how they relate to the final product from the points of view of decorative appeal and commercially successful enterprise regarding the marketability of the china. Before we can undertake such a consideration, however, it is necessary to acquaint ourselves with some of the basic terms and definitions of the mineralogical components that together make up porcelain manufacture. Dillwyn's notes are handwritten, written in a shorthand which is occasionally rather difficult to read, but it seems that about eight different Swansea bodies are described—it is, of course, not known how many of these trial runs would have actually been moved into full production especially when Dillwyn's written comments such as "*not a very good body was produced*" were made after the initial trial kiln firings, but it is likely that between three and six Swansea paste bodies would have been produced more extensively from the more successful experiments that were undertaken.

Sand: the finest quartz river sand was specified to provide the silica, SiO_2, necessary for the base paste fusion. Sand is often coloured by the presence of transition metal oxides, such as iron (III) oxide, and infusible particulate matter such as carbon or manganese (IV) oxide can generate blemishes in the glassy matrix formed upon fusion, with a resulting deleterious effect on the porcelain translucency.

Smalt: a cobalt blue glass which is used finely ground in the glassy matrix to combat any background residual yellow or brown colouration which may occur from impurities in the matrix. It is also a component of the glaze slip into which the fired porcelain piece is dipped for a sealing coat of a high gloss, white finish. Cobalt blue glass consists of cobalt (III) oxide added to an alum inosilicate glass, typically comprising SiO_2 65%, K_2O 15%, Al_2O_3 5% and Co_2O_3 10%. Frequently represented incorrectly as CoO. SiO_2, cobalt blue is really a cobalt aluminosilicate and has been known from about 1500. It has often been confused with the more ancient historic Egyptian blue, which is a calcium copper(II) silicate, Ca $CuSi_4O_{10}$, which is also termed *cuprorivaite*. Cobalt blue was used extensively in blue transfer earthenware patterns in the 18th and 19th Centuries and the famous "Bristol blue" coloured glass of bottles and drinking vessels of the Georgian and Regency periods reflect the trade in this valuable coloured oxide through the port of Bristol.

Borax: is sodium tetraborate decahydrate, $Na_2B_4O_7$. $10H_2O$, and is used as a flux to aid the fusion of the glassy components of the paste in the firing kiln—this meant that the paste would become more fusible at a lower temperature and this would assist in the better preservation of the articles in the kiln.

Clay: clay is a generic name for the geologically weathered materials from feldspar, granites and basalts. It covers many types of structure based on three-dimensional silicate matrices with interstitial metal ions and water molecules, several of which have Si–O–Si bridging which renders different degrees of pliability and hardness upon the silicate skeletons. *Ball clay* is an extremely fine

sedimentary material whose inclusion in a porcelain paste before firing renders a greater plasticity and ease of working. *Kaolin* is china clay, sometimes called kaolinite, formulated as $Al_2Si_2O_5(OH)_4$, an aluminosilicate of the phyllosilicate type and a member of the serpentine group. It is sometimes represented as Al_2O_3. $2SiO_2$. $2H_2O$, which can assist in the interpretation of the wet chemical analyses of porcelain. It is appropriate here to describe the complex changes which occur in the structure of kaolin when subjected to the heat of a ceramics firing kiln: firstly, dehydration (loss of molecular water) commences at 550–600 °C to form metakaolinite with loss of further hydroxyl (OH) groups up to 900 °C. At this temperature the first chemical skeletal structural change occurs in the silicate matrix, when the original $Al_2Si_2O_5(OH)_4$ undergoes transformation to $Al_2Si_2O_7$ with the formal loss of two molecules of water. At the slightly higher temperature range of 925–950 °C a spinel is formed when two molecules of the dehydrated aluminosilicate form $Si_3Al_4O_{12}$, with the elimination of a molecule of SiO_2. Around 1050 °C three molecules of this spinel now react to form mullite (Al_2O_3. $2SiO_2$) with the elimination of 5 molecules of silica as SiO_2 in its high temperature form, cristobalite. Finally, at the very highest kiln temperatures of 1400 °C stability is achieved with some internal rearrangements to the structure of the mullite.

Soaprock or steatite: or soapstone, is also a metamorphic schist silicate but rich in magnesium—a variant of talc, it is described simply as a magnesium silicate. This was later correlated with the *petuntse* of the Chinese hard paste porcelains.

Pearl ash: this item has caused some confusion in attempts to describe its chemical composition. It is potassium carbonate, K_2CO_3, and is usually sourced naturally in carbonaceous deposits along with its calcium analogues—the isolation of pure potassium carbonate in industrial quantities is rather expensive and quite prohibitive for commercial porcelain manufacture, hence it was used as a less pure "potash", which gave rise to its presence in analytical determinations simply as K_2O.

Alabaster: although chemically this is a translucent form of hydrated calcium sulfate, gypsum, $CaSO_4$. $2H_2O$, in earlier times this terminology was also applied to translucent forms of calcium carbonate called *onyxmarble* (properly termed calcite or aragonite, two forms of naturally occurring calcium carbonate), not to be confused with onyx, which is a coloured silicate. Dillwyn is on record as saying that the presence of alabaster could be detrimental to the Swansea porcelain body because of its "blistering" effect—this could be ascribed to its decomposition around 650–700 °C, releasing gaseous carbon dioxide and forming lime, calcium oxide. The lime would not in itself be a problem as this was added as a constituent in the porcelain paste mix before firing anyway, but the formation of CO_2 bubbles in the paste reactants in the kiln would certainly have created voids in the plastic body and give rise to a lumpiness and blistering. It can be assumed, therefore, that Dillwyn was referring to the calcite or aragonite connotation for alabaster as gypsum would not decompose in the same way in the kiln, merely dehydrating to anhydrite, $CaSO_4$, and thereafter remaining stable.

From Dillwyn's notebooks and handwritten notes relating to the experiments he and Walker undertook with varying the composition of the Swansea body, which

are reproduced here with some amendment to remove shorthand descriptors in Document 1, it has been possible to distil some detailed quantitative information about the composition of his Swansea porcelain bodies between 1815 and 1817: a "standard" Swansea body was cited as being composed of a glass frit comprising 11 parts of sand, 9 parts china stone, 6 parts pearl ash and 3 parts of borax which were sintered and then ground finely followed by mixing with 12 parts lead oxide and 1 part soap rock. An alternative recipe involved mixing a frit of 12 parts china stone, 8 parts bone ash, 8 parts St Stephen's clay and 1 part Norden ball clay mixed with 20 parts fine sand and 1-part pearl ash in water. Other experimental bodies were tried such as 45 parts china stone, 10 parts lime, 28 parts St Stephen's clay mixed with 9 parts sand and 1 part St Stephen's clay with a little lime: Dillwyn commented that the grade of china produced rivalled the best Chinese eggshell porcelain—whereas other compositional changes around this theme closely matched Dresden and the best French china. The last entry in his workbook in December, 1817, gave yet another compositional change involving 24 parts bone ash, 8 flint glass, 16 parts St Stephen's clay, 5 parts Norden clay and 1-part smalt—which he remarked produced "a beautiful white opaque body", which with the application of glaze number 3 was the finest of all he had ever produced at Swansea (see Appendix A).

As an example of the empirical changes he made with Samuel Walker, his kiln designer and master, the examples below dating from the autumn of 1816 to March, 1817, are noteworthy:

- 3 parts china clay, 3 parts soapstone and 3 parts bone ash: gave an excellent body in all respects.
- 8 parts china clay, 7 parts soapstone and 8 parts bone ash: gave an improved porcelain.
- 8 parts china clay, 7 parts soapstone and 9 parts bone ash: gave a harder body.
- All combinations gave good finishes with glaze number 2.

In parallel with development of the porcelain bodies, Dillwyn also experimented with glazes: glaze composition changes were difficult to undertake because of the necessity to have a glaze that was neither too hard nor too soft. The established procedure was also quite restrictive as the glaze needed to flow easily but not tend to pool thickly in the complex curvatures of the porcelain before firing. The constituents after careful weighing were fused into a glass which was poured molten into cold water to break it up then it was mixed with other components in the correct proportions, finely ground in water and formed into a cream (called a slip) into which the fired cooled porcelain could be dipped for subsequent refiring in a *glost kiln* at lower temperatures. Decoration could be applied either before or after glazing—then referred to as underglaze or overglaze painting. Dillwyn experimented with only three recorded glazes of the following composition:

Glaze Number 1: Specifically, for the soaprock (trident) china.

A glass frit was formed between 10 parts china stone, 6 parts lime, 2 parts china clay, 12 parts sand, 14 parts lead oxide, 8 parts calcined borax and 4 parts nitre.

This was prepared as above then finely ground and mixed in water with 30 parts china stone, 6 parts lime, 2 parts china clay, 14 parts lead oxide and 0.5-part arsenic oxide.

Glaze Number 2: Specifically, for the duck's egg body china.

A glass frit was formed between 24 parts sand, 12 parts lime, 6 parts lead oxide, 16 parts calcined borax and 2 parts pearl ash. This was prepared as above then finely ground and mixed in water with 40 parts china stone, 28 parts lead oxide, 6 parts lime and 4 parts St Stephen's clay.

Glaze Number 3: a thicker consistency glaze dip than either numbers 1 or 2.

A glass frit was formed between 24 parts sand, 12 parts lime, 6 parts lead oxide, 16 parts calcined borax and 2 parts pearl ash. This was prepared as before then mixed with 48 parts china stone, 6 parts lime, 4 parts St Stephen's clay, 30 parts lead oxide and 0.5-part arsenic oxide.

It should be recognised that glaze numbers 1 and 2 required greater concentrations of borax than silicates, hence the mixture is then more fusible. It is also recorded that the addition of smalt to the glaze constituents improves the whiteness of the resultant glaze, which can otherwise retain a creaminess. Glaze number 1 was reserved for the trident porcelain body, which with its pigskin texture and rather opaque transmission capability was considered inferior to the duck's egg translucency and in a large way contributed to the fall off of the factory output desirability with its London retailers and clients, despite genuine improvements in robustness experienced with use of the porcelain.

It is now appropriate to delineate the chronology of Swansea porcelain production alongside these recorded experimental changes:

September 1814: Lewis Weston Dillwyn was asked by Sir Joseph Banks, President of the Committee of Trade and Plantations, to report on the new porcelain being made by William Billingsley and Samuel Walker at Nantgarw, who had made a representation to Government for funding support, which eventually was not granted. Dillwyn appreciated very much the fine quality of the Nantgarw porcelain but expressed concern at the high losses suffered on firing, which he attributed to kiln imperfections. At the same time, he entered into an agreement with local potters to commence the manufacture of porcelain at Swansea adjacent to the Cambrian Pottery.

October 1814: William Billingsley and Samuel Walker moved to Swansea after closure of their first attempt to manufacture porcelain at Nantgarw. At this stage Swansea was only a very small china works situated alongside the Cambrian Pottery: a small porcelain kiln had been constructed and used for the first trials of a Nantgarw type porcelain body at Swansea, which proved to be unsuccessful. Dillwyn commented at this stage that production of the Nantgarw body would not be profitable; it appears that he was also very concerned at the legal implications of employing Billingsley and Walker in porcelain production because of a perceived injunction that was in place raised by Martin Barr of Barr, Flight and Barr following their departure from Worcester in 1811 which he may

have believed effectively prevented him and them from adopting their secret paste recipe for porcelain manufacture.

1815: Dillwyn employed Samuel Walker, who was a technical expert in kiln construction, in experiments designed to strengthen the Swansea body without loss of quality. These experiments continued throughout 1815 and 1816 until Walker left Swansea in September, 1817. Clearly, Dillwyn's notebooks giving details of the trial recipes cannot be very complete or comprehensive as only a few changes are mentioned, not enough to occupy both men over a two years' time span. Walker's efforts were directed at the manufacture of two distinct types of porcelain: the first containing china clay and bone ash and the second containing soaprock(steatite), with several variations in composition of both.

Autumn 1816: a china clay body was trialled and Dillwyn commented this was an "*improvement*" on earlier bodies. This was the duck's egg china because of its clear greenish blue translucency which soon became renowned and an adopted characteristic of Swansea porcelain. The transmitted colour varied depending upon the thickness of the potting; it proved costly to make but soon became highly popular with the London dealers and their clientele. The china body was complemented by a fine clear glaze which, unlike other rival manufactories such as Bloor Derby, was not prone to cracking and was free from crazing.

1817: the inclusion of soaprock in the paste components resulted in the finished trident body, so-called because of the impressed motif, which Dillwyn regarded as an improvement on the duck's egg body because it was much more robust and suffered little kiln damage and wastage upon firing. Early versions of the soaprock body were better than the final body which Dillwyn sent to London for retail and had a glassy consistency somewhat similar to the rare glassy porcelain tried by Dillwyn later in 1817. Unfortunately for Dillwyn, the London retailers refused to accept it and did not like its dense smoky brown translucency, the rather gritty glaze and pigskin-like appearance of the porcelain; despite this, however, some of the trident porcelain decorated locally is valued for the excellent floral decoration painted by accomplished local artists such as Henry Morris, David Evans and William Pollard. This rejection of his improved porcelain by the retailers proved to be the catalyst for the retirement of Lewis Weston Dillwyn from porcelain manufacture at Swansea; later in 1817 he leased the business to T.&J. Bevington and Co. By this time Samuel Walker had departed from Swansea to start up at Nantgarw again with William Billingsley for the second phase of porcelain production there. Hence, Dillwyn probably correctly realised that there would be no one left at Swansea who had the technical expertise to undertake further experiments in the manufacture of porcelain. It is believed now that the Bevingtons did not make any more porcelain at Swansea and that they just decorated the considerable quantities of porcelain left in the white that they had inherited, except perhaps for some unglazed biscuit figurines of rams; unlike their competitors such as Derby, Swansea did not retail much biscuit porcelain at all, perhaps rather surprisingly in view of the prime requirement of biscuit porcelain being a perfect porcelain base with a slight waxy sheen—this it is suspected reflected the change in society taste from the heyday of biscuit porcelain in

the period 1790–1800 in favour of highly decorated, and comparatively over-decorated, wares in the Regency period. The only decoration on the Swansea biscuit wares were applied floral ornaments and this decoration is universally assigned to James Goodsby, late of the Derby china works.

Few examples, therefore, exist of Bevington marked Swansea porcelain, an example of these is provided by the *Bevington-Gibbins* service discussed later, and they are characterised by a very poor translucency and high opacity. The Bevingtons decorated the porcelain in stock until the final sales in 1822, even after which time some stock was still unsold and purchased by the then redundant Swansea artists such as Morris and Evans for decoration and firing in their own muffle furnaces in the later 1820s. The Swansea moulds and appliances were purchased by John Rose for his Coalport factory in 1822 but there is no evidence that Billingsley actually used either these moulds or his Nantgarw recipe at Coalport when he joined Rose in 1819 and it seems that new moulds were constructed and incorporated into the Coalport production.

A statement made by Henry Morris to Colonel Grant Francis in 1850, the substance of which is given later in Appendix B, provides eyewitness comments on the operations of the Swansea factory in the closing years and this is important for one particular piece of evidence that William Billingsley actually did paint porcelain at Swansea and moreover that he closely monitored the output of the decorators' workshop and indeed superintended overall the manufacturing operations. He apparently made a sketch book for others to follow, as he did at the Derby china works but, unfortunately, the Swansea analogue is missing, unlike its Derby counterpart which has proved so useful for historical research (see Appendix B).

An inconsistency arises when we try to undertake a similar appraisal of the Nantgarw recipes as no extant records are available for analysis: it is suspected that this was a deliberate decision of William Billingsley and Samuel Walker to preserve their recipes from espionage. Indeed, it has already been recounted that when Billingsley went to Coalport upon his departure from Nantgarw he did not divulge this secret recipe to his new employer, John Rose. Nevertheless, several attempts have been made with modern experiments to recreate the Nantgarw body, achieved with only varying degrees of success.

11.3.1 The Chemistry of Phyllosilicates

A key component of the porcelain bodies of Swansea and Nantgarw is the china clay, which chemically is composed of phyllosilicates: formed from the metamorphic geological degradation of basalts, granites and feldspars, the fineness and purity of the china clays defines the porcelain quality after firing. Generally, phyllosilicate chemistry is complex and involves the coordination of metal ions to silicon-oxygen bonds classified into two types: dioctahedral and trioctahedral. The former has two thirds of the sites in the octahedral layer of skeletal silicon-oxygen atoms occupied by $Al^{3+}$and Fe^{3+} ions whereas the latter has all three sites in the skeletal silicon-oxygen

structure occupied by Mg^{2+} and Fe^{2+}, and other divalent cations. For example, kaolinite, $Al_2Si_2O_5(OH)_4$, has the Al^{3+} metal cations occupying octahedral coordination between two-dimensional sheets of Si_2O_5 units. Another dioctahedral phyllosilicate is serpentine, which has Mg^{2+} and Fe^{2+} ions, and kaolinite and serpentine can exist in solid solution admixtures as natural minerals. The hydroxyl groups usually occur coordinated to the metal ions but water molecules also occur interstitially between the sheets of silicon-oxygen atoms, for example, in vermiculite.

The china clays generically comprise mixtures of phyllosilicates such as mica, talc and pyrophyllite as well as kaolinite and serpentine: being natural minerals they are also found associated with other minerals such as anatase and rutile, the common titanium (IV) oxides. This means that the sourcing of china clays for porcelain production is highly significant for the resultant behaviour of the paste body composite in the firing kilns. Dillwyn has commented that the presence of an alabaster onyx marble impurity in the natural mineral materials he used for porcelain production at Swansea resulted in a most unacceptable and undesirable "blistering" effect on the fired porcelain body, which we have ascribed earlier to carbon dioxide formation in the incipient porcelain body. The importance of sourcing materials from selected mines was therefore of paramount importance to porcelain manufacturers. Hence, Dillwyn's insistence on securing the product of the St Stephen's mine for his normal china clay and the Norden mine for his specialised ball clay. Likewise, Billingsley would have demonstrated a similar aptitude for securing supplies of his chosen clay and glass frit raw materials: W. D. John (*Nantgarw Porcelain*, 1948, pp. 49–53) points out that Billingsley and Walker took great pains to keep their recipe for the Nantgarw porcelain body secret and he also alludes to the fact that this was perhaps surprisingly also not communicated to their sponsors, William Weston Young at Nantgarw and Lewis Weston Dillwyn at Swansea. However, Dillwyn had left some rather sparse notes about the composition of Swansea pastes he was particularly interested in as we have seen above and Young has done the same to a lesser extent for Nantgarw—with the proviso that in the latter case Young's notes address the glaze composition in particular for Thomas Pardoe so that they were able to complete the decoration of unsold Nantgarw stock locally after Billingsley and Walker's departure in 1819. John Taylor, writing in 1847 (*The Complete Practical Potter*, Shelton 1847) ascribes the following recipe to Samuel Walker at Nantgarw: 26 lbs bone, 14 lbs of Lynn sand and 2 lbs potash were mixed with water then made into bricks and fired in a biscuit kiln. Then the 42 lbs of cooled frit were ground with 20 lbs of china clay and made into the paste. An interesting anonymous article appeared some years later in the *Pottery Gazette*, December 1st, 1885, which repeated this composition for the Nantgarw porcelain body and additionally described the glaze. Early experiments designed to reproduce the Nantgarw porcelain body were undertaken by a ceramic research chemist, Professor J. W. Mellor, at Stoke-on-Trent based on this body recipe and then fired at 1250–1300 °C to yield a porcelain which was considered as good as that of the original Nantgarw when subsequently glazed according to Young's notes (see E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, pp. 389–394). From this, Dr John has deduced

that fine-grained Lynn sand from Norfolk was mixed with calcined flints from the same source, pearl ash (crude potassium carbonate), soda ash (sodium carbonate), bone ash from calcined ox bones and powdered china clay (possibly with some associated amounts of feldspar and soapstone) were used in the Billingsley/Walker Nantgarw porcelain composition. The composition of the Nantgarw glaze was also given as follows: 50 parts sand, 60 parts borax, 20 parts whiting, 4 parts nitre and 4 parts lead oxide were sifted well and fritted, then to 50 lbs of this frit was added a mixture of 30 parts china stone, 4 parts china clay, 4 parts whiting and 4 parts lead oxide. Professor Mellor made up a glaze according to this recipe and fired it onto the Nantgarw simulated biscuit porcelain made as above at a temperature of 1100–1120 °C. In the joint opinion of both Professor Mellor and Mr Nance, the body and glaze very closely represented the complete Nantgarw porcelain produced by William Billingsley.

A further recipe for a Nantgarw glaze post—Billingsley/Walker period has also been reproduced by Morton Nance (*The Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 393), and attributed to William Weston Young and Pardoe for the express purpose of completing and decorating the china left in stock for disposal locally between 1819 and 1822. This information purportedly arose from relevant notes transcribed from Young's diary given to Turner (*The Ceramics of Swansea and Nantgarw*, 1897): this glaze had the composition of 5 parts of Lynn sand, 4 parts borax as a frit then the addition of either 1 or 2 parts of lead oxide to one of the frit. Professor Mellor found that both glaze recipes gave adequate representation of the so-called Pardoe glaze seen on later Nantgarw wares but it was not made clear which of these was believed to have been actually used by Young and Pardoe.

A very important piece of information which is absent from the Nantgarw recipes as taken from these later publications is the source of the china clay—as we have seen from Dillwyn's notes of his Swansea experiments, the specification of the source of the china clay was vital. Unfortunately, the actual sourcing of their china clay by Billingsley and Walker has now been lost. It is also quite possible that Billingsley and Walker added small quantities of unknown material to their recipe: Dillwyn added arsenic oxide, smalt and ball clay to his mixture, for example, and such items could well have appeared in the Nantgarw paste mixture too. It would be reasonable to suppose, without any evidence either for or against, that Billingsley and Walker in the second phase of their Nantgarw porcelain production upon their departure from Swansea would have also acquired the best china clay from Cornwall for their efforts, knowing of the success of its incorporation into Swansea porcelain.

11.4 Early Analyses of Nantgarw and Swansea Porcelains

Wet chemical analysis (Church, *English Porcelain from Museum Collections*, 1904) of early English soft paste porcelains, exemplified by wasters from the Bow factory, gave silica 40.0%, alumina 16%, lime 24.0%, phosphoric acid 17.3%,

magnesia 0.8%, soda 1.3% and potash 0.6%. The phosphoric acid content from these data equate to 43.8% bone ash (based upon calcined cow bones formulated as calcium orthophosphate). Bone consists of an organic component, collagen, distributed through an inorganic matrix of hydroxyapatite; upon calcination at temperatures in excess of 250 °C bone is degraded to a white powder known as "bone ash", which has been variously and often incorrectly represented in the literature as a dibasic calcium phosphate dihydrate, $CaHPO_4.\ 2H_2O$, and a mixture of calcium hydroxide and tricalcium orthophosphate, $\{Ca_3(PO_4)_2\}_6.\ \{Ca(OH)_2\}$. Elegant quantitative analytical chemical studies carried out by Morgulis and Janacek (1931) have clearly demonstrated that bone ash is closely represented chemically as the tricalcium phosphate complex with calcium hydroxide, with a calcium phosphate: calcium hydroxide molar ratio of 6:1 and a Ca:P ratio of 1.99–2.00; despite there being no evidence at all for the presence of dibasic calcium phosphate dihydrate in calcined bone ash, even now there are claims from commercial suppliers that the molecular composition of bone ash is $CaHPO_4.\ 2H_2O$, for which the Ca:P ratio is only 1.4, which is clearly at variance significantly with the established and correct chemical formulation!

The first chemical analyses by Eccles and Rackham (H. Eccles and G. Rackham, *Analyses of English Porcelain*, 1922) reported for Swansea and Nantgarw porcelains in the Victoria & Albert Museum collection are still regarded as definitive and ground-breaking but they required the significant consumption of all or parts of the chosen specimens for wet chemical digestion—a situation that would not be countenanced today. An example of one of these specimens, a Nantgarw saucer decorated with pink roses, green foliage and gilding, sampled by Eccles & Rackham to undertake their analysis is still preserved in the V&A Museum collection, being numbered 22 in Eccles & Rackham's work book; the extensive damage caused to the specimen during the sampling procedure is still evident from the photograph supplied in their report. In fact, the first account of chemical analysis performed on truly archaeological artwork specimens (Davy, 1815) required the complete destruction of the specimens from Pompeiian painted frescoes excavated and supplied by Canova, which Sir Humphry Davy accomplished successfully but he also deplored the total loss of these artefacts which was necessitated during the analytical procedures. Eccles and Rackham (1922) analysed two Nantgarw specimens and three Swansea specimens: Nantgarw items, numbered 21 and 22, were a soup plate with lobed rim, plain white with an impressed mark, NANT-GARW C. W., and a saucer painted with pink roses, unmarked (the bread and butter plate of the same service was marked impressed NANT- GARW C. W.). Swansea items numbered 23, 40 and 41 were a circular fruit comport with coloured cornflower sprigs and gilt edging, marked SWANSEA impressed, a saucer-shaped plate painted with tulips and pink and green leaves with gilt edging, marked SWANSEA in blue enamel, and a plate painted with scattered pink roses with a gilt edging, marked SWANSEA and a trident impressed (which immediately means that this was an example of the trident paste). Date ranges were given as 1811–1819, 1811–1819, 1814–1820, 1816–1817 and ca. 1817, respectively.

11.4.1 Summary of the Wet Chemical Analyses of Eccles and Rackham

Analytical data from the experiments of Eccles and Rackham are given in Table 11.1 and from these data we can make the following conclusions:

1. The specimens represent two different types of porcelain, both Nantgarw and the first of the Swansea specimens are the softer porcelains with significant bone ash content, whereas both remaining Swansea specimens are clearly representative of the harder more durable trident body containing a significant x component but no bone ash, which is attributable from the presence of calcium phosphate in the analytical determination. Both of these trident Swansea specimens also exhibit a small but significant magnesia content of between 2.5 and 4.3%, which can be related to the use of steatite in the mixture.
2. Although Eccles and Rackham comment on the very high silica content of the Swansea specimen No. 40, in fact both the trident specimens, 40 and 41, have a similar silica content of about $82 \pm 2\%$, which cannot be deemed to be sensibly different when one considers the possibility of mixture component variation in the manufacturing process. Potash and soda compositions are also consistently similar for all five specimens, but again Nos. 40 and 41 show significantly smaller amounts present of lime and phosphoric acid, which probably relates realistically to the absence of bone ash in the trident bodies. The alumina variation is perhaps more difficult to explain as specimen No. 23 has approximately 50% more alumina than Nos. 21 and 22, and Nos. 40 and 41 have about 50% less alumina than Nos. 21 and 22 and about 70% less than sample No. 23.

Any analytical interpretation of the Eccles & Rackham results suffers from several problems including that of an obviously strictly limited sample set, but notwithstanding this several authors have used the data more broadly to attempt to identify the different bodies of the Swansea and Nantgarw factories. This is especially relevant for Swansea, where unlike the more limited period of production at Nantgarw, it is clear that surviving records indicate that experimentation attempts to improve the paste body were ongoing even during manufacture of the more robust trident soapstone body in place of the more appealing duck-egg bone ash and flint glass frit body that is so characteristic of "Swansea" porcelains manufactured for albeit a short period of time around 1817. As highlighted above, a major problem for the analytical interpretation of the Eccles & Rackham data is the paucity of the sampling used in the study which raises doubts about its representative capability even over the recognised and limited brief production time frame. A second analytical problem arises from the bulk chemical digestion method utilised by Eccles & Rackham, the only method available for quantitative chemical analysis of this sort in the 1920s. In the wet chemical acid digestion process all the specimen subjected to analysis is taken into solution or left remaining as a precipitate. Hence, not only the porcelain

paste but the specimen glaze and decorative pigments are also incorporated into the analytical framework; all the Eccles & Rackham samples were finished and decorated pieces of dinner and tea wares from the Victoria & Albert Museum collection (for example, the numbered specimen 22 referred to above), so there will inevitably be present components of metal oxides from the glaze and mineral pigments. This could explain the small percentages of lead and heavy metal oxides found in the analyses. Modern analytical techniques are focused on ceramic microdomains, which yield much more information about changes in paste composition, impurities arising from the use of alternative source materials and kiln firing conditions and temperatures. This takes the analytical interpretation of chemical data to a new level of reliability and could truly reflect comparative changes of paste composition and firing processes incurred as a result of experimental variance during manufacture.

11.5 Later Analytical Studies

In the years following Eccles & Rackham's analyses, several authoritative works appeared on Nantgarw and Swansea porcelains, the first of these being that of Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942), which culminated in his seminal book published in 1942 after over 40 years research into the factories, and said to comprise the most authoritative text ever produced on a porcelain manufactory. The earliest reference work cited on these factories specifically is actually that of William Turner (*The Ceramics of Swansea and Nantgarw*) published in 1897 but this, although having the advantage of being historically closer temporally to the factories in production, suffered from the complete absence of chemical analytical data relating to the porcelains. Turner commenced his research on the factories in 1886, only some 60 years after their official closure, when he was able interview people who had worked there or who could relate to people who had done so. His book is therefore quite anecdotal but is a mine of information relating to the painters and to local collectors of the time, including the Vivians of Marino and Clyne Castle, a major collector who lost hundreds of pieces and many documentary examples of Swansea and Nantgarw porcelain service sets in a great fire in 1896—a report valued just one of the finest dessert sets then at £25,000. A comprehensive and tantalising account is given of the presence at Swansea of a French artist called "de Junic" whose work has yet to be positively identified, but who is possibly the man responsible for some fine and characteristic bearded tulip decoration. Turner believed that there were only three distinct Swansea and one Nantgarw porcelain bodies. Later works of John (W. D. John, *Nantgarw Porcelain*, 1948: *Swansea Porcelain*, 1958) and Jones & Joseph (*Swansea Porcelain*, 1988) built on the work of Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) and extended the knowledge of shapes, service pattern numbers, decorators and factory marks but the analytical information about the porcelain

bodies and their glazes still referred back to the sole wet chemical compositional analyses of Eccles and Rackham (*Analysed Specimens of English Porcelains in the V&A Museum Collection*, 1922).

In 1991, Tite and Bimson carried out the first modern microanalytical study of Nantgarw porcelain using scanning electron microscopy and energy dispersive X-ray diffraction techniques; however, thin sections cut from factory wasters were necessary to undertake these analyses. Three specimens of Nantgarw porcelains from the British Museum Research Laboratories were used, derived from unspecified excavations carried out at the factory site in 1932. The details are summarised in Table 11.2.

The Nantgarw average glaze analysis of the same three specimens gave 62% SiO_2, 12% PbO, 12% Al_2O_3, 1% Na_2O, 2% K_2O, 10% CaO, 1% P_2O_5, and less than 0. 5% FeO and MgO. In the specimen N18-7 special note was made of the presence of the mineral phases whitlockite and anorthite.

Generally, *glassy porcelains* are characterised by a lime-rich body (containing between 19 and 27% CaO), unreacted quartz (from the Lynn sand) and wollastonite in a glassy matrix with a lead oxide content of up to 20% reflecting the use of flint glass frit. The lead content can be very variable because of the range of frit compositions used in the paste, typically 10–35%. On the other hand, a *bone ash porcelain*, typical of Nantgarw, will contain unreacted quartz and tricalcium phosphate (whitlockite) in a glassy matrix containing anorthite ($CaAl_2Si_2O_8$), which is not found in glassy porcelains. Typically, a bone ash porcelain will comprise 4 parts bone ash, 4 parts Lynn sand, 0.25 part Dorset blue ball clay and 0.25-part gypsum or alabaster. The bone ash therefore represents about 40–45% of the paste mixture. In Nantgarw porcelain it is thought that china clay and china stone were used in place of ball clay from oblique references made in Dillwyn's notebook (Eccles and Rackham, *Analysed Specimens of English Porcelain in the V&A Museum Collection*, 1922): hence a typical Nantgarw paste mixture would comprise 9 parts china stone (feldspar), 12 parts china clay (kaolinite), 12 parts bone ash and 3 parts lime (Hillis, *Welsh Ceramics in Context, Part II*, 2005). There seems to be some conflict here with the claims of contemporary recipes that no additional lime was added, otherwise the $CaO:P_2O_5$ ratio for the paste would be raised from the value expected for hydroxyapatite, which in the firing process converts to calcium orthophosphate, but the situation is complicated further since experiments have shown that at temperatures between 1000 and 1200 °C there is a calcium depletion from the hydroxyapatite and phosphate components and their incorporation into the Ca-rich glassy matrix. Tite and Bimson (1991) have shown that Nantgarw porcelain does in fact contain unreacted quartz, whitlockite and anorthite in the glassy matrix, which confirm its *bone ash* classification.

In an elegant, detailed analysis of Swansea and Nantgarw porcelains carried out in 1998, Owen et al. (1998) also used SEM/EDAXS and XRD microchemical techniques to determine the elemental compositions from 10 Nantgarw and 9 Swansea porcelain sherds recovered from excavations of their respective factory sites and putative waste dumps. It is interesting that in their comprehensive paper they do not refer at all to Tite & Bimson's 1991 data, which perhaps is rather

surprising in view of the similar techniques being employed, even allowing for the larger specimen range being reported in their studies. All the Nantgarw specimens were of unglazed, undecorated fragments of utilitarian tea wares scattered around the pottery site, only one of which was marked NANT-GARW C. W., as the location of the actual waste dump site for the china manufactory is still unknown despite much exploratory work being carried out at the site. In contrast, 8 of the Swansea specimens were recovered in the 1960s from various sites near the pottery, but again the location of the main waste dump has not been found; however, although all specimens were unglazed, four had been decorated in sepia or polychrome designs. The ninth sample comprised a sherd of the named *Biddulph* service in Swansea duck-egg porcelain, several items of which are now in the Royal Institution of South Wales at Swansea. None of the Swansea sherds were marked. These latest analytical data will be compared with the results of Eccles and Rackham summarised above in Table 11.1, but an important point needs to be made here which has been raised by Owen et al. (1998) in their paper and refers to the fact that although the sherds were recovered from sites near the factories this does not in itself guarantee unambiguously that the sherds were all Swansea or Nantgarw in origin. It is well known that porcelain manufactories did acquire specimens of china ware from other factories to complete service orders and William Billingsley himself was known to have adopted this practice elsewhere, for example at Torksey and Mansfield, where Derby porcelain was purchased and decorated to make up the commissioned services. This will become relevant when one learns of the proposal for the existence of some new Swansea porcelain body being made in the conclusions to the analyses of Owen et al. (1998): namely, could the relevant waster sherd in fact be associated material and not originally from the Swansea factory; it is also possible that the sherd resulted from an unsuccessful attempt at firing a variant to the normal experimental porcelain body? The marked pieces analysed by Eccles & Rackham on the other hand were all either damaged or undamaged specimens from museum collections and if not marked themselves could be readily related to marked items from the same porcelain services.

The analytical data derived from the work of Owen et al. (1998) are shown in Table 11.3; the porcelain bodies of the ten Nantgarw specimens analysed are grouped into three types comprising samples N1, N3, N3–N10 labelled phosphatic, an intermediate sample N2 and a silicaceous sample N4 whilst the nine Swansea specimens are also grouped into three types labelled a white glassy S1, silicaceous samples S2–S8 and a phosphatic sample S9 (from the named Biddulph service). Each sample datum value represents an average of 100 spot analyses carried out on each specimen, which surely therefore has a much greater analytical significance than the single analyses of Eccles and Rackham reported some 76 years earlier.

However, it must be appreciated that both sets of analytical experiments involve destructive testing of the specimens and there is also a subtle distinction in the type of specimen used for the two sets of analyses: Eccles and Rackham (1922) used finished decorated porcelain teawares, which had been glazed and

Table 11.3 Analytical Data for Nantgarw and Swansea Porcelains (after Owen et al., 1998); the figures refer to % averaged over some 100 point measurements for each specimen

	Nantgarw (N8)	Nantgarw (N2)	Nantgarw (N4)	Swansea (S1)	Swansea (S7)	Swansea (S9)
Silica	43.5	70.8	80.3	68.0	71.6	45.2
Titania	–	–	–	–	0.4	–
Alumina	12.7	8.9	9.1	8.2	23.9	20.0
Iron oxide	0.2	0.2	0.1	0.1	0.7	0.3
Magnesia	0.4	0.2	1.9	0.2	0.2	0.4
Lime	23.3	9.9	0.6	9.7	0.3	16.7
Soda	0.4	0.2	1.8	10.9	0.6	1.4
Potash	2.3	2.3	5.6	2.5	1.6	2.8
Phosphate	17.6	7.5	0.5	–	0.2	13.0
Sulphite	–	–	–	0.2	0.3	0.1

decorated—therefore there must have been some contamination from the glaze and mineral pigments as indicated earlier. In fact, Eccles and Rackham recognise this must have occurred in several cases because of the presence of lead oxide in their analyses, arising from the chemical dissolution of the glaze in the wet acid digestion process. In contrast, Owen et al. (1998) analysed unglazed and undecorated sherds from the vicinity of the factories, although it must be stated that Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) has indicated that the actual waste dumps for the Swansea and Nantgarw factories have never been excavated, despite there being some evidence in ancient plans as to the location of these. This means that Owen et al. were able to interrogate the porcelain bodies in their samples from unglazed and undecorated sherds generally without interference from contamination of glazes and pigments. However, in one example, namely S9—an unspecified example of Swansea duck-egg porcelain from the Biddulph service in Swansea Museum (The Royal Institution of South Wales)—the analytical figures are significantly inconsistent with the others from the factory and have been termed Nantgarw-like in composition, perhaps reflecting the authors belief that the appearance of Billingsley at Swansea with his ideas of perfecting the porcelain paste involved a transfer of ideas about paste composition from the Nantgarw factory. The Biddulph service of 100 pieces, was commissioned by Lord Biddulph of Ledbury Park, each piece being London-decorated in the London workshops of John Bradley situated in Pall Mall, the painting being attributed to Philip Ballard; recent sales of items from this service have realised large sums at auction from the early 1990s but a cautionary note has emerged from Bonham's auction house in 2009 that several pieces are probably not of actually Swansea origin at all but rather can be assigned to a Paris hard-paste porcelain, which may have been bought in for decoration either in the London atelier or in the Swansea factory as supplementary to the factory production to meet the production deadline. In fact, the two ice-pails from the Biddulph service are now believed definitely to originate from a Paris manufactory.

Therefore, a so-called "factory waster" of this service found at the site need not be forensic evidence at all for it being of a Swansea manufacture but raises the distinct possibility that it is an associated piece that was perhaps broken in transit or during decoration and subsequent firing.

In some cases, it is possible to find items of Swansea and Nantgarw porcelain which are marked as such but which are clearly now believed to be fakes, of questionable origin or associated material—each bearing a red script mark for "Swansea" or "Nantgarw". Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) has commented upon the unusual painted script "Nantgarw" mark applied by the decorator on the spill vase in his own collection, but a second example cited here affords a more difficult case for interpretation. This plate (see Fig. 11.1) is of a most beautiful translucent and fine duck-egg porcelain, and bears a documented "Swansea "red script mark in capital letters (Fig. 11.2) which exactly matches number 13 of those studied by Jones and Joseph (*Swansea Porcelain*, 1988, p. 234) and additionally is discussed further on page 38 of the same text, where it is highlighted as a mark that was only used by Morros on porcelain he decorated at Swansea from other factories! The flower painting is also attributed to Henry Morris, an esteemed Swansea artist: all seems to be correct for a genuine Swansea attribution apart from this comment from Jones and Joseph (*Swansea Porcelain*, 1988) and the fact that this Swansea shape has not been recorded hitherto. However, it is known that Morris did obtain quantities of fine Coalport porcelain from John Rose, the proprietor of the Coalport factory following the closure of the Swansea factory in 1826 and decorated these locally in Swansea. It is also recorded that Rose came into possession of the Swansea and

Fig. 11.1 Large oval plate marked SWANSEA, in red enamel capitals, decorated by Henry Morris at Swansea around 1823–1826, possibly Coalport porcelain. The porcelain has a beautiful duck-egg translucency and this could reflect the suggestion that John Rose experimented with the Swansea porcelain china recipes following the immediate closure of the factory in 1821. However, the unusual embossed moulding at the rim is reproduced in Jones and Joseph *Swansea Porcelain* as occurring rarely on Swansea porcelain. *Private Collection*

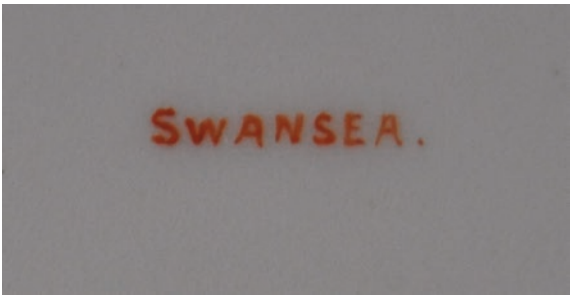

Fig. 11.2 The stencilled SWANSEA mark on the plate shown in Fig. 10.4 which matches exactly samples of Henry Morris' work as assigned by Jones & Joseph, *Swansea Porcelain*, 1988. *Private Collection*

Nantgarw factory porcelain recipes and moulds after the winding-up auctions and theoretically could have produced items very close indeed in composition to those of the genuine factories … the plate shown in Fig. 11.1 could in all probability be therefore classified correctly as one such item: the value of non-destructive chemical analysis applied to such an item would therefore be quite significant in reaching an attribution in such cases. Our assessment seems straightforward but another rather contradictory statement is also provided by Jones a Joseph on page 15 on their same text when considering Swansea marks generally—they state:

> There is also a rare script mark found on Swansea porcelain which has been decorated in London for the china dealers Pellatt & Green (St. Paul's Churchyard) – this mark can readily be identified because of the fact that it is applied with distinctive handwriting (in Roman capitals script) and invariably after the word Swansea is a full stop!

Two marks of this type are given in Jones & Joseph (*Swansea Porcelain*, 1988, p. 235), which do not match exactly that shown in Fig. 11.2 as they are both in cursive script—but the presence of this full stop must surely render some doubt about the strength of the initial assessment made above: this plate could either be a Swansea Henry Morris-decorated plate of possibly Coalport origin or perhaps a novel Swansea piece decorated in the enamelling shops of Pellatt & Green in London?

11.6 General Analytical Conclusions

Owen and Day (1994) make a relevant statement prefacing their analytical paper on Bow porcelains:

> The correlation and attribution of archaeological ceramics rely on comparison with the aesthetic and compositional characteristics of specimens of known provenance, including material excavated from factory sites.

This statement whilst undoubtedly true should be placed in the context of this study on Nantgarw and Swansea porcelains: the wasters on which the analyses have been based were acquired from broken sherds found near the factory sites,

but the actual major waste dump sites are currently unknown and have never been located despite much diligent archaeological searching. Secondly, it seems that the Swansea specimen labelled S9 was in fact a complete and damaged specimen of the Biddulph service, not a waster as implied earlier and already some doubt has been cast on the authenticity of several items from this service. As far as the recent analyses of Nantgarw and Swansea porcelains goes, therefore, specimen S9 ought to be regarded as a potential data outlier. It was quite common practice in the early 19th century for porcelain manufactories to accept a large order and then to help complete it with wares from other factories in the white for decoration: a well-known example of this practice for Swansea is the famous and opulent Lysaght service, decorated by Henry Morris at Swansea, but several examples from this service have already been identified as Coalport porcelain. Two examples of this Swansea porcelain service were presented to HM The Queen on the occasion of her Coronation in June 1953 by Swansea Town Council. Similarly, the provision of replacements for broken pieces of French porcelain services such as Sevres was extremely difficult during the Napoleonic War and the blockading of French ports by the Royal Navy—and in such cases pieces from Nantgarw and other factories could have been specially commissioned to order. These items are naturally one-off and very rare, often not conforming to standard factory types and shapes but still representative of their factory pastes and bodies. The author has personally seen a Nantgarw coffee can decorated to be compatible with an otherwise Sevres porcelain service which clearly has been ordered as a replacement of this type. This reinforces the concept of the need for a comprehensive porcelain paste compositional analysis to determine the factory of origin: what is clear is that the use of factory wasters from a possible waste dump for such a purpose cannot be deemed to be fundamentally appropriate for an unambiguous attribution per se. In addition, the data must be acquired non-destructively, so the dissolution of fragments for wet chemical analysis or sectioning and polishing for microanalytical work is not then possible. Even more significant is the necessity of obtaining the body compositional data from finished examples through the overlying glaze, without effecting its removal. This procedure lends itself perfectly to confocal Raman spectroscopy, a laser light scattering technique, whereby the molecular specific structural interrogation of a specimen can be achieved from subsurface layers without removal of the superficial coatings, which is rendered easier when their transparency is accessible to a laser beam.

Finally, a further paper by Owen and Morrison (1999) has addressed the distorted appearance, termed “sagged”, of the factory wasters excavated at the alleged Nantgarw site: it was suggested that these could have arisen from an over-firing at too elevated a kiln temperature or possibly too fertile a paste mixture. It was eventually concluded that the extremely high wastage of Nantgarw porcelains could be attributed to both of these contributions: data from their experiments strongly indicate that that the presence of certain chemical species in the melt phase is suggestive that Nantgarw porcelain was fired at a kiln temperature in excess of 1430 °C. Ineffective control of the kiln heating conditions was known to be disastrous for the integrity of the porcelain artefacts being fired and this was thought to have

been a major driving force for empirical porcelain paste compositional changes at this time. In their paper Owen and Morrison (1999) report the further analysis of four specimens of sagged Nantgarw sherds (N11, N12, N13 and N14), two unglazed, unsagged wasters (N23 and N24) and one glazed and decorated plate (N37) that had been successfully fired. They conclude that the chemical composition of all of these specimens was essentially the same as that reported for their earlier investigations, which indicates that no major variation in the paste composition had been made which may have been attributed to the kiln wastage, particularly of the sagged fragments. It seems therefore, from these elegant studies, that the source of the notoriously high Nantgarw kiln wastage which eventually contributed so dramatically to the failure of the manufactory in the early 1820s can be attributed to an ineffective control of the kiln firing temperatures which resulted in melt phase issues induced by excessively high temperatures rather than experimental trial variations of paste composition.

11.7 Molecular Composition of Porcelain Bodies from Modern Microanalytical Studies

Compositional data from early wet chemical analyses are generally reported in terms of oxide materials such as silica, alumina, magnesia, phosphate and lime—chemically, these are represented by the formulations SiO_2, Al_2O_3, MgO, PO_4^{3-} and CaO—which are all derived from the dissolution, separation and precipitation reactions used in their extraction. Useful though these quantitative data are for the differentiation between the pastes, mixtures and additives used by different manufactories the real molecular composition of the original, intact porcelain bodies is rather different; how does one access this information, which should give a better discrimination facility for types of porcelain bodies, their kiln firing temperatures and post-firing treatment. Later, modern analytical data are of the elemental compositional variety, which is especially useful for a consideration of microdomains in the solid state and from which an idea of the chemical composition of the fired bodies can be gained. By this means, materials such as enstatite, cristobalite, calcite, feldspar, tricalcium phosphate, anorthite, whitlockite, mullite, plagioclase, leucite, gypsum, corundum, steatite, bytownite, sanidine and alpha-quartz have all been identified in Nantgarw and Swansea porcelains (Owen et al., 1998). Clearly, the discovery of such a wide range of composition materials from scanning electron microscopy enables much information to be gleaned about the kiln procedures adopted by Billingsley and Walker and then by Dillwyn in their quest to achieve high quality porcelains at Swansea and Nantgarw rivalling Sevres in the first quarter of the 19th century.

Vibrational spectroscopy, and in particular Raman spectroscopy, can complement the analytical interpretations afforded by scanning electron microscopy and diffraction techniques by accessing the molecular composition of porcelain bodies and is additionally able to do so nondestructively by confocal imaging through the

Fig. 11.3 An 18th Century mahogany tripod table inlaid with Rockingham porcelain panels bound in brass and highly decorated with fine floral painting, ca. 1830–1840, from the sale of effects at the Earl of Wentworth's estate; the Earl was an enthusiastic patron of the Rockingham china works and commissioned several unique items in porcelain from the factory, including this table, garden furniture and the famous Elephant vases. The table porcelain was analysed using non-destructive Raman spectroscopy, which provided a match for the porcelain body with a Royal Rockingham period marked plate from ca. 1835 and with similar enamelled pigments, therefore placing it firmly as a unique Rockingham porcelain item. Reproduced courtesy of Bryan Bowden, Esq

transparent glaze where access to unglazed regions is not possible. Hence, for the first time, the analyst can study complete, decorated porcelain objects and determine the chemical composition at the micron level; because the technique gives information on molecular bonds, then a more detailed description of the types of silicate can be forthcoming and even a definition of the coloured pigments used in the decoration, which may themselves be factory relevant and specific. An example of such an exercise has been the assignment of a fine inlaid porcelain mahogany tea table (Fig. 11.3) to the Royal Rockingham factory around 1835–1840 by Raman spectroscopic correlation of the pigments and porcelain body found on the table with that for a red-griffin marked Rockingham dinner plate (Edwards et al., 2004). It is of interest to compare the Raman spectroscopic results for the porcelain bodies and pigments used in the Rockingham factory with those of a similar study undertaken by Colomban et al. on porcelains from the Sevres factory in the 18th and 19th centuries (Colomban et al., 2001).

Table 11.4 gives a summary of the minerals that have been identified using elemental SEM/EDAXS analysis of soft paste porcelains from several other 18th and

Table 11.4 Compilation of Materials found in 18th and 19th century porcelains (H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015a)

Name	Brief description	Chemical formula
*Alpha-quartz	Silica	SiO_2
*Apatite	Tricalcium phosphate	$Ca_3(PO_4)_2$
Hydroxyapatite	Calcium hydroxy phosphate	$Ca_5(OH)(PO4)_3$
*Cristobalite	High T quartz polymorph	SiO_2
*Tridymite	High T quartz polymorph	SiO_2
Enstatite	Magnesium silicate	$MgSiO_3$
*Whitlockite	Anhydrous hydroxyapatite	$Ca_3(PO_4)_2$
*Calcite	Calcium carbonate	$CaCO_3$
*Mullite	Aluminium silicate	Al_2SiO_5
Feldspar	Potassium aluminium silicate	$KAlSi_3O_8$
Sanidine	High T alkaline feldspar	$KNaAlSi_3O_8$
Corundum	Alumina	Al_2O_3
Pyroxene	Calcium magnesium inosilicate	$CaMg(Si, Al)_2O_6$
Talc	Hydrated magnesium silicate	$Mg_3Si_4O_{10}(OH)_2$
Muscovite	Mica phyllosilicate	$KAl_2(Si_3Al)O_{10}(OH, F)_2$
Microcline	Low T alkaline feldspar	$KAlSi_3O_8$
*Magnesia	Magnesium oxide	MgO
Forsterite	Magnesium olivine	Mg_2SiO_4
Kaolinite	Aluminium silicate	$Al_2Si_2O_5(OH)_4$
*Lime	Calcium oxide	CaO
Rutile	Titanium oxide	TiO_2
Anatase	Titanium oxide	TiO_2
Haematite	Iron oxide	Fe_2O_3
Soda	Sodium oxide	Na_2O
Wollastonite	Calcium silicate	$CaSiO_3$
Gypsum	Calcium sulfate dihydrate	$CaSO_4.\ 2H_2O$
Anhydrite	Calcium sulfate	$CaSO_4$
*Anorthite	Calcium aluminium silicate	$Ca_2Al_2Si_2O_8$
*Bytownite	Plagioclase feldspar	$(Ca, Na)[Al(Al, Si)Si_2O_8]$
Albite	Sodium aluminium silicate	$NaAlSi_3O_8$
*Leucite	Potassium aluminium silicate	$KAlSi_2O_6$
*Steatite	Magnesium silicate	$Mg_3Si_4O_{11}$

*Indicates present in Nantgarw and/or Swansea porcelain bodies

19th century factories such as Bow, Derby and Worcester along with Nantgarw and Swansea, including their chemical formulae and descriptions compiled from the available analytical literature (Tite & Bimson, 1991; Morgulis & Janacek, 1931; Owen et al., 1998; Owen & Day, 1994; Owen & Morrison, 1994; Edwards et al., 2004); minerals found to occur in Nantgarw and Swansea wares have been identified further with an * in this table. Several important points can be made from

this Table: firstly, specific materials and mineral phases (such as high temperature polymorphs of alpha-quartz and silicates from the pyroxene and feldspar series) are evident which have been formed under different kiln firing conditions which are much more discriminative than the simple Ca:P or similar elemental ratios and silica compositions that have been derived from earlier wet chemical extraction processes. Secondly, the presence of mineral phases which are different but which yield similar or identical elemental ratios, such as alpha-quartz and cristobalite or apatite and whitlockite, are not recognised in the earlier wet chemical extractions but are clearly differentiated in the later microchemical studies. This is particularly important for the potential discrimination between porcelain factories, especially when experimental paste mixture compositions were being trialled along with kiln temperatures; in this respect, the identification of relatively small amounts of lead containing components ascribed to the use of flint glass frit additive in the Nantgarw and Swansea porcelains is especially crucial as Eccles & Rackham (*Analysed Specimens of English Porcelain in the V&A Museum Collection*, 1922) and Church (*English Porcelain from Museum Collections*, 1904) had concluded that the presence of lead in their analyses was attributed to the interference and contamination of the glaze on their specimens; of course, this could not be the explanation for the SEM results of Owen et al. (1994, 1999), who used exclusively factory glazed wasters, except for the one specimen analysed of finished, decorated porcelain from the Biddulph service. Hence, the presence of lead in the mineral phases noted by Owen et al. is entirely reconcilable with the use of varying amounts of lead glass frit adopted by Billingsley and Walker in their experiments and the Eccles and Rackham interpretation of its presence as interference from the glaze contamination must therefore be treated with circumspection.

The identification of titanium in small amounts by SEM analysis itself generates an intriguing explanation: although attributed to contamination in the raw products of processing, titanium dioxide in the anatase form is in fact a minor component in kaolin, and this has been used hitherto as a monitor of kiln firing temperatures, since the conversion of the anatase polymorph to the high temperature stable rutile form occurs around 850 °C. This has been suggested as a useful spectroscopic marker for the so-called large dragon kiln temperatures in Chinese porcelain manufacture of the Ming dynasty at Hangzhou, although recent work on the thermal interconversion of anatase and rutile by de Faria et al. (de Faria & Edwards, 2017) will undoubtedly necessitate some reappraisal of several conclusions made in the literature regarding firing temperatures on the basis of the presence or otherwise of anatase.

11.8 Final Analytical Conclusions

From this detailed survey it is clear that several conclusions can be formulated about the analyses that have thus far been carried out on Swansea and Nantgarw porcelains:

- The analytical data of Eccles and Rackham (*Analysed Specimens of English Porcelain from the V&A Museum Collection*, 1922) reported in 1922 on two Nantgarw and three Swansea items were all obtained from finished, glazed articles that had survived the kiln firing; in contrast, the later studies of Tite & Bimson (1991) were carried out on factory wasters only and those of Owen et al. (1998, 1999) used mostly factory wasters and just one example of finished, decorated Swansea and one similarly of Nantgarw in their two reported papers on the Welsh porcelain factories. This means that the number of finished factory items on which the analytical conclusions have been based are minimally small; outside of the factory wasters, therefore, it must be realised that this very small range of finished specimens is not sufficient to enable satisfactory conclusions to be made about compositional changes to paste formulations and certainly raises further questions if the analytical data were to be used for the factory attribution of unknown specimens.
- The major advantage in using factory wasters is in the taking of specimens and subsampling for preparatory treatment prior to analyses being undertaken; this destructive nature of specimen sampling is often unavoidable and has resulted in the adoption of a new regime of non-destructive sampling wherever possible to facilitate the wider interrogation of important specimens in collections for which destructive sampling is naturally forbidden. Such a philosophy is now apparently necessary for the future analyses of Swansea and Nantgarw porcelains, for which the finished examples are both rare and highly prized.
- Raman spectroscopy has been demonstrated to provide an analytical technique capability for the first-pass non-destructive acquisition of molecular compositional data without any prior sample chemical or mechanical treatment being necessary. Additional to this requirement, the ability to interrogate specimens at the micron footprint level, the derivation of analytical data from subsurface regions of interest such as porcelain bodies overlaid with glaze, ancillary information being acquired from applied pigments, and the provision of data remotely from fibre-optic coupled spectrometers which can be used to access the inner surfaces of objects such as vases, tureens and decorative wares is extremely useful. A further development reported recently has been the creation of handheld and portable Raman spectrometers, which have facilitated the recording of analytical spectroscopic data from specimens which cannot be removed for security or other reasons relating to their fragility and transportation from their display or storage facilities, such as museums.

Hence, the preliminary study of Nantgarw and Swansea porcelains using analytical Raman spectroscopy has been advocated for the first time: in this experiment, perfect, decorated and authentic marked and glazed specimens could be studied and the results compared with those already in the literature and reported above. Using both laboratory based and portable Raman spectrometers being developed for geological field use and for space missions, it is now possible to assess the novel contribution that further, more comprehensive studies could provide in the future.

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Chapter 12
Named Artists

Abstract Here, the major artists involved in both Swansea and Nantgarw porcelain decoration are discussed: the evidence presented to earlier authors by personnel who actually worked at or who remembered relatives accounts of who had worked at the factories is considered. A rather tenuous link is explored between three people who could have had some overlap at Nantgarw and some interesting conclusions drawn about whether or not the Billingsley daughters could have painted at Nantgarw.

Keywords William Price · William Billingsley · William Turner · Swansea artists · Nantgarw artists · Sarah Billingsley · Lavinia Billingsley

Throughout the late 18th and early 19th centuries ceramic artists were itinerant, frequently moving between factories, in search of better working conditions or an improvement in porcelain bodies on which their skills were demonstrated. Examples cited above include William Billingsley, who started his apprenticeship at Derby, holding a succession of roles at Pinxton, Torksey and Mansfield, joining Barr, Flight & Barr at Worcester and then setting up at Nantgarw and Swansea, and finally at Coalport. Other artists at Swansea and Nantgarw either stayed on in Swansea or moved elsewhere after closure of the factories in 1823 and records show that several of them decorated the remaining porcelain fired in the white for local consumption. Some of these items were not sold at auction because of blemishes, but the standard of art work on them was still very fine: Henry Morris remained in Swansea and decorated porcelain bought in from other factories such as Coalport and Ridgway porcelains. An example of his work on possibly Coalport porcelain is shown in Fig. 10.4, marked SWANSEA in red capital script (shown in Fig. 11.1) on beautifully translucent duck-egg porcelain paste with embossed flowers at the rim: although not normally seen on Swansea services, such embossed flowers are recorded in Jones and Joseph (A. Jones and L. Joseph, *Swansea Porcelain*, 1988) and the samples illustrated there match exactly those found on the Morris decorated plate, which therefore raises the possibility that

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this plate could have been a rather experimental shape for the factory towards the end of its production line. Some of Morris' fine painting is illustrated on Copeland china executed after closure of the Swansea factory (A. Renton, *Welsh Ceramics in Context, Part II,* pp. 217–28, 2005) which have very similar floral compositions to his best Swansea work. It is also interesting that this Swansea script mark in upper-case letters is followed by a full stop in red enamel: whilst rare on Swansea porcelain this unusual feature is not unknown and has been attributed also to Henry Morris in support of the above assignment.

Thomas Baxter worked at Daniell's in Staffordshire and in Bristol. Most texts on Swansea and Nantgarw porcelains thus include discussion of work by Swansea artists on other porcelains—for which their correct attribution from set patterns and definitive named services is critical for identification of the artist.

The idea that William Billingsley's daughter, Lavinia, was employed at Nantgarw as a porcelain decorator has been proposed in several sources but it appears that she does not feature in any extant correspondence to this effect. The primary source of her involvement as an artist at Nantgarw arises from an interview carried out by William Turner towards the end of the 19th Century with Dr. William Price of Llantrisant, who claimed personal knowledge of this fact and this is cited in W. D. John (W. D. John, *Nantgarw Porcelain*, 1948, pp. 116–117). Nine artists at Nantgarw are cited by Turner and Drane in Turner's book published in 1897 (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897, p. 298) and Lavinia Billingsley features at number seven on the list. It is of relevance to examine the chronology of events at the start-up of Nantgarw in this context.

12.1 The Three Williams—Turner, Price and Billingsley

Dr. William Price was born in 1800 in Rudry, Caerphilly, and trained as a physician locally under a Dr. Edwards from 1814 during which he would be attending to patients in the locality. At this time William Billingsley and his family were based at Nantgarw and it is perfectly possible that William Price did meet Lavinia there and they would have been of a similar age. However, Lavinia Billingsley died when she was only 21 years old in September, 1817; it is clear that much of Nantgarw's output from the early 1813–1814 period was destined for the London ateliers such as Mortlock's, and Nantgarw had not yet started up in phase two of its production so it has been suggested that she would have had little opportunity to undertake any porcelain decoration locally at Nantgarw during this first period of operation. However, it is known that several commissions were decorated locally by Billingsley himself during this period and examples include the services presented to Edward Edmunds, the landlord of Billingsley's residence at the Nantgarw Pottery House. So, it is reasonable to believe that an aspiring artist such as Lavinia Billingsley, and there are several well-executed sketches in her hand to demonstrate her ability in this respect, would have perhaps decorated some porcelain items for local consumption, especially if these were adjudged to be

not quite of the exacting standards demanded by the London ateliers. W. D. John has expressed grave reservation in his work on the veracity of Dr. William Price's information provided to William Turner—referring to the time elapse of some 75+ years and the fact that Dr. Price was himself a larger-than-life and eccentric character in South Wales in the 19th Century, as described by A. G. Bradley in his contemporary book (A. Bradley, *In the March and Borderland of Wales*, 1905).

The connection of Dr. Price with Nantgarw was maintained through into the last decades of the 1800s since he had established an outpost working surgery actually in the basement of the Nantgarw Pottery House, then occupied by descendants of Thomas Pardoe in the family home! It is here that William Turner met Dr. William Price and first set the scene for the involvement of Lavinia Billingsley as a Nantgarw artist—a convoluted tale of the "Three Williams", where both William Billingsley and William Price can truly be considered as extremely enigmatic giants of their chosen professions! William Price, the self-styled Archdruid of Wales, is best remembered historically for his eccentric yet fervent beliefs for which he took a stand against powerful aristocratic opposition: he was an ardent supporter of the Chartists and he wore very curious clothes depicting his belief in Druidism, in particular his adoption of a characteristic fox-skin hat and travelled to his surgeries in a chariot drawn by four goats. He and his wife Gwenllian had a young son born in 1883, called Iesu Grist (Welsh for Jesus Christ) who died at the age of five months in January, 1884: Price believed that burial contaminated the earth so he pioneered cremation with his baby son in Caerlan Fields outside Llantrisant. Enraged villagers prevented the complete cremation of the child's body and Price was prosecuted—in a brilliant discourse with Mr. Justice Stephen at Cardiff Assizes he obtained a verdict that cremation was not in fact illegal in the United Kingdom. After this verdict, Price recovered immediately the now buried remains of his child and proceeded to complete his cremation: later in 1884 ten cremations took place in England and by 1902 the Cremation Act was passed to establish the legality of the process—so Price has been claimed to be the founder of cremation in the UK. William Price died in 1893 and he was himself cremated at the selfsame spot on a hill in Caerlan Fields in an immense conflagration involving two tons of coal and gallons of oil which could be seen across South Wales and even across the Bristol Channel in Somerset, Devon and Cornwall, an event attended by 20,000 people locally.

It is quite remarkable that perhaps William Billingsley and William Price, both brilliant exponents of their own professions, who each strived to attain perfection and recognition in their own beliefs, should have been in the same place at the same time and could well have known each other, but there is actually no documentary record of their ever meeting? It is frustratingly unclear as to whether or not Lavinia Billingsley did paint some of her father's porcelain at Nantgarw—it is tempting to believe that she must have done so, the artistic association between father and daughter was so strong—we have just the statement of Dr. William Price that she did paint Nantgarw porcelain, as recorded by William Turner, but we would perhaps be equally remiss to dismiss this idea as Dr. John and others have just because Dr. Price was "eccentric" (W. D. John, *Nantgarw* Porcelaina,

1948) to the point of ridicule: in other documentation he was reported to be well respected locally and nationally as a highly accomplished doctor, a benefactor to local people and an honest man, and a statue was erected in the village square at Llantrisant in his memory, still to be seen to this day. He was also remembered by colleagues as a medic who was much in advance of his time and he was among the first to recognise the medical dangers of smoking tobacco and the consumption of excess alcohol. *Quis custodies custodiat*?

An alternative proposal mooted by W. D. John (*Nantgarw Porcelain*, 1948, p. 117) is that Lavinia's sister, Sarah, would have been more likely to have painted porcelain at Nantgarw because she was about 4 years older. Tragically, both sisters died in the year 1817, Sarah in January and Lavinia in September, just when William Billingsley and Samuel Walker were setting Nantgarw into the second phase of its operation—so the chronology would dictate that Sarah would not have had the opportunity to decorate any Nantgarw porcelain from the kilns starting up later in 1817 and Lavinia barely so. As mentioned earlier, however, it appears that both daughters were involved with the decoration of porcelain bought in and fired at their own home premises during the peripatetic travels of their father, William Billingsley: it is perhaps equally significant that the Billingsley household did not have the presence of their mother, Sarah, who remained at Derby all the time and that a housekeeper was engaged to look after the family during these travels. It would seem then that both daughters retained their practical interest in decorating porcelain for their father and must therefore have been employed in the business—but in what roles, as painters or as gilders, or perhaps both?

It is interesting to note at this point that a fourth William, William Edwards, also lived in the near vicinity of what was to become the site of the Nantgarw china factory: William Edwards, termed "*A Builder for Both Worlds*" through his twin occupations as a Methodist minister at Groeswen Chapel and a renowned bridge builder, was born in 1719 in Bryn Tail Farm and died there in 1789 in the same year as his wife Elizabeth (H. P. Richards, *William Edwards: Architect, Builder, Minister, A Builder for Both Worlds*, 1983). He is buried in Eglwyssilan Church, where Lavinia Billingsley is also buried. Although chronologically speaking he could clearly not have been a contemporary of either William Price or William Billingsley in the Nantgarw area in the decade 1810–1820, William Edwards is, however, remembered on Nantgarw porcelain through the fine paintings of his bridge at Pontypridd, one of which is shown in on a beautifully moulded Nantgarw dish possessing the *TW* monogram now in the National Museum of Wales collection. At the time of its construction in 1756 the Edwards bridge at Pontypridd was the largest single span stone bridge in the United Kingdom, with a span of 43 m, a position it held for the ensuing 80 years; much visited by 18th Century engineers and savants, a print of the Edwards bridge drawn for the *Beauties of England and Wales* (Fig. 12.1) captures the magnificence of this bridge with its characteristic weight-relieving roundels in its haunches, painted in the same year that the Nantgarw china works closed and William Billingsley finally departed for Coalport! William Edwards demonstrated a special determination in the construction of his bridge across the River Taff in Pontypridd as the bridge shown

in the watercolour and also on Nantgarw porcelain was his third effort at spanning the river: the first two collapsed under adverse weather and flood conditions but the third and last effort remains standing today although closed to all but pedestrian traffic as a graceful arch alongside a rather ugly but more practical for 21st Century traffic tubular steel and concrete version. It is said that the tale of the Edwards bridge gave rise to the local South Walian statement of "*Mae tri cynnig yr Cymro —Three times for a Welshman*!" In her work of "fiction founded upon fact", Mrs. G. Linnaeus Banks authored her story (G. Linnaeus Banks, *The Bridge of Beauty: The Making of William Edwards,* 1894) of the tragedy that befell the Edwards family in rather floral prose, an extract from which is seen below:

> It was a sad day for Mrs William Edwards of Eglwyssilan, when her well-beloved husband on his return from Llantrissant (sic.) market one sultry Friday in the autumn of 1721 in attempting to cross the River Taff failed to observe its rising waters, missed the ford and was carried downstream, a drowning man.

It was believed locally that this tragic event made William Edwards determined to create a safe passage across the treacherous River Taff at Pontypridd, the beautiful engineering aspect of which was admired widely and even more fittingly so on the finest porcelain to emerge from the same locality. The Edwards bridge was so famous in its day that it was reproduced to special order on the Tsarina Catherine of Russia's china service commissioned from the Wedgwood factory, which now resides in the Hermitage, St Petersburg, Russia.

Fig. 12.1 Print of the Old Bridge, Pontypridd, across the River Taff, constructed by William Edwards in 1756, and a famous landmark near Nantgarw. Engraved by J. P. Neale, from *The Beauties of England and Wales*, published in 1813 around the time of the first phase Nantgarw production, 1812–1814. *Private Collection*

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Chapter 13
Classification of Factory Output

Abstract A brief outline of the classification of factory output from Swansea and Nantgarw, describing the types of porcelain made and/or decorated on site, i.e. locally decorated, and in the London ateliers.

Keywords Swansea · Nantgarw · Unsold stock · In-the-white · Bought-in wares · Coalport

It is fitting at this point to classify the output from the Swansea and Nantgarw factories in a novel way as being of four categories:

1. Swansea and Nantgarw porcelain of the finest quality that was decorated locally by local artists.
2. Swansea and Nantgarw porcelain of the finest quality that was sent in the white to the London enamelling workshops for decoration and subsequent sale through London retailers, including quality items sold either decorated or in the white.
3. Swansea and Nantgarw porcelain left from the auction sales as unsold stock, perhaps of slightly inferior quality and certainly not presented for auction after 1823, but bought in cheaply and decorated locally by factory artists.
4. Porcelain bought in from other factories but decorated in Swansea by ex-factory Swansea artists in typical Swansea styles (such as Henry Morris, David Evans and William Pollard). This did not seem to happen at Nantgarw after Billingsley and Walker departed for Coalport in early 1820 and Thomas Pardoe painted the remaining stock at Nantgarw until he died in 1823, when all remaining items were sold off at auction.

As far as the overall theme of this research is concerned, named services can be allocated to the first two categories, i.e. porcelain of the finest quality either decorated locally or in the London enamellers; as far as collectors are concerned, the locally decorated services are arguably often considered to be more representative of true factory output—these tend to be of simpler decoration in a more restrained

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palette that truly demonstrates the translucent beauty of the underlying porcelain, whether this be the characteristic pale blue-green duck-egg transmission of the best Swansea soft paste or the incredibly translucent clarity of Nantgarw. It has been said that the ability to read a newspaper broadsheet through a back-illuminated Nantgarw dinner plate was much admired in aristocratic circles of the day!

In contrast to the locally decorated wares, the London enamellers tended to accentuate the mouldings and to cover much of the porcelain surface with paint, thereby obscuring much of the true porcelain consistency, transparency and clarity. The gilding was often very profuse and characterised by a dentil edging and also by a peculiar "iridescence" seen in grazing light reflection near the decoration (W. D. John, *Nantgarw Porcelain*, 1948). This iridescence was first noted by W. D. John and has been attributed to the different refiring techniques adopted by the London enamellers, who invariably used reducing conditions in their kilns in contrast to Pardoe's oxidising conditions used for locally decorated items. Yet, undoubtedly, it was the London decorated porcelains that drew these factories to the attention of wealthy clients. The only known named service of Nantgarw porcelain that was commissioned to be purchased glazed but completely undecorated and in the white was that of the Marquess of Bute—who obviously appreciated very much the beauty of the porcelain in itself. The author has never personally seen an example of this service, but perhaps the nearest equivalent cited in this current study is shown in Fig. 8.2, a dinner plate from the *Phippes* service, and which has just a simple crest in a single vignette of the moulded border, showing the true perfection of the Nantgarw porcelain glaze, moulding and translucency in the best possible way.

Although category 3 in the above classification is often dismissed as applying to porcelain perhaps of a more rustic type, this category and that of category 4 can both be viewed also as true products of the Swansea and Nantgarw factories, i.e. porcelain decorated, marked and sold locally for essentially local taste, often not employing the use of expensive gilding (Baxter often substituted chocolate, blue and green pigmented edging for the gilding for his locally decorated services) but rather relying more upon the quality of painting and selection of artistic subjects: in fact, a chocolate edging is now usually taken as a sure sign of Baxter's local decoration at Nantgarw.

Reference

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Chapter 14
Nantgarw Porcelain: Named Services

Abstract A comprehensive account of all the important Nantgarw named services identified as a result of research undertaken for this book with illustrations or directions as to where these may be located and identified. These number more than 33 separate services, several of which are still extant in museums but many of which have now been dispersed into private collections.

Keywords Nantgarw · Named services · Tea services · Dinner/dessert services · Nomenclature redefinition · Historical inconsistencies

There now follows an itemisation of the named Nantgarw services which can be currently identified with as much historically supporting information that is available currently.

Mackintosh service: Illustrated in John et al., *Nantgarw Porcelain Album*, 1975, Coloured Illustrations 19, 33. This service is said to have been originally created for The Mackintosh of Moy Hall—this statement is incorrect as mentioned above since it passed into the Mackintosh family through marriage some 60 years after the closure of the Nantgarw factory! Three different Mackintosh services, with slightly different patterns but all with superb floral and bird decoration, have now been characterised on Nantgarw porcelain—*Mackintosh 1* is a dessert service and is the original; this was actually commissioned by E Priest Richards, land agent for the Marquess of Bute, and was well known for its clear translucency, soft glaze and rich border gilding. The central theme of exotic birds was taken from the engravings of Levaillant of Paris (ca. 1801–1806) and the service was decorated in London for Mortlock's by Charles Muss of Robins and Randall. The service was presented to Ella Richards, daughter of Priest Richards, on the occasion of her wedding in 1880 to the Mackintosh of Mackintosh of Moy and it is believed that this original Mackintosh service was dispersed at auction before 1900. Therefore, it strictly never started as a Mackintosh service but this misattribution has spawned two more so-called "*Mackintosh*" services with similar decoration. *Mackintosh 1* pieces can easily be differentiated from analogues in *Mackintosh 2* because of a

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grouping of six unique alternating large and small curves at the rim. *Mackintosh* 2 comprised a very similar dessert service of 37 pieces sold by Christie's in 1944 but with some subtle but recognisable differences which included slightly smaller dessert plates (of 9 1/8 in.) with twelve equally spaced lobes. *Mackintosh* 3, in contrast, is a tea service of originally it is estimated 45 pieces which turned up for auction in April 1964, the property of the Earl of Dartmouth. Much of the service was damaged and just tea cups, coffee cups and some saucers and bowls now remain. All *Mackintosh* Nantgarw service pieces command high prices when items appear at auction, but the superior provenancing of *Mackintosh* 1 is highly valued.

Prince of Wales service: A tea service depicting, "*a green vase with a single rose in each and every one different*", commissioned by HRH George, Prince of Wales, who acceded to the throne as King George IV in 1820. The decoration is ascribed to William Billingsley—this is rather special historically in that it is a Royal service that has been decorated locally, unlike most analogous services which were commissioned through the London ateliers and retailers. Llewellyn Jewitt (*Ceramic Art in Great Britain*, 1878) and William Turner (*Ceramics of Swansea and Nantgarw*, 1897) have both subscribed to the idea that this *Prince of Wales* service was actually gifted to Ernest Augustus, Duke of Cumberland, a younger brother of the Prince Regent who became King of Hanover in 1837, although this provenance has been queried by Dr. W. D. John. The pure simplicity of this tea service which enhances the whiteness and quality of the porcelain and has a centrally located motif with simple gilding should be contrasted with the comparably over-decorated *Duke of Cambridge* dinner-dessert service, also ordered from Nantgarw by the Prince Regent (see below and Fig. 10.2) during the same period. To exemplify the point made earlier about "copies" being made of well-known services, there are pieces extant from two services from the Swansea factory which clearly have resonance in origin with the Nantgarw *Prince of Wales* design, although these are considerably more complex in style they both utilise the theme of a single dark green urn with flowers, but in these cases there are several floral bouquets in each urn and several urns on each item but the idea is the same (see, for example, O. Fairclough, in *Welsh Ceramics in Context, Part II,* illustration 10.13 p. 200, for a Swansea, cup and saucer in set pattern 117 with dark green urns containing a single rose 2005).

Duke of Cambridge service: A large dinner-dessert service (W. D. John et al., *Nantgarw Porcelain Album*, coloured illustration 58) comprising over 190 pieces, and also a second tea service (Coloured Illustrations 39, 58, 69, *Nantgarw Porcelain Album*). The dinner-dessert service was ordered by the HRH Prince Regent, later King George IV, in 1818 as a wedding present for his brother Adolphus, Duke of Cambridge, from Mortlocks in London. The painting was executed by Thomas Randall (W. D. John et al., *Nantgarw Porcelain Album*, 1975, coloured illustration 58) in the atelier of Robins & Randall. The original service specified four landscape panels, two floral panels and two panels with birds in vignettes around the heavily gilded rim, and an example of this original service specification is shown here in Fig. 10.3. Other examples have since appeared on the auction market which although apparently very similar in decoration and by the same hand, actually omit the vignettes of birds—these copies, although still genuine Nantgarw, are not as

highly appreciated as the originals as shown in Fig. 10.3 and provide another example, as with the *Mackintosh* service cited above, of a famous *named service* which was reproduced but with minor changes in the composition of the decoration. At its first dispersal, the *Duke of Cambridge* original dinner—dessert service numbered 48 pieces only, implying a significantly large loss having occurred with time, and apparently was purchased complete by a nobleman.

Duke of Cambridge/Duke of Gloucester tea service, an example of which is shown in W. D. John et al., *Nantgarw Porcelain Album*, 1975, Illustration 69; *Nantgarw Porcelain*, 1948, illustrations 18A and B), is of a more controversial attribution altogether; with a beautiful bright emerald/apple green ground and an *oeil-de-perdrix* decoration picked out in gold dots around panels of flowers attributed to the workshops of Robins and Randall and supplied by the retailer Mortlock's. It is immediately recognisable and examples fetch high prices at auction—again, there are several closely similar copies which have been alluded to already. There is much dispute about its attribution and Morton Nance (E. Morton Nance, *Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 370) in his authoritative work on Welsh porcelains ascribes this service as being ordered by King George III for Prince William, Duke of Gloucester, on the occasion of his marriage to his cousin, Princess Mary. On the other hand, the equally authoritative Dr. W. D. John (W. D. John et al., *Nantgarw Porcelain Album*, 1975, illustration 69) clearly assigns this service to the Duke of Cambridge, and confirms that it was ordered by the Prince Regent, later King George IV, as a wedding gift for his younger brother, Adolphus, Duke of Cambridge. Clearly, there is a serious confusion here and we can examine some possibilities as to how this arose. It is possible that W. D. John mis-assigned the dinner-dessert service ordered by the Prince Regent for his younger brother, the Duke of Cambridge, on the occasion of his wedding in 1818 as described above—but this is of a very different decoration to the tea service under investigation here. Alternatively, if we now consider a different scenario cited by E. Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942). The Duke of Gloucester, William Henry, secretly married Maria, Dowager Duchess of Waldegrave, in 1766 and he died without issue in 1805, a decade before the Nantgarw factory started production, so surely the so-called *Duke of Gloucester* service in question could not be ascribed as a wedding present to this Duke of Gloucester? In that case, how did the potential attribution arise: a possible explanation is that after the death of the Duke of Gloucester in 1805, the Duke of Cambridge married his cousin's widow, Princess Mary, the Duchess of Gloucester, and the personal effects of the Duke of Gloucester, including services of Worcester and Chelsea porcelains, are recorded as having passed to the Duke of Cambridge. It appears, therefore, on this basis that this tea service should be more correctly described as once being in the possession of the Duke of Cambridge: however, we already know that the Duke of Cambridge was married in 1818 and not in 1805—and, what really seals the fate of this hypothesis is the fact that the Duke of Cambridge was an elder brother of Princess Mary, who in 1805 was only 9 years old!! Secondly, it is a matter of historical record that the Duke of Gloucester married secretly, Maria, Dowager Duchess of Waldegrave,

in 1766. A suggestion can now be proposed which could resolve this issue: historically, William Frederick became Duke of Gloucester and Edinburgh in 1805 and he in fact married Princess Mary, fourth daughter of King George III on the 22nd July, 1816, when the bride was 20 years of age. The Prince Regent was the best man and his brothers the Dukes of Cambridge and Clarence were in attendance: although the wedding just predates the start-up of the Nantgarw factory, it is entirely possible that George, Prince of Wales, would have subsequently presented the Duke of Gloucester with a Nantgarw tea service within a year or two. The Duke of Gloucester died in 1834 and the Duchess in 1857. The tea service could well then have been dispersed in the mid to late 1800s. The other conclusion, of course, is that the only wedding present from the Prince Regent to his younger brother, the Duke of Cambridge, would have been the dinner-dessert service described earlier—is it reasonable to suppose that the Prince Regent would have given two services of Nantgarw porcelain on the same occasion as a wedding present to his younger brother? This means therefore that we should seriously consider that Morton Nance is technically correct, that W. D. John is wrong, and the tea service was originally in the possession of the Duke of Gloucester, but he assigned the wrong Duke of Gloucester, namely the one who died in 1805 and this has since thrown investigators off the scent!! The service was eventually inherited by Lord Cambridge via the Duchess of Teck and was dispersed by auction at Christie's in 1904. It is very unfortunate that Mortlock's records were destroyed upon closure as their documentation could have been instrumental in informing the early commissioning and provenance of these services.

Edward Edmunds services: Edward Edmunds, of Pen-y-Rhos farm near Nantgarw, was the landlord of William Billingsley at Nantgarw, who rented from him the site of the china factory, a cottage (now the Nantgarw China Works Museum Trust) and land adjoining the Glamorganshire Canal that was essential for the transportation of the raw materials for porcelain manufacture (coal, kaolin, soaprock and glass frit) from Cardiff docks and the exporting of the fired and glazed porcelains to the London retailers. In the 7 years from start-up to closure, he dealt with first William Billingsley and Samuel Walker and then William Weston Young: it is believed that three services were presented to Edmunds by Billingsley, painted by himself, perhaps *in lieu* of rent, which became known later as the *Edwards*, *Twyning* and *Duncombe* services. These services were passed on by inheritance and gifts to the three daughters of Edward Edmunds: Frances Edmunds received one tea service on the occasion of her marriage, which thereafter became known as the *Edwards* service and which remained in the possession of the Edwards family for about 150 years, through the Misses Edwards, great granddaughters of Edward Edmunds. The Edwards service is simply decorated with single roses and is illustrated in John (W. D. John, *Nantgarw Porcelain*, 1948: illustrations 39A, B and C, pp. 133–134).

A fourth *Edmunds* service, which has, it seems, been long neglected, was a tea service decorated in underglaze blue and overglaze red floral themes (illustrated in A. Renton, *Welsh Ceramics in Context I*, p. 138, Colour Plate 7.33), which superficially perhaps seems to lack the artistic accomplishment normally associated with William Billingsley.

The *Twyning* service, again very simply decorated in comparison with the *Duncombe* service which is heavily gilded: the latter is interesting in that it is more highly decorated than all the others and also seems to have provided one of the first Nantgarw pieces of porcelain to have been subjected to wet chemical analysis in the work of Eccles and Rackham (*Analysed Specimens of English Porcelain in the V&A Museum Collection*, 1922) in their seminal studies of the porcelains in the V&A Museum collections which have set the scene for all later analytical studies of paste compositions and bodies (M. Hillis, *Welsh Ceramics in Context, Part I*, 2003). A photograph of the actual Nantgarw saucer analysed by Eccles and Rackham is reproduced in *Welsh Ceramics in Context I* p. 184 and Colour Plate 9.17, where it can immediately be identified as part of the *Duncombe* service (although this fact was not realised or stated by Eccles and Rackham at the time of their analytical study)—the damage to this porcelain specimen caused by the destructive nature of the chemical sampling procedures, although necessary at that time (1922) to yield results, would not be acceptable in any form today (H. G. M. Edwards and J. M. Chalmers, *Raman Spectroscopy in Archaeology and Art History*, 2005; H. G. M. Edwards, *Frontiers of Molecular Spectroscopy*, 2009; H. G. M. Edwards, *Encyclopaedia of Analytical Chemistry*, 2015a; H. G. M. Edwards, J. M. Chalmers and M. D. *Hargreaves, Infrared and Raman Spectroscopy in Forensic Science*, 2012). The beautiful Nantgarw teapot and stand from this service is illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, illustration 22) but its attribution as part of the important Duncombe service is not mentioned there. A further link of common interest between the Twyning and Duncombe services, both of which originated with Edward Edmunds and then passed to his descendants, is that Canon William Duncombe of Hereford Cathedral married Isobel Twyning, granddaughter of Edward Edmunds, so giving name to this eponymous service.

Brace service: This dessert service comes under the category of nomenclature through acquisition as. It was London-decorated in Bradley's workshop in 1818–1820 with a central bouquet of flowers and vignettes in the moulded border with beautifully painted birds taken from George Edwards' *Natural History of Birds and Flowers* and was presented to the Rt. Hon. William Brace P. C. (1865–1947), a former under-secretary to the Home Office in the coalition government during the First World War. If this presentation occurred in the 1920s, the service was already 100 years old. This service must be described as generic, as examples frequently appear at auction and in galleries entitled "*Brace-type*", and they fetch significantly higher prices because of their quality and possible association. Very recently in early 2015, in the contents from Goodwood House from Susan Greville-Grey's estate, Duchess of Richmond, a *Brace-type* service numbering 20 pieces was discovered at the back of a cabinet in unused condition, without any evidence of knife marks or scratches whatever: at the subsequent sale of contents a delighted purchaser paid £20,000 for this part service, which was well below the going rate on the basis of an evaluation of single items, especially those found in an unused and perfect condition. The fact that this high quality dessert service appeared unused and unmarked after 200 years of storage is remarkable and indicates that it may have been purchased from the London retailers of the Nantgarw

factory when new rather than from the dispersal of well-used effects from another estate at a previous auction.

Marquess of Bute service: As reported and discussed in Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw* 1942, p. 403) this is an embossed dessert service decorated locally by Thomas Pardoe with birds in vignettes on a mid-blue ground at the rim. A second *Marquess of Bute* service has been reported and is considered very unusual in being a plain white dessert service devoid of decoration or ornamentation (E. Morton Nance 1942, p. 424) but this seems to have escaped attention more recently. Turner (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897) reports that on a visit to the Marquess of Bute in Cardiff Castle in the 1890s he noted several Nantgarw tea services—others were housed in the Marquess' London home and he was told that there were some 70 pieces more at his Mount Stuart House on the Isle of Bute, including a particularly fine Nantgarw dessert service with floral groups and butterflies decorated by Billingsley, and a beautiful tea service of Swansea porcelain. None of these services has yet been identified further because of inadequate descriptions in the surviving records. A further Marquess of Bute dessert service is described by W. D. John (*Nantgarw Porcelain*, 1948, illustration 26B) as comprising a continuous gold band at the border decorated with pink roses by James Plant in a very attractive "Derby type" arrangement; incidentally, it is also maintained that the typical Derby "three-rose" pattern actually originated with Billingsley in Nantgarw, where it became adopted by other factories too, such as Spode. Morton Nance (Illustration CLVIIIB, p. 352) describes a further Marquess of Bute service with rose painting and a beaded moulding decoration. The Marquess of Bute was an ardent supporter of the Nantgarw factory so perhaps it is not surprising that he should possess several important commissions and services; as a corollary, therefore, it would seem realistic to expect that other prominent patrons and supporters of Nantgarw would also have commissioned services … and we have already noted earlier the deficiency of these as known presently which could imply that several important remnants still need to be recognised.

Wyndham Lewis service: Illustrated in W. D. John et al., *Nantgarw Porcelain Album*, Colour Plate 43 and in E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, p. 403. Wyndham Lewis was the MP for the Glamorgan Borough, 1820–1826, a barrister and an influential if not the chief industrial partner in the Dowlais Ironworks of Guest, Lewis and Co. His family residence was at Green Meadow, Llanishen, where his descendants still live. In W. D. John (W. D. John et al. *Nantgarw Porcelain*, 1948, p. 78) the *Wyndham Lewis* service is not mentioned as such but is referred to as the *Greenmeadow Service*. This service is unique for its simulation of the overglaze pinkish-puce Sevres *rose pompadour* border colour (also known as "*rose du Barri*") and was painted by Thomas Pardoe in the last year of factory production. It was delivered in 1822 before closure of the factory in October of that year—Pardoe died shortly afterwards in July, 1823. Wyndham Lewis died in 1838 and his china was then dispersed at auction: he had married Anne Evans in 1815, who later became Mrs. Benjamin Disraeli, Viscountess Beaconsfield. It appears that a second Wyndham Lewis service exists (W. D. John et al., *Nantgarw Porcelain Album*, 1975, Colour Plate 45) which is

much plainer in decoration but nevertheless beautifully painted by Pardoe and can easily be differentiated from the first Wyndham Lewis service by the colourless rim, with nevertheless exquisitely fine gilding. A large part of the *Wyndham Lewis* service came into the possession of the Marquess of Bute and a companion tureen and stand from the *Wyndham Lewis* service is illustrated in John Bunt's pamphlet on the Clyne Castle Collection Exhibition at the Glynn Vivian Art Gallery, Swansea, held in 1971. Bunt felt that although the *rose pompadour* ground colour is very successfully reproduced in this Nantgarw service it nevertheless does not quite match up to its Sevres analogue as the post-Billingsley Nantgarw Pardoe glaze is not absorbent enough to give the rich depth of colour exhibited in the French porcelain—at this time Young and Pardoe were really at the limit of their available financial resources at Nantgarw, which closed down finally just a few months later.

Viscount Weymouth service: Outside of the four armorial crested services mentioned earlier one of which has been already illustrated in Fig. 8.2, Nantgarw armorial services appear to be very rare indeed. An unusual example which has been mentioned in an earlier section on armorial porcelain is that of Viscount Weymouth, eldest son of the Marquess of Bath, Longleat House, Wiltshire, which is illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, colour plate illustration 56. This contains a full coat of arms for Lord Frederick Thynne, born in 1797, who became Marquess of Bath in 1837 and died in the same year. The coat of arms has a *reindeer, or, dexter and a lion sinister* and a motto "*J'ay bonne cause*", translated as "*I have good reason*".

Spencer service: Commissioned by Earl Spencer for Althrop House in 1820, in a Sevres style with bouquets of flowers in scroll cartouches gilt and blue feuilles-de-choux, the remnants of this service were sold at auction in Althrop House in 2009; also illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, colour plate 31. An unusual feature of the *Spencer* service is that there is no gilding and the edges are coloured a deep royal blue enamel.

Marquess of Anglesey service: Illustrated in W. D. John et al., *Nantgarw Porcelain Album*, Colour Plate 37; this is a combined Swansea and Nantgarw tea service—a very interesting concept and believed to be quite unique in porcelain manufacture—its actual origin is unknown and raises the question as to whether this was one service designed with the shapes and pieces from both factories or perhaps a combination of two distinct orders placed consecutively at Swansea and at Nantgarw with decoration in a very similar but not quite identical patterns. The illustration in W. D. John et al. (*Nantgarw Porcelain Album*, 1975) shows very nicely the unusual Nantgarw cruciform shape of the flatware. The service was dispersed first in 1903 and again in 1930. The distinctive London-shape Swansea teacups from this service marry well with the Nantgarw version, seem to have an identical pattern as befits this hybrid service; however, a comparison of the tea cups and saucers reveals an interesting difference in the decoration—whereas the Swansea version has the flower wreath and coloured background on the outside of the cup, its Nantgarw analogue has this similar decoration applied to the inner surface of the cup. This fact strongly suggests that the two components were decorated separately according to the requirements of each factory in Swansea and

Nantgarw and that porcelain items from one were not bought in for decoration at the other. This also seems to indicate perhaps a local source of decoration rather than a multiple purchase by the London enamellers for their own decoration—which may have given the expectation that in this case the decoration would have been identical, as has been found with the Swansea *Lysaght* service which contained both Swansea and Coalport pieces, both of which have identical decoration carried out by one artist at the Swansea factory.

Duke of Newcastle service: The first Duke of Newcastle was Prime Minister of the United Kingdom between 1754 and 1762. Decorated in Robins & Randall's workshop in London by Moses Webster, who joined the workshop in 1819 before returning to Derby a few years later, this service (a plate from which is shown in monochrome illustration 26A in W. D. John, *Nantgarw Porcelain*, 1948) is generally regarded as demonstrating the finest quality free flowing floral painting which actually enhances the beauty of the porcelain substrate.

Sir John and Lady Williams service: A very beautifully painted, London-decorated, dessert service with ornate and prolific gilding—an example was presented to the University of Wales Aberystwyth Museum in 1915 by Lady Williams. Similar plates are known in where the gilding is slightly less prolific and also where the gilding is even more profuse (Fig. 14.1), although the flower painting is almost identical in all three examples with a central floral group and six vignettes of roses. A further example of a large portion of this service is illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, monochrome plate 97), which clearly shows the *Williams* type decoration and gilding.

Fig. 14.1 Nantgarw porcelain dessert plate, marked impressed NANT-GARW C. W., *Sir John and Lady Williams* type generic service, London-decorated with extensive gilding extending onto the central floral panel. *Private Collection*

Duke of Norfolk service: (W. D. John et al., *Nantgarw Porcelain Album*, 1975, colour illustration 61) is London-decorated and was dispersed at the sale of effects of Norfolk House, London, in 1938. A second *Norfolk* service has appeared at auction more recently and is of a very different decorative palette.

Lady Seaton service: Fig. 14.2. A very recognisable underglaze blue painted service after the similar style adopted for the Swansea counterpart, but the blue colour is stronger as can be seen by comparison with the Swansea analogue, where the contrast of the cobalt blue pigment colour with the creamier Swansea porcelain body renders the appearance to be much paler than it does with the starker white Nantgarw body and glaze (see O. Fairclough, in *Welsh Ceramics in Context Part II*, p. 206, 2005 illustration 10.24 for the Swansea counterpart). In Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, p. 383 and monochrome Plate CLXVID), the *Lady Seaton* service (although not mentioned as that per se) is described as being of "tasteful design in an overglaze blue that was much in vogue for the 1815–1820 period" and which could have been decorated locally or in London: the dentil edged gilding of the example shown here, however, definitely indicates a London-decorated plate as does the example shown in Morton Nance.

Fig. 14.2 Nantgarw porcelain, dinner plate, *Lady Seaton* service, nomenclature derived from Lady Seaton of Bosahan, Cornwall, marked impressed NANT-GARW C. W., underglaze blue transfer pattern, London decorated, dentil gold edging. *Private Collection*

Lord Vernon service: Commissioned by the 3rd Lord Vernon, Earl of Jersey, of Briton Ferry, a London-decorated service with flowers and chains of roses. A close copy of the Vernon plate appears to be a very similarly shaped dish but it does not have the gilt ribbons and floral swags of the Vernon service, so it can probably be classified as a near facsimile.

Ferguson service: Locally decorated with a broad dark blue band at rim—this is the same as the pieces illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, Colour Plate 69 lower) where it is given as locally decorated by Pardoe (1820–1823), with the gilding being either non-existent or scarce. In the illustration are shown three pieces from this service with central panels of fruit, flowers

and birds in which only one plate has evidence of a simple gilding at the edge and with several gilded motifs at the rim (a similar plate is shown in Andrew Renton's article (*Welsh Ceramics in Context, Part I*, Colour Plate 7.37). A gilded dessert plate of this type is illustrated in Plate X in J. Bunt's pamphlet on the Clyne Castle Collection (J. Bunt, *Swansea and Nantgarw Porcelain from the Clyne Castle Collection*, 1970) (see later) exhibited at the Glynn Vivian Art Gallery, Swansea, in 1971; it is stated that the ground colour is in imitation of the famous Sevres *gros-bleu* colour, which is exquisitely complemented in the superb flower painting by Thomas Pardoe, but the superb Nantgarw moulding at the rim is almost completely obscured by the dense blue enamel colour.

Thomas Williams service: Comprising landscapes centrally located in a Nantgarw moulded pieces—a famous example is in the National Museum of Wales collection depicting Pontypridd Bridge, built by William Edwards in 1756 (see the print in Fig. 12.1) to cross the River Taff, painted by Thomas Pardoe and with a "TW" stylised monogram in the reserve. Part of a service that belonged to Thomas Williams, 1778–1853, a local bardic poet (Gwilym Morgannwg) and innkeeper from Pontypool. This shows Nantgarw porcelain at its best. There is some doubt about the initials on this plate—there is a possibility that the initials are actually "JW" and refer to a John Williams.

Hensol Castle service: A very large breakfast service of over 300–400 pieces, believed to have been directly acquired either from the last days at the factory or perhaps at the closing down auction sales of Nantgarw porcelain and which therefore may well in that case have been decorated by Swansea artists as well as by Thomas Pardoe at Nantgarw. A rare butter tub exists from this service–simply decorated with a gold sprig and wild blueberry repeating theme in an attractive, high quality product. The family lineage at Hensol Castle is rather complex and initially was the Talbots, from the 1st Baron Talbot, in the 1780s, descending through the Crawshays of Cyfarthfa Castle in the early 1800s and eventually passing through to the Earl of Shrewsbury. It is believed that Hensol Castle must have had some other services of Welsh porcelain from oblique references in various texts but sadly the information needed to identify these is now lost.

Theodore and Mary Ellis service: A 35-piece service acquired by these esteemed American collectors, (shown in W. D. John et al., *Nantgarw Porcelain Album*, 1975, Colour Plate 25) richly ornamented and London decorated* (Note added in proof: late in 2016 a superbly decorated Nantgarw service of 35 pieces appeared in auction and is apparently identical with the *Theodore and Mary Ellis* service, once on display in the Worcester Museum and Art Gallery, Massachusetts, USA: an oval comport from this service has been presented to the Nantgarw China Works Trust Museum (Nantgarw China Works Trust Museum, Winter Newsletter, 2016)).

Spence-Thomas service: A local Nantgarw family with a breakfast service finely painted by Thomas Pardoe from which a muffin dish and cover is shown in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, colour illustration 31). A coffee cup from this service is shown in Fig. 14.3: the very fine flower painting of Pardoe is offset by simple local gilding, exposing to perfection the quality of the porcelain body and glaze. The existence of a second service is also recorded through a plate sold at Bonhams auction rooms in 2008, locally decorated by Pardoe.

Fig. 14.3 Nantgarw porcelain, coffee cup, heart-shaped handle, from the *Spence-Thomas* breakfast service, decorated by Thomas Pardoe. *Private Collection*

Usk Priory service: A Nantgarw porcelain plate originally ordered by E. Priest Richards, land agent to the Marquess of Bute and decorated in some of the finest painting executed by Thomas Pardoe as illustrated in W. D. John et al., *Nantgarw Porcelain Album*, 1975, coloured illustration 20.

Ewenny Priory service: A soup plate, an outstanding example of Pardoe's work dating from about 1821, is illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, Colour Plate 28). The descendants of the Turbervill/Picton-Turbervill family who purchased the original service still reside at Ewenny and a Major Edmondes is cited by Morton Nance as being resident there. It is believed that a second Ewenny Priory service existed and this is also by two dishes illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, Colour Plate 21).

William Weston Young service: Ornately decorated in London at the Robins & Randall atelier in resemblance of the *Duke of Cambridge/Duke of Gloucester* tea service with a blue ground, an *oeil-de-perdrix* motif decoration and three panels exquisitely painted with flowers and illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, Colour Plate 39)—this remnant was kept by descendants of the Young family at Preswylfa, Neath.

Mortlock service: As shown in W. D. John et al. (*Nantgarw Porcelain Album*, 1975, colour illustration 45). This service was the last service to be sold off as a complete entity by Mortlock's retailers on its shop closure in 1933, a 33-piece dessert service, decorated in the Sevres manner with a green border—a classic, fine Nantgarw service that was purchased in its entirety from the retailers on closure. Morton Nance indicates that this service or one extremely similar to it was ordered by King George IV, who was inspired by the Sevres design. The rich olive-green colour to the border was inspired by the much admired Sevres *vert fonce*, which was accentuated by heavy raised gilding and was otherwise devoid of moulding.

It appears from Morton Nance (E. Morton Nance, 1942, p. 377) that a second type of Sevres-inspired Nantgarw design comprising a turquoise trailing ribbon intertwined with pink roses at the rim was also made for Mortlock's and cited in Turner (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897) and is illustrated there as Plate XII. Morton Nance (E. M. Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942) states that a single plate from this second service came up for auction in 1908 and sold for 9 guineas, which he regarded as relatively cheap because of its rarity and association.

Lord Llangattock service: As illustrated in W. D. John et al. (*Nantgarw Porcelain Album*, Colour Plate 86). A tea service decorated locally by Thomas Pardoe with rustic scenes and figures and ungilded was acquired at the dispersal sale of contents of the family home, The Hendre near Monmouth—where Charles Rolls founder of Rolls-Royce and son of Lord Llangattock took his tea, probably using this service.

Aberpergwm House services: Two oblong Nantgarw dishes from the Williams family residence at Aberpergwm House in the Vale of Neath appeared at the dispersal of effects sale—clearly beautifully decorated locally by Pardoe, one with his characteristic "gilt marbling" effect, they came from important services of which little now remains. It is interesting that the upper of the two dishes illustrated in W. D. John et al., Nantgarw Porcelain Album, 1975, coloured illustration 53, is actually unique and has been reproduced by Turner *Ceramics of Swansea and Nantgarw*, 1897, Plate XXI)—Turner maintains that it is unquestionably authentic, has the usual impressed Nantgarw mark, and decorated by Billingsley(!!) yet it has a puce painted script *Nantgarw* mark accompanied by a crown, which otherwise would normally have been relegated to fake porcelain! Authentic it undoubtedly is, which itself raises the question as to the reason for this curious mark: it is now believed that this possibly reflected the pride evinced in Nantgarw at their Royal patronage through the commissioning of several services—a similar result appeared at the Rockingham porcelain manufactory after it had successfully achieved the patronage of King William IV in 1836, when it assumed the title of "Royal Rockingham" applied to its subsequent wares. The attribution to Billingsley is a bit suspect and probably this is a later product from the hand of Thomas Pardoe in the period 1821–1822 after William Billingsley had left Nantgarw for Coalport in 1819. Unfortunately, it is believed that no other pieces from this special service are now extant and for some reason the mark was not adopted on any other Nantgarw services, which may therefore mean that this mark was executed at the request of Morgan Williams during his commission of the *Aberpergwm House* service.

Another *Aberpergwm* service was purchased directly from the Nantgarw factory by Marie Jane Williams, younger daughter of Rees Williams, Squire of Aberpergwm House, and one of the most influential and artistic Welsh ladies of her age, who assimilated a diverse collection of Welsh poems, harp and folk music. This service has unfortunately not been described well enough to facilitate its identification but it is said to depict some of Thomas Pardoe's finest flower painting on Nantgarw porcelain (W. D. John, *Nantgarw Porcelain*, 1948, p. 144)—could this

be the second of the two dishes from Aberpergwm House shown in the coloured illustration 53 of the *Nantgarw Porcelain Album* (W. D. John et al., 1975) ?

Kenyon Service: This Nantgarw tea service, dispersed at auction in 1935, comprises floral decoration on a *gros bleu* deep cobalt blue ground and vignettes of flowers and exotic birds with faux pearl and *oeil-de-perdrix* motifs in a Sevres style with pronounced similarities to the *Duke of Cambridge* tea service. There seems to be some controversy about its decoration: W. D. John concludes that it is London decorated in the workshop of Thomas Randall in 1818–1820, rejecting the idea that it originated locally from the hand of William Weston Young, whereas others favour the workshop of John Sims. The illustration provided by W. D. John (W. D. John, *Nantgarw Porcelain*, 1948, p. 105) gives a very good appreciation of this service but a trawl of auction sites offering pieces from the *Kenyon* service does not match this description at all and several pieces offered as items from the *Kenyon* service seem to prescribe floral vignettes in a deep royal blue reserve with the absence of any *oeil-de-perdrix* and faux pearl motifs altogether, hence a rather different decoration, although definitely still of the Sevres type but perhaps rather more akin to the green-bordered *Mortlock* mentioned earlier or even the *Ferguson* type service. Nothing seems to be known of the origin of the commissioning of the *Kenyon* service. The *oeil-de-perdrix* backgrounds were reproduced in Nantgarw in a variety of colours and shades of blue, green and turquoise, including pale lavender and a highly prized "*rose Pompadour*" pink (As illustrated in Colour Illustration 22 in W. D. John, *Nantgarw Porcelain*, 1948).

Wilde Service: W. T. Wilde, Keeper of the Exchequer at Windsor Castle, purchased a tea service of Nantgarw porcelain, decorated in London with profuse gilding depicting freely growing vines and wheat ears all in highly burnished gilt and with a strikingly high lustre (Colour Illustration, 25A, B and C in W. D. John, *Nantgarw Porcelain*, 1948). Examples do come up from time to time in the auction rooms from the dispersed service. The decoration on this service is rather unusual for London decorated pieces in that no coloured pigments or flower painting has been used.

The suggestion that purchase of Nantgarw porcelain services directly from the factory by local gentry and landowners, especially during its second phase of operations in 1817–1820 when not all of the production would have been despatched to the London enamellers for retail through the outlets there, is reinforced by the presence of significant and important collections of the porcelain which still existed in the early to mid-20th Century and which have been mentioned by Dr. John in his excellent work, *Nantgarw Porcelain* (p. 146, 1948). An excellent example of this thesis is provided by Dr. John's mention of the collection of the Misses Booker of Southerndown in the coastal Vale of Glamorgan, who had in their family possession some of the finest landscape painting ever executed by Thomas Pardoe on Nantgarw porcelain, including six plates with a blue-bordered rococo moulding interspersed with six equally spaced golden medallions (which the present author draws analogy with the *Ferguson* service type illustrated elsewhere, but with floral painting by Pardoe) (see for example, A. Renton, *Welsh Ceramics in Context, Part I,* 2003, illustration 7.37, p. 139). The six landscape

scenes included those of the old bridge across the River Taff in Pontypridd and the Aberdulais falls in the Vale of Neath—the former was also the subject of a previous oval moulded Nantgarw plate that belonged to T. Williams and is shown here in the engraving of Fig. 12.1. Also in the Booker collection were two tea service of Nantgarw porcelain (illustrated in W. D. John, *Nantgarw Porcelain*, 1948, Colour Illustration 10D).

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Chapter 15
Swansea Porcelain Named Services

Abstract A comprehensive account of all the important Swansea named services identified as a result of research undertaken for this book with illustrations or directions as to where these may be located and identified. These number more than 18 separate services, several of which are still extant in museums but many of which have now been dispersed into private collections. These number fewer than those considered for the Nantgarw discussion in the previous chapter, despite Swansea having a considerable number of set patterns already identifies the absence of the factory workbooks is a severe disadvantage for historical provenancing issues.

Keywords Swansea · Named services · Tea services · Dinner/dessert services · Nomenclature redefinition · Historical inconsistencies

Lady Seaton service: This is an underglaze, light cobalt blue, transfer decoration of sprays of flowers comprising carnations, narcissi and poppies, with edged gilding which passed into the possession of Lady Seaton of Bosahan, Manaccan, Cornwall. Few items were individually marked. The service was originally in the possession of an Arthur Jones of Bryn Newydd, Swansea, and was acquired in 1864 by Lady Seaton at the dispersal of his effects by auction. This provides another example of a service nomenclature by acquisition rather than by original commission (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, footnote p. 343; O. Fairclough, *Welsh Ceramics in Context II*, p. 206). Morton Nance states that the *Lady Seaton* service is "the most important example of the use of blue transfer as decoration for Swansea porcelain": it is believed that Henry Morris supplied the original designs for the engraver charged with production of the prints for the Lady Seaton service. An interesting difference between the Swansea and Nantgarw versions of the Lady Seaton service is that the Nantgarw is monochrome blue but hand painted and is not a transfer pattern; also, the blue used for the Nantgarw analogue shown in Fig. 14.1 is much deeper and appears more strongly in contrast against the white glaze compared

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with the creamier Swansea paste. Morton Nance (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, 1942, p. 304) cites another Lady Seaton Swansea service which he called the *Bosahan* service, with an impressed Swansea mark, comprising some forty pieces including dishes and comports decorated by Henry Morris with exceptionally fine flower painting and ascribed to his early work (examples are illustrated in monochrome in EMN, Plate CXIV G and H). No record subsequently is made of this important named service: one may hypothesise about the link between a tiny Cornish village and Welsh ceramics—it appears that a member of the Vivian family, Sir Arthur Pendarves Vivian, the third son of John Henry Vivian and a younger brother of the first Lord Swansea lived there and through his society contacts could have possibly generated an interest in the acquisition of specimens of this very fine porcelain? However, appealing though this hypothesis may be it does not bear scrutiny chronologically, since Lady Seaton acquired her Swansea blue and white service in 1864 and Sir Arthur Vivian, industrialist chairman of Vivian's copper smelting works and colliery was a Swansea resident whose relatives inhabited Clyne Castle, until he moved to Bosahan in 1885 upon relinquishing his Parliamentary seat and lived there until he died in 1926. It is a shame that Morton Nance does not exhibit a photograph of the second *Bosahan* service in colour as this may render its identification possible. However, Morton Nance does claim this to be a very fine dessert service of more than 40 pieces, comprising four square, four oblong and four oval dishes, two sucriers and stands and twenty-five dessert plates decorated superbly by Henry Morris "…*in his best manner with mixed bunches and sprays of garden and wild flowers*…". An examination of Jones and Joseph (*Swansea Porcelain*, 1988, p. 231, Colour Plate 5) reveals a very similar plate attributed to Henry Morris, and cited as a typical example of his artwork, in which the floral sprays, edge border and gilding are a close match for the *Bosahan* service as illustrated in Morton Nance, except that the plate illustrated there is not of a cruciform moulding.

Lysaght service: a combined dinner-dessert service of 131 pieces, richly decorated by Henry Morris locally in Swansea with a basket of mixed garden flowers, each basket being set upon a pedestal with a rich royal blue border finely gilded with a filigree pattern. The service dates from the Bevington period, i.e. post 1817 and in the 1817–1820 period, after Billingsley had already departed for Nantgarw Little seems to have been researched about this particular commission although the name of a John Lysaght is sometimes associated rather loosely with this service. If this is true then it is possible that the *Lysaght* service was commissioned by John Lysaght, 3rd Baron Lisle of Mountnorth in Ireland, born in Cork in 1781, who succeeded his father, also John, in 1798. He married Sarah Gibbs in 1809 and died in December 1834 without issue as the result of a hunting accident. Local association with the Lysaghts arises from the activities of a relative William R. Lysaght (1800–1840) and his descendants, who established a forge and ironworks in Swansea and Newport: the latter gave rise to the Lysaght Institute there, which is still preserved and listed architecturally. It is perhaps more likely than that the local Lysaght was the originator of the commission. Some items of the service are marked Swansea in red stencil, but several are believed to be of a Coalport origin,

bought in the white to complete the order, but still decorated by Henry Morris in Swansea. Few items were marked as such. Two plates from the *Lysaght* service were presented to Her Majesty Queen Elizabeth II by Swansea Corporation on the occasion of her Coronation in June, 1953. Several shapes in the *Lysaght* service are non-standard Swansea shapes, for example, the eight-lobed rim plates edged in gold and some rather unusual salad bowls, and these could therefore be either rare experimental pieces or possibly extraneously derived, probably from Coalport.

Burdett-Coutts service: Fig. 10.4. This is a very large and lavish dessert-dinner service with special items and large tureens and ice pails, perhaps almost 300 pieces originally, designed for magnificent entertaining. Ordered by Thomas Coutts (1735–1822), private banker to King George III, and founder of Coutts & Co, The Strand, in 1818 to celebrate his second marriage to Harriet Mellon, the actress, from Mortlocks, London agents for Swansea porcelain, who commissioned the enamellers John Sims of Pimlico to decorate it. James Turner, one of the most accomplished painters in the atelier decorated much of the service with a central basket of garden flowers in natural colours and double rose sprays. Coutts had three daughters by his first marriage to Elizabeth Starkey, Susannah (married the Earl of Guildford), Frances (married the 1st Marquess of Bute) and Sophia (married Sir Francis Burdett)—all of exceptional beauty and known as the Three Graces (as whom they featured on a Nantgarw plate shown in W. D. John et al., (*Nantgarw Porcelain Album*, 1975, Colour Plate 62) also painted by James Plant at the atelier of John Sims in London. This plate was sold recently in 2015 at Philip Serrell's auction rooms in Malvern for £32,000. Thomas Coutts died in 1822 and his widow, Lady Coutts, inherited her husband's immense fortune then she remarried and became the Duchess of St. Albans but she had always intended bequeathing the porcelain to the Coutts family. Upon her death in 1837 and previous disinheritance of her chosen male heir grandson, Lord Dudley Coutts, through his association with the Napoleonic dynasty by marriage to the daughter of Lucien Bonaparte, she bequeathed the whole Coutts fortune to Thomas Coutts' granddaughter, Angela Georgina Burdett, whose mother Sophia had married Sir Francis Burdett in 1793. Angela assumed the name of Burdett-Coutts and became "*the richest heiress in England*" to whom it is said that almost every eligible man had proposed! She was a great benefactor and achieved the distinction of being the first and only woman to be elevated to the peerage in her own right, in 1871, by Queen Victoria. She married Mr. William Ashmead Bartlett in 1881 and she died in 1906 aged 92 years. Of superior duck-egg porcelain, the *Burdett-Coutts* service is widely considered to be the most important Swansea service even though it was decorated in London and not locally. The service was sold for 1550 guineas at Christies in London—originally described erroneously as painted locally by William Billingsley (Morton Nance, 1942, p. 348), in May, 1922, as part of an eight-day sale of works of art from the estate of the Baroness Burdett-Coutts. At this time 249 pieces remained of the *Burdett-Coutts* service, which was essentially complete, and several of these are now in the Royal Collection of Her Majesty the Queen in Windsor Castle. Pieces are very highly prized by collectors of fine porcelain. One of the 44 surviving dessert plates from that time is shown in Fig. 10.3.

The whole remnants of the *Burdett-Coutts* service were acquired at the salerooms by Mr. F. E. Andrews of Cardiff and a representative selection later passed into the possession of the Marquess of Bute, this included the two ice pails, considered by many to be the most magnificent creations of the Swansea porcelain manufactory and being rather interesting in their rococo style, which was a departure from the simplicity of the remainder of the service. A curious highlight is raised here concerning the provision of indentations in the soup and dessert tureens which were clearly designed to accommodate ladles—yet no ladles have ever been mentioned in any inventory or commissioning of Swansea or Nantgarw porcelain services. It is a matter of conjecture as to whether porcelain ladles were more prone to damage than other service items and therefore would not have survived or perhaps there was never any intention to provide such items in the first place, and that silver ladles would have been intended for use with these tureens? Up to the present time, no porcelain ladles from either Swansea or Nantgarw have been described or identified and we can but therefore assume that the second explanation is correct.

Thomas Lloyd service: A *Mandarin* pattern 164 dessert service (see Fig. 8.1 for an example) with filled–in chinoiserie transfer in a *famille rose* style, with a seated Chinese figure in front of a house and some Westernised houses depicted in the background. The coat of arms of Thomas Lloyd of Bronwydd, Cardiganshire, depicting a boar facing left standing in front of an oak tree appears in just one vignette at the rim of the plates or centrally on the dessert tureens. The service is believed to have been commissioned by Thomas Lloyd to celebrate his marriage in 1819 and is distinctive amongst all Welsh porcelain from Swansea and Nantgarw in being the only service that bears a motto in Welsh, namely, "*Y Dduw bor Diolch*", which can be translated as "*Thanks be to God*". A rectangular dessert dish from the *Lloyd* service is depicted in colour plate 10.15, p. 200 of Oliver Fairclough's article in *Welsh Ceramics in Context II*, 2005.

Young of Waun Ceirch service: Referring to the son of William Weston Young—this comprised a Swansea service which was dispersed in the mid-1860s. Some of this and other services are believed to have remained with a Colonel Young, a direct descendant of William Weston Young, at Preswylfa, Neath, and were seen by Turner prior to the publication of his book in 1897 but were, unfortunately, not described sufficiently for adequate identification.

Biddulph service: A dessert service commissioned by John Tregenna Biddulph of Ledbury Park, Herefordshire, from John Bradley & Co. and painted by Philip Ballard with landscapes from Worcestershire and Herefordshire. The service can be dated quite accurately to 1821 as in that year Bradley's moved their shop from 54 to 47 Pall Mall and several of the *Biddulph* plates bear the transitional stamp of Bradley's at both 54 and 47 Pall Mall. Most of the service is now in the Glynn Vivian Gallery at Swansea—the ice pails are not of Swansea porcelain but are of Paris hard paste porcelain, so they may have been added later or perhaps to make up the service at the time. It is interesting that Edmundson (*Welsh Ceramics in Context I*, 2003, p. 203) illustrates a plate that seems to be en suite with the Biddulph service and painted in Bradley's by Ballard but it is marked Nantgarw: the landscape is also out of geographical context with the rest of the service since

the seat of Lord Templetown at Wooham in Surrey is depicted on this plate. It is conjectural to propose that the *Biddulph* service could be a hybrid service on this evidence alone but possibly non-Swansea items, including several of Nantgarw porcelain, were used to make up the composition. It is interesting that a broken specimen of the *Biddulph* service was analysed as documentary Swansea porcelain but clearly some doubt has been cast recently upon the status of this service as being completely Swansea in origin and this is also reflected in auction room attributions.

Ivor Vachell service: This is a particularly interesting example since it consists of several plates, two of which are illustrated in Morton Nance (*The Pottery and Porcelain of Swansea and Nantgarw*, 1942 plates CXIIB and C, and further described on p. 298) which are identified as painted by David Evans in Swansea but from Nantgarw moulds …. because the coefficient of contraction of the porcelain paste at Swansea was different to that at Nantgarw, these hybrid plates are slightly but measurably smaller than their true Nantgarw analogues. The question now arises as to whether the Nantgarw recipe was used at Swansea after closure of the factory (this was always deemed to have been unlikely since Billingsley is believed to have taken the recipes with him to Coalport upon leaving Nantgarw) or whether this was a Swansea experimental body based on the Nantgarw composition which came very close in visual appearance to that of the true Nantgarw paste. Nevertheless, these plates will remain as a controversial reminder of the unstable situation which applied at the closure of the Nantgarw factory in 1820 and the fight for survival with increasing competition at Swansea in the 1820–1822 period.

Sayers service: A large breakfast service which was purchased at some unspecified time by Mr E. Sayers and was later dispersed at auction in 1932. It is believed that this was the actual service described as "*Paris fluting with broad gold bands*" in the final auction sale of Swansea porcelain in 1824 which left many potential purchasers dissatisfied who were unable to acquire examples of Swansea porcelain and left empty-handed. The original purchaser is not recorded but Sayers bought it sometime later and Jenkins (*Swansea Porcelain*, 1970) failed to locate the pieces after the modern auction. The illustration of a cup and saucer in Fig. 10.1 is exactly that as described and so could be a component of this service or perhaps another identical one.

Bevington—Gibbins service: A dinner-dessert porcelain service ordered in the Bevington period, comprising a blue transfer-printed pattern with a tower and castle theme, the so-called "Castle" pattern which appeared more commonly on later Dillwyn earthenwares. This service is technically termed the *Bevington-Gibbins* service as it was believed to have been commissioned from Bevington & Co. by Joseph Gibbins, a relative of the Bevingtons, on the occasion of his marriage to Elizabeth Clarence in 1823; the service then passed to Bevington Gibbins of Ettington, Warwickshire. In the soup tureen illustrated by Fairclough (O. Fairclough, *Welsh Ceramics in Context II*, p. 204, colour plate 10.22) the stand bears the rare impressed mark on Swansea porcelain of BEVINGTON & CO, although a few plates also exhibit concurrently the SWANSEA stencil mark in red. Morton Nance (E. Morton Nance, 1942, pp. 129, 343) records that only

eight plates of this original service then survived in the possession of Theodore Gibbins, Neath, of which only four are marked. It is interesting that a plate from the *Bevington-Gibbins* service was analysed by Eccles and Rackham in 1922 as an example of a standard Swansea porcelain body, which seemingly it is not. It is interesting that for the *Bevington Gibbins* service tureen depicted in colour plate 10.22, a ladle is also shown of similar Castle pattern, but this is not porcelain but earthenware!

Vivian—Marino Ballroom service: A local industrialist, John Henry Vivian, father of the 1st Lord Swansea and one of the original sponsors of Dillwyn's china factory, ordered the Marino Ballroom dinner-dessert service in duck-egg porcelain for use in the ballroom of Marino, his octagonal residence overlooking Swansea Bay depicted on a Swansea plate shown in Jones and Joseph (*Swansea Porcelain*, 1988, p. 199/1) and referred to and shown in Morris (*Welsh Ceramics in Context, Part I*, 2003), now the site of the University of Swansea in Singleton Park. Originally believed to a filled–in transfer pattern, the Marino service is actually hand-decorated with geometrically idealised flowers, flower heads and twigs with coloured seaweed foliage in bright colours, red, pink, purple and green. This unusual pattern is to be encountered on ceilings, wallpapers and in texts of the Regency period. Originally over 200 pieces, the service was inherited by Mrs. Vivian and in 1874 comprised 53 plates, 19 soup dishes, 24 small plates, 2 soup tureens, 1 salad bowl, 6 round dishes, 3 covers, 4 square dishes, 18 dishes of various sizes, 3 sauce boats, 5 stands and 2 covers: a total of only 140 pieces which had survived to that time and implying a loss of over 60 pieces had occurred (E. Morton Nance, 1942, p. 340, but it is erroneously described there as being an infilled Japan pattern service). We can but conclude that there must have been some elegant but perhaps also over-exuberant parties at the Marino ballroom in the mid-1800s resulting in the loss of so much of this fine service!! The remainder of this service has since been dispersed through the Vivian and Heneage families and a part service was dispersed in the auction sale of Lady Swansea's estate at Sketty Hall in 1937.

A second *Vivian* service was known, described as being of rare beauty and decorated with garden flowers by William Billingsley—"*the finest pieces he ever painted*"—a tea-dessert service of 46 pieces purchased from a daughter of Lewis Weston Dillwyn to whom it had once belonged. Sadly, following a disastrous fire in the Marino residence on 31st October, 1896, when much fine porcelain belonging to the Vivians was destroyed, only one plate from this service was saved—and that was because it had been sent for exhibition in Cardiff. John Vivian, according to William Turner in 1897 (W. Turner, *Ceramics of Swansea and Nantgarw*, 1897), had put together "*the finest collection of Swansea porcelain in the world much of which was destroyed in the disastrous fire*". After the fire, Vivian wrote to William Turner and said "*I am sure you will be distressed to hear that the plate at the Cardiff Exhibition is now all that remains of the most beautiful dessert set which was destroyed along with my three other dessert sets and other porcelain in the fire here*". The remnants of the fine collection of Swansea and Nantgarw porcelain amassed by John Henry Vivian passed to William Graham Vivian and then on to his nephew, Admiral Walker-Heneage—Vivian of Clyne Castle; the original collection

was impressive not only for its size but for the quality and singular rarity of its specimens. A core residue of this collection at its dispersal was acquired through auction and purchase by the Art Galleries committee of the Glynn Vivian Gallery, Swansea, and this now forms the basis of the Clyne Castle Collection there. Although a sponsor of the Swansea china works, John Henry Vivian was also associated in some way with Nantgarw as evidenced by his acquisition of two exquisite and rare Nantgarw small mugs decorated by Thomas Pardoe, one with his own initial H and the other with an initial S for his wife Sarah, probably during the period 1821–1822 during William Weston Young's proprietorship of the Nantgarw china factory. These mugs are depicted in Plates VI and VII of Bunt's pamphlet on the Exhibition of the Clyne Castle Collection at the Glynn Vivian Gallery, Swansea, in 1970 (J. Bunt, *Swansea and Nantgarw Porcelains in the Clyne Castle Collection*, 1970).

Garden Scenery service: Commissioned in 1817 it is believed by Lewis Weston Dillwyn himself, of a cruciform moulding, comprising 43 pieces originally, decorated by Thomas Baxter with garden flowers at the edge and garden foliage scenes in the centre. Mentioned by Lewis Weston Dillwyn in documents relating to a legal case between Roby and the Bevingtons, and retention of this service personally by Dillwyn on the takeover of the factory. This service still remains in the family, with Sir Michael Dillwyn Venables-Llewellyn of Llysdinam, and still has 41 surviving items, only two plates being missing from the original order; all 41 pieces surviving from this service are shown together in W. D. John (W. D. John *Swansea Porcelain*, 1958, illustration 32).

*Lord Swansea (*see *John Vivian)* service: a great admirer of the work of Henry Morris, Lord Swansea would pay £10 for each plate decorated by Henry Morris after the closure of the Swansea factory.

Marquess of Anglesey service: A combined tea and dessert service which rather unusually comprised pieces of both Swansea and Nantgarw porcelain. The pattern for this service has been reproduced in at least six other porcelain manufactories: this was apparently not unusual in the first quarter of the 19th century and it is on record that Robert Bloor, proprietor of the Derby China Works, whilst on a visit to the enamelling atelier of John Sims in Pimlico in 1820, saw there some Nantgarw plates which he very much appreciated and he immediately purchased several for copying at Derby, one of which formed the basis of the *Lord Ongley* Derby porcelain dessert service discussed earlier.

Lord Dynevor service: A tea service, "*Compleat tea set, banded rim, gold edge and lines, 6 guineas plus box at 5s and 6d*", ordered May, 1816, and also a dessert service with a wreath of wild flowers at the edge and a central bouquet, cost £88 4s, of a cruciform design, decorated by David Evans (with an impressed Swansea mark) and William Pollard (with a red stencil mark). Some items were unmarked and one or two have a rather unusual black stencil mark. Completely ungilded. Although seemingly constructed as a tea service, covered tureens are known from this service, which perhaps indicates that it also doubled as a dessert service.

Gosford Castle service*/Marquess of Exeter* service. Both services contain the same subjects of beautifully drawn botanical subjects centrally located with high quality gilded rims. Slight differences are to be seen in the gilding—the London

workshop of origin is not known. A distinguishing feature is that the *Gosford Castle* service is generally believed to be unmarked; however, one plate is known that is "Gosford Castle" labelled and also has a red stencil Swansea mark. The *Marquess of Exeter* service (first located in Burghley House, Stamford, Lincs.) was a 41—piece dessert service painted with flowers as described above.

Mandarin service: Fig. 8.1. This has been described earlier and is unique in that it has the pattern number 164 for an in-filled chinoiserie service. Illustrated in Jones and Joseph, *Swansea Porcelain*, 1988, p. 164/1.

Sir John Nicholl service: Sir John Nicholl, 1759–1838, of Merthyr Mawr, Glamorgan was a wealthy landowner, a leading judge and long-standing MP (1802–1832) for several constituencies, retiring in 1832 when the Reform Act abolished his Parliamentary seat. On the marriage of his daughter, Judy, to Charles Franks Esq., of Berkeley Square, London, in 1820, Sir John Nicholl gave them a Swansea tea service as a wedding present; this locally decorated service consists of a wreath of pink roses and a central spray of roses. Attributed to William Billingsley, some doubt must be cast on this attribution as Billingsley had left Swansea many years before the ascribed date of this service. The cups have a Nantgarw type heart shaped handle but is in fine duck-egg porcelain. Sir John was one of the original "*ten gentlemen of the county*" who stepped up and supported the second phase of production of porcelain at Nantgarw with a sum of £1000 to match that of William Weston Young's own contribution of £1100. It is therefore perhaps surprising that Sir John Nicholl did not go to Nantgarw for his wedding present unless, of course, the factory had already closed; this also raises the question as to whether there exists an as yet unidentified Nantgarw service which had been commissioned by Sir John Nicholl as confirmed patron of the factory.

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Chapter 16
Miscellaneous Named Services

Abstract A short description is made of stylised patterned services form Swansea and Nantgarw which never formally had descriptors associated with them at the factory unlike those considered hitherto, but their names now reflect their patterns and appearance with names such as gazebo, elephant and rock, parakeets, kakiemon, mandarin, fretwork bands and arrowheads, carp in a blue pool and elephant under a palm tree. These are usually locally decorated in a simple palette and several are transfer patterned or infilled services.

Keywords Nantgarw · Swansea · Stylised patterns · Transfer patterned · Mandarin pattern · Gazebo pattern · Kakiemon pattern · Parakeets pattern

Summaries of the identified named services of Nantgarw and Swansea are listed in Tables 16.1 and 16.2, respectively, also providing the type of service, e.g. dinner, dessert and tea.

16.1 Summary of Stylised Services with Descriptive Names

A particular type of service comprising transfer printed Swansea porcelains also exist which have acquired stylised descriptive names: these are perhaps at the fringe of a consideration of named services, which normally are associated with special commissions and artistry, but although these cannot be ascribed to individuals they nevertheless do bear "names"—in common with other porcelain manufactories. Examples identified include patterns described as: *Mandarin*, *Elephant & Rock*, *Parakeets*, *Kingfisher*, *Kakiemon and Gazebo*.

Similarly, transfer printed Nantgarw services with stylised descriptive names are: *Carp in a blue pool*, and *Elephant under a palm tree*.

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Table 16.1 Summary of Nantgarw porcelain named services

Service	Original order/Commission	Type
Duke of Newcastle		Dinner/ dessert
Wyndham Lewis	Wyndham Lewis	Dinner/ dessert
Duke of Cambridge	Duke of Cambridge	Dinner/ dessert
Duke of Gloucester	Prince Regent	Tea
Edwards	Edward Edmunds	Tea
Twyning	Edward Edmunds	Tea
Duncombe	Edward Edmunds	Tea
Earl of Jersey	Lord Vernon	Dessert
Marquess of Anglesey	Marquess of Anglesey	Tea
Mackintosh I	E. Priest Richards	Dessert
Mackintosh II		Dessert
Mackintosh III	Earl of Dartmouth	Tea
Lady Seaton		Dinner/ dessert
Brace		Dessert
Armorial I	Phippes	Dinner/ dessert
Armorial II	Homfray	Tea
Armorial III	Ramsay	Dessert
Armorial IV	Viscount Weymouth	Dinner/ dessert
Edmunds	Edward Edmunds	Tea
Marquess of Bute	Cardiff Castle Service	Dessert
Spencer	Earl Spencer	Dessert
Spence-Thomas	Spence-Thomas	Breakfast
Aberpergwm	Williams	Dessert
Llangattock	Lord Llangattock	Tea
Duke of Norfolk		Dinner/ dessert
Ewenny Priory		Dessert
Usk Priory	E. Priest Richards	Dessert
Williams	Sir John and Lady Williams	Dessert
Kenyon		Tea
Wilde	W. T. Wilde	Tea
Farnley Hall	Walter Hawkesworth Fawkes	Dinner/ dessert

Table 16.2 Summary of Swansea porcelain named services

Service	Original order/Commission	Type
Lysaght	John Lysaght	Dinner/ dessert
Burdett-Coutts	Thomas Coutts	Dinner/ dessert
Garden Scenery	Lewis Weston Dillwyn	Dessert
Marino	John H. Vivian	Dessert
Biddulph	Lord Biddulph	Dinner
Marquess of Anglesey	Marquess of Anglesey	Tea
Lord Dynevor	Lord Dynevor	Dinner/ dessert
Lady Seaton	Arthur Jones	Dinner/ dessert
Bosahan	Lady Seaton?	Dinner/ dessert
Gosford Castle		Dinner/ dessert
Marquess of Exeter		Dinner/ dessert
Lloyd	Thomas Lloyd	Dessert
Bevington-Gibbins	Joseph Gibbins	Dessert
Nicholl	Sir John Nicholl	Tea
Clarke		Dessert

These transfer patterns and infilled decorative patterns were sometimes accompanied by floral panels in oval, rectangular or octagonal reserves. Fairclough has identified (O. Fairclough, *Welsh Ceramics in Context II*, 2005, p. 193 and ff.) five distinct underglaze blue printed patterns on Swansea porcelain, some of which can be considered rather loosely perhaps as "*named services*" because they have acquired descriptive pattern names; Nos 1 and 5 are illustrated in Jones and Joseph (*Swansea Porcelain*, 1988) and these are:

1. *Chinese cell*, scroll and key border with pendant gilt foliage (pattern 193);
2. The "*Tower and Castle*" pattern described above;
3. The *Lady Seaton* pattern described above;
4. The *Elephant & Rock* pattern described above;
5. *Fretwork bands and arrowheads*, used with painted flower sprigs.

There are many isolated high qualities locally decorated and London-decorated Nantgarw and Swansea pieces in existence which clearly at some stage were probably part of significant services and commissions—for example a Nantgarw square dish from a dessert service in a rare *rose pompadour* ground colour and a muffin dish from a breakfast service with a rare apple green ground. (see for

example, W. D. John et al., *Nantgarw Porcelain*, 1948; W. D. John, *Swansea Porcelain*,1958; Jones & Joseph, *Swansea Porcelain*, 1988) These are just two examples of very high quality Nantgarw and Swansea porcelains which would normally have been expected to be associated with named commissions, but so far their origin has remained unidentified, probably because of the dispersal of part services or remnants whose total composition may have assisted somewhat in their attribution.

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Chapter 17
Conclusions

Abstract A summary is undertaken here of the conclusions drawn from this research and its holistic approach to considering together both the scientific and historical aspects of porcelain manufacture at Swansea and Nantgarw. Some services which have been described in earlier texts but for which a trace can no longer be found are described.

Keywords Swansea · Nantgarw · Lost services · Forensic trail · Duchess of richmond · Lady seaton

In this study, an attempt has been made to gather together the attribution of *named services* to existing porcelains from the Swansea and Nantgarw factories and to correlate the scientific and historical information in a holistic approach—a task that has been acknowledged as being difficult for several reasons:

1. The prime factor which causes difficulty in this quest which does not occur in other contemporary porcelain manufactories, such as Worcester, Spode and Derby, is the total absence of official documentation and record relating to set patterns, order books and commissions received by the factories. In several cases it has been possible to recognise special orders that have been placed with the china works from the correspondence and diaries of key personnel such as Lewis Weston Dillwyn, Samuel Walker, William Billingsley and William Young, but often this is tantalisingly incomplete. By the time that the first account of the Swansea and Nantgarw china works was attempted by William Turner from his personal research in the late 1880s, resulting in his classic text on the two factories published in 1897, the pattern books and factory workbooks, if they ever existed, were already missing. Turner had the advantage in being able to interview several survivors from the factories, and he could also access eyewitness evidence and opinion from accounts in John Haslem's book (J. Haslem, *The Old Derby China Factory*, 1876; J. Haslem, *A Catalogue of China*, 1879), which was published in the 1870s in a remit concerning porcelain manufacture generally and especially a gathering of

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information about the Derby factory. However, much of the evidence is essentially apocryphal and now unverifiable: a classic example is the idea that John Rose of Coalport purchased the Swansea pattern books and recipes for the famed duck-egg porcelain body along with the moulds from Swansea and Nantgarw in the early 1820s and that he immediately made and sold Coalport porcelain in these forms decorated by Swansea artists such as Henry Morris. Truly, it is well known that Morris did decorate porcelain stock left in the white and that he did paint on Coalport and Copeland-Spode porcelains in the years following closure of the Swansea factory from 1823 onwards, but there is no evidence at all that the Coalport factory adopted the Swansea body after 1823 or that Rose possessed the Swansea and Nantgarw moulds. The situation is complicated by the fact that William Billingsley left Nantgarw for Coalport and he worked there until he died in 1828: the nature of his work at Coalport has never been forthcoming and there is much conjecture about his role there—for example, did he advise on the manufacture of a duck-egg translucent porcelain body and did he actually paint any porcelain whilst there, or perhaps he acted in an advisory capacity only? There have been several hypotheses advanced that Billingsley would naturally have taken recipes and moulds with him to Coalport upon departing Nantgarw in or around 1819. Porcelain manufacture at Nantgarw ceased in 1819 with Billingsley's departure, probably because the expertise and recipe formulations for composition and firing were no longer available after this date.

2. The forensic audit trail of a service which has been ordered and delivered for a particular person is often thereafter lost after almost two centuries passage of time, unless there are also records of gifts or an inheritance to family members through a bequest. Some important named services have nevertheless been unambiguously identified through this procedure, including those of *Burdett-Coutts*, *Duke of Cambridge* and *Mackintosh 1*. In very few cases do the original services actually still remain with the families who initially ordered them directly from the Swansea or Nantgarw factories or through their London retail outlets; exceptions to this are the *Garden Scenery*, *Edwards* and *Bevington-Gibbins* services remnants of which are still in the possession of the families concerned, namely the Dillwyn-Venables-Llewellyn, Edwards and Gibbins descendants.
3. The nomenclature by acquisition title accorded to a service is factually correct in that unless there is documentary knowledge and forensic evidence that a particular service has been owned in the same family since commissioning of the order then current ownership is used to give the appropriate nomenclature of the provenance; because of the absence of the factory order books, only the personal records of key personnel can shed some light on original orders placed there. These occurrences are therefore necessarily few and far between: The Swansea *Garden Scenery* dessert service still in the possession of the Dillwyn-Venables-Llewellyn family since its commissioning by Lewis Weston Dillwyn and retention at the dispersal of the factory's assets in 1819, and featuring in legal documents of the sale and transfer of the factory ownership, is a classic

example of such an indubitable provenance that is unfortunately rather rare. Nomenclature by acquisition is increasing as modern auction sales offer services or part services for sale in the dispersal of effects: a very recent example is the desirable *Brace*-generic, *Duchess of Richmond* Nantgarw part dessert service of some 20 pieces which appeared at an auction of some of the contents of Goodwood House in March, 2015 and was sold for £20,000—described rather disparagingly in a local paper covering the story of the sale as "*old crockery being acquired by a delighted purchaser*". In some cases there are eyewitness accounts of Swansea and Nantgarw services which have been documented by earlier writers and historians of the factories but which seem to have now disappeared: a particular example is the so-called *Bosahan* service of Swansea porcelain in the possession of Lady Seaton's descendants as recorded by Morton Nance in 1942 (The Pottery and Porcelain of Swansea and Nantgarw, 1942), which was purchased by Lady Seaton it is assumed in or around 1817 and being verified as an early example of Henry Morris' decorative work with garden and wild flowers in coloured enamels. Nowadays, the *Lady Seaton* Swansea service pieces which occasionally appear at auction are of the more usual blue and white applied transfer decoration—not to be confused with the eponymous Nantgarw service, also in blue and white, but hand-painted.

4. There are tantalising records and statements about the purchase of Swansea and Nantgarw services by named people, which unfortunately often lack the detailed information to positively identify absolutely and unambiguously the particular service involved, even when individual artists are named to execute the commission. Some of these are listed below:

    1. The final purchasers of porcelain items and services at the last Swansea auction dispersal sale: Lord Dynevor, Sir Christopher and Lady Mary Cole, Sir John Morris, Mr. J. H. Vivian, Mr. Lewis Dillwyn, Lord Ilchester, Sir Watkin Williams Wynn (who arrived late by coach and was vociferously disappointed at being unable to acquire a complete service of Swansea porcelain).
    2. Princess Mary and Princess Charlotte, daughters of King George IV, ordered Nantgarw dejeuner services from Mortlock's in July, 1816.
    3. Lord Swansea, a Billingsley dessert service (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CVIIC).
    4. F. W. Gibbins, a David Evans decorated service (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CXII).
    5. Lady Seaton, a 40-piece dessert service decorated by Henry Morris (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CXIV), and cited above.
    6. Mrs Moore-Gwyn, a dessert service decorated by William Pollard (E. Morton Nance, plate CXXVIIID).
    7. Lewis Dillwyn, a dessert service decorated by William Weston Young.

8. Ivor Vachell, a dessert service decorated by George Beddow with sepia monochrome landscapes (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CXLVa and B).
9. Abel Anthony Gower, a Swansea dessert service (p335, E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, p. 335) with green urns similar to the Prince Regent Nantgarw tea service with his coat of arms and motto "*Frangis non flectes*".
10. Lady Swansea, Sketty Hall, a tea service with green vine decoration (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CXLIXE and F).
11. John Mortlock, a breakfast service, with French sprig design (E. Morton Nance *The Pottery and Porcelain of Swansea and Nantgarw,* 1942, plate CLIC).

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J. Haslem, *The Old Derby China Factory,* George Bell, London, 1876.
J. Haslem, *A Catalogue of China*, R. Keene, Derby, 1879.
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Chapter 18
The Discovery of a Long Lost Nantgarw Dinner-Dessert Service

Abstract A first introduction to the author's personal quest to discover a "lost" Nantgarw dinner/dessert service first mentioned in a text in 1948 and not thereafter: a successful outcome to this detective work is reported and further details of this Farnley Hall service and its discovery are recounted in an Appendix to the text.

Keywords Nantgarw service · Lost service · Farnley hall · Dr. William john · Dinner/dessert service

A tantalising reference has been made by Dr. John (*Nantgarw Porcelain*, 1948) to a large Nantgarw combined dinner-dessert service at Farnley Hall, which he seemingly had not seen and whose pattern he had not recorded, but which obviously was still in existence prior to 1948. This ancient manor house situated near Otley in Yorkshire is the seat of the Fawkes family, whose ancestral relative was Guido Fawkes, conspirator in the Gunpowder Plot and the Catesby Conspiracy to demolish Parliament and to assassinate King James I on November 5th, 1605. Unfortunately, no mention has been made subsequently about this service but the author decided to follow up the tentative statement made by Dr. John and search for this lost service—believing that perhaps somewhere there could be a link to what could be an an impressive and hitherto unrecognised named Nantgarw service. The recent discovery of the long lost, highly important and documentary *Lord Ongley* service, modelled on Nantgarw plates decorated with figures by James Plant, by Robert Bloor at Derby and mentioned earlier, at Muncaster Castle in Cumbria provides an analogous case.

W. D. John states (*Nantgarw Porcelain,* p. 81. 1948) that:

> …. in addition, there are large combined dinner-dessert services such as the one at Farnley Hall in Yorkshire in which the number of plates may reach a hundred with a proportionally greater number of dishes and tureens.

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The first major setback in research into the location of this service proved to be the existence of two Farnley Halls in Yorkshire: one in Farnley, near Otley, and the other near Leeds. Diligent research by the author favoured the former as a potential source of the lost Nantgarw service on account of the national social standing of its owner in the late 18th and early 19th Centuries—Walter Ramsden Hawkesworth Fawkes was a prominent landowner, politician and admirer of the arts, who possessed a London home and who entertained and established a lifelong friendship with J. M. W. Turner, the celebrated artist and watercolourist, who spent several months annually for over 25 years at Farnley Hall.

In 1786 Francis Fawkes died and William Hawkesworth inherited Farnley Hall, adding the new surname of Fawkes, whose son, Walter Ramsden Hawkesworth Fawkes (born 1769, died 1825) assumed the lordship of the manor in 1792 and rose to become an MP for Yorkshire in 1806 and High Sheriff for the County in 1823. He was a wealthy and educated man, a patron of the arts and was a confidant and friend of J. M. W. Turner, who spent much time in painting at Farnley Hall—at one time Hawkesworth Fawkes owned 250 Turner watercolours and six Turner oil paintings. It is therefore considered quite likely that, with his strong London connections and social standing, Walter Ramsden Hawkesworth Fawkes would have had knowledge of the Nantgarw porcelain sensation sweeping London in the period 1817–1819 and that he would have been in a good position to commission an important and very large Nantgarw service from Mortlock's.

In March, 2016, the author had occasion to visit Farnley Hall at the invitation of Mr Guy Fawkes, the current owner and descendant of Walter Ramsden Hawkesworth Fawkes, to search for the "missing" Nantgarw service: in a cellar, there turned up almost 40 pieces of exquisite London-decorated Nantgarw porcelain, mainly plates and several very large platters with some small tureen stands and deep soup dishes, all with the typical Nantgarw floral moulding and with central bouquets of flowers and vignettes of fruit, birds and flowers in an identical generic pattern to the famous *Brace* service mentioned earlier and also the *Brace*-type *Duchess of Richmond* service. Some items of the Farnley Hall service have suffered damage but the beauty of this service can still be appreciated, as indicated in the small and perfect Nantgarw tureen stand shown in Fig. 18.1 and the two dessert plates shown in Fig. 18.2. Clearly, the service has suffered from domestic usage and is now significantly depleted from its original size, which Dr. John had reported as being significantly over a hundred pieces—the source of Dr. John's information on the composition and size of the Farnley Hall Nantgarw service is unknown.

Fig. 18.1 Superb small tureen stand of Nantgarw porcelain, London-decorated, in the manner of the generic *Brace* service, with fruit, flowers and birds in vignettes and typical Nantgarw moulding at the edge, marked impressed NANT-GARW C. W. Located and identified by the author in the cellars of Farnley Hall, Otley, North Yorkshire, in March 2016—the remains of this once extensive service of over a hundred pieces which was probably purchased from Mortlock's by Walter Ramsden Hawkesworth Fawkes in 1817–1819, now amount to approximately 40 pieces, including some very substantial and large platters. Reproduced with permission of Guy Fawkes Esq., Farnley Hall, North Yorkshire

Fig. 18.2 Two dessert plates from the *Farnley Hall* service, en-suite with the tureen stand shown in Fig. 18.1, impressed NANT-GARW C. W., superbly decorated in London with dentil edge gilding. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

Some further pictures of this important service are shown in Figs. 18.3, 18.4, 18.5 and 18.6: these can be described as follows. A pair of deep soup dishes are shown in Fig. 18.3, with symmetric fivefold cruciform moulding, dentil edge gilding and central floral spray with five border vignettes of flower groups. Figure 18.4 shows a pair of sauce tureen stands with a symmetric sixfold cruciform moulding beautifully decorated with a central floral group and six border vignettes, five of flowers and one with a bird. Figure 18.5 shows a large rectangular meat platter with sixfold cruciform moulding decorated with five border vignettes of floral sprays and one with a bird and a central bouquet of flowers. Figure 18.6 shows the underside of the rectangular meat platter in Fig. 18.5 with a group of mosquitoes painted on the edge border to cover some surface blemishes. These are representative examples of the Farnley Hall service, which comprises 37 pieces in total surviving from the original of over 100 pieces specified by Dr. John; there are no surviving examples of soup tureens, vegetable dishes or serving dishes, although there are three types and sizes of rectangular platters, two of which are very large, being some 36 × 27 cm. There are also two very large, circular plates which probably doubled as fruit or desert comports, measuring 31 cm in diameter. In Appendix 6, a survey is made of the measurements and composition of the surviving *Farnley Hall* Nantgarw service. Several other features of interest with regard to this service can be stated here:

- The flower enamelling exhibit the characteristic iridescence of a London-decorated Nantgarw porcelain service, along with the typical applied dentil-edged gilding.
- The typical Nantgarw floral embossed edge moulding is seen throughout, but is much more heavily potted in the larger rectangular meat platters; this significantly affects the translucency that is so characteristic of the factory output and now this is considerably reduced.
- In the heavier potted pieces, the clarity and perfection of the Nantgarw glaze is severely compromised and now clear evidence of unusual surface crazing is noted in parts.
- The marking of the items is varied: all the soup dishes and dinner/dessert plates are marked with the standard “NANT-GARW C. W.” impressed mark. One of the three sauce boat/tureen stands is unmarked and one marked item has an additional impressed “1” mark. All of the small, large and very large rectangular platters and also the two very large circular dishes are completely unmarked except for the rectangular stands which are graded according to size, being marked with impressed “2” and “7”, “3” and “7” and “4” and “7” on the base, respectively, from small to medium to large sizes. The two very large circular plates are unmarked except for an impressed “7” on the base.

Fig. 18.3 Pair of deep soup dishes from the *Farnley Hall* service of Nantgarw porcelain, impressed NANT-GARW C. W., superbly decorated in London with dentil edge gilding. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

Fig. 18.4 Pair of tureen/sauce boat stands from the *Farnley Hall* service of Nantgarw porcelain, impressed NANT-GARW C. W., superbly decorated in London with dentil edge gilding. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

Fig. 18.5 Large rectangular meat platter from the *Farnley Hall* service of Nantgarw porcelain, unmarked except for an impressed 4 and 7, superbly decorated in London with dentil edge gilding. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

Fig. 18.6 Reverse of large meat platter shown in Fig. 18.5 from the *Farnley Hall* service of Nantgarw porcelain, unmarked except for an impressed 4 and 7, superbly decorated in London with dentil edge gilding, showing three mosquitoes placed to cover surface blemishes. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

This demonstrates quite clearly the value in keeping a fully marked, patterned specimen, even if damaged, along with others that are so unmarked, since in this case it would be quite easy to negate the larger items from a Nantgarw attribution because of their relatively poor translucency, glaze crazing and lack of finesse in the edge moulding.

It was a highlight of this author's research for this book to actually track down this Nantgarw named service, hereafter known as the *Farnley Hall* or *Hawkesworth Fawkes* service, which exhibited generally the characteristic fine moulding, floral decoration and gilt dentil edging so typifying the London enamelling workshops engaged by Mortlock's for their commissions in Regency England. It is a matter for conjecture of course, but it is quite possible that Britain's best-loved artist (J. M. W. Turner) actually dined off Britain's finest porcelain (Nantgarw) in the form of this service at Farnley Hall during the many months he spent there each year for 25 years as a house guest of his friend, Walter Ramsden Hawkesworth Fawkes, who died in 1825. Figure 18.7 is an oil on canvas painting by J. R. Wildman depicting J. M. W. Turner and W. R. Hawkesworth Fawkes enjoying each other's company in the grounds of Farnley Hall in 1820–1824.

Fig. 18.7 The celebrated artist J. M. W. Turner and Walter Ramsden Hawkesworth Fawkes together in the grounds of Farnley Hall, Otley, Yorkshire, where the "lost" *Farnley Hall* Nantgarw service has recently been located. Painted by John R. Wildman in 1820–1824, now in the Yale Centre for British Art/Paul Mellon Collection

Reference

W. D. John, *Nantgarw Porcelain*, Ceramic Book Co., Newport, 1948.

Chapter 19
The Attribution of Unknown Porcelain to Swansea or Nantgarw: A Protocol

Abstract In this chapter the author has proposed a protocol for the attribution of porcelain of unknown origins to either Swansea or Nantagrw based upon several characteristics described in the text, including shape, translucency, texture, surface glaze, moulding, gilding, measurements and decoration. There followed ten case studies carried out as test pieces to evaluate the protocol from which several definite Swansea and Nantgarw pieces can be identified and also several probables and possibles. This should act as a reasonable exercise for the reader to apply for the identification of the products of these two factories, much of which was unmarked.

Keywords Swansea · Nantgarw · Identification · Translucency · Shapes · Case studies · Unknown porcelains

In many cases, examples of superb pieces of porcelain tableware, exquisitely painted and gilded by accomplished artists, are offered for sale without any knowledge of their historical provenancing, yet it is to be suspected that their quality alone would have been indicative that they once formed part of desirable named services, probably arising from special commissions—the Farnley Hall porcelain service being one of these, another being the unnamed Swansea glassy porcelain tea service. Sadly, in most cases, even when commissions have been indicated in the work notes, the diaries of Dillwyn and Young are often not sufficiently detailed descriptively to facilitate the unambiguous identification of these individual orders with extant quality porcelain items which will have now been dispersed over time. A particularly important example of an early Swansea glassy porcelain tea service is described and fully illustrated later, photographs of which taken prior to its dispersal and break-up as individual items proved to be of a significant scientific interest in the confirmation of the writing of William Billingsley's script on porcelain, since every piece was signed with his characteristic Swansea cursive script mark and accompanied with his descriptors of the scenes.

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In the context of the current study, therefore, it is apparent that we should be able to suggest a protocol for the identification of genuine Swansea and Nantgarw porcelains from hitherto unknown and unmarked examples: this process should follow the criteria now proposed here:

1. Examination of the translucency by transmitted light: the highest quality Swansea porcelain has the characteristic duck-egg colour superimposed upon a very highly translucent body as shown earlier whereas the Nantgarw porcelain is even more translucent with a pure white background—under strong illumination conditions, Nantgarw porcelain is so clear that writing can be read through it from the reverse side. Swansea trident wares are very different in appearance with a grittier pigskin texture, and have a rather muddier translucency often accompanied with a pink tinge.
2. The finer potted artefacts exhibit the pressed floral mouldings through the paste and these can be viewed from the reverse side.
3. The shapes of many of the porcelain items have been well researched and matched with extant marked pieces but it should be borne in mind that this in itself is not formulaic and exclusive: the measurements given, especially in Jones and Joseph (*Swansea Porcelain*, 1988), are an additional aid to identification: it seems at first sight that these measurements could be an infallible guide to the attribution of unknown porcelain items to Swansea or Nantgarw origin but an analysis indicates that this may not be so irrefutable as it would appear (see later). For coffee and tea cups, the shapes of the handles are very distinctive—the Nantgarw heart shaped handle and the Swansea triply curved ogee handle with characteristic top "kick", which almost meets the lip of the cup are particularly important in this respect for early screening of possible genuine items.
4. The applied enamelling decoration which can often be readily assigned to known Swansea and Nantgarw artists, especially when locally decorated, is another clue—one must still have reserve judgement here, of course, in view of the free movement of artists particularly after closure of the two factories in the early 1820s.
5. The quality of the gilding and reference to albums and collections such as those of John (*Nantgarw Porcelain*, 1948; *Swansea Porcelain*, 1958; *William Billingsley*, 1968), John et al. (*Nantgarw Porcelain Album*, 1975) and Jones & Joseph (*Swansea Porcelain*, 1988) can frequently identify matching patterns in existing named services or decorative items.
6. The glaze is very white and does not exhibit crazing or cracking, unlike Bloor Derby or the same period.

After these criteria have been applied it should be possible to identify unknown or suspected porcelains as potentially Swansea and Nantgarw; Stuart Brown has made a case for the establishment of criteria for the identification specifically of Nantgarw cups and saucers from handle shapes, design, body and decoration (S. Brown 2016). As test cases of our protocol proposed here, we shall now cite some examples to illustrate this process of identification:

Case 1:
Coffee cup: London shape (Fig. 19.1), beautiful floral gilding inside lip and band of gilt flowers on outside. Has characteristic duck-egg translucency, Fig. 18.4, with overall a very clear translucent light transmission in which the inner decoration is clearly seen when viewed from the outer surface of the cup. The gilding matches a pattern already established as a Swansea pattern in Jones and Joseph (*Swansea Porcelain*, 1988) and the actual measurements of the cup also closely match the range of those given in the same text. The cup is, hence, a good match for one shown in the same book and the characteristic "kick" given to the ogee handle at the top lip of the cup is also present. All evidence therefore, thus far, confirms a Swansea attribution except that a pattern number of 877, clearly seen on the base of the cup in Fig. 19.2 exceeds the highest number quoted in Jones and Joseph, namely 706, and furthermore is applied in gold enamel without a stencilled factory mark! This is a curious occurrence and does mean that, despite the other supporting evidence, a note of caution needs to be exercised. However, Jones and Joseph state that at the time of their publication in 1988 only some 10% estimated of Swansea set patterns had so far been logged with associated pattern numbers, many not having pattern numbers at all alongside the factory marks, and sets exist where not all the pieces were so numbered. It is therefore quite possible that this cup now extends that range significantly, in which case it is an important example, but some doubt must still prevail upon its attribution. *Verdict*: *Possible Swansea attribution*.

Fig. 19.1 London shaped coffee cup, whose characteristics identify it as possibly Swansea porcelain, unmarked, with superb gilding and translucency. *Private Collection*

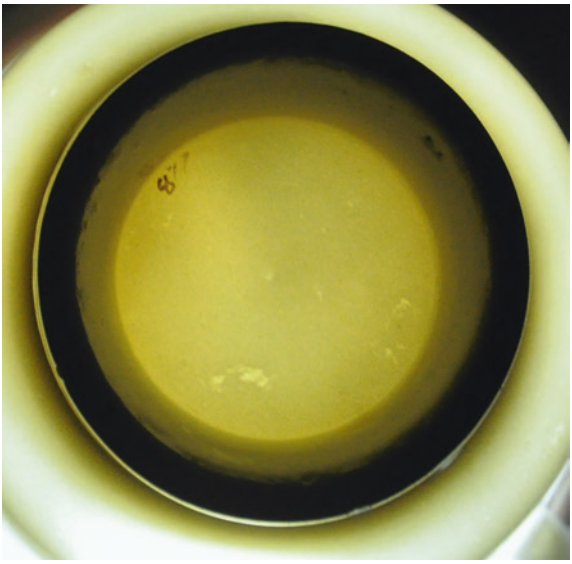

Fig. 19.2 Tea cup from Fig. 19.1 shown in transmitted light exhibiting the characteristic Swansea duck-egg colouration and the pattern number 877 placed near the footrim. *Private Collection*

Case 2:
Spill vase, trumpet shape, typical beautiful and clear duck-egg blue-green translucency, Figs. 19.3 and 19.4, depicting a dancing Chinaman against an exotic tropical background with tendrils of gilt seaweed. An unusual shape, which matches Swansea characteristics and measurements as given in Jones and Joseph (*Swansea Porcelain*, 1988). Jones and Joseph (*Swansea Porcelain*, 1988, Colour Plate 4, p. 223) show a rustic scene of a farmworker in a rural landscape, where the colours, faded washed background and stance of the leading figure have distinct similarities to those shown on the spill vase here: with the additional decorative application of tendrils of seaweed, a Billingsley forte, this strongly suggests an attribution to Swansea and to Billingsley himself. Therefore, the finest Swansea duck-egg porcelain, probably locally decorated by William Billingsley. *Verdict*: *Definite Swansea attribution*.

Fig. 19.3 Swansea porcelain spill vase of rare pattern, showing a dancing Chinaman in a background exotic landscape of palm trees placed amid tendrils of gilt seaweed. *Private Collection*

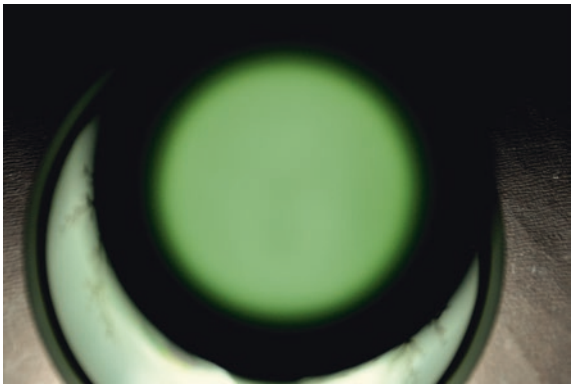

Fig. 19.4 Swansea spill vase from Fig. 19.3 shown in transmitted light exhibiting superb *blue-green* duck-egg colouration. *Private Collection*

Case 3:
Spill vase, trumpet shape, clear translucency, shape and measurements, Figs. 19.5 and 19.6, match those of a spill vase from a known marked Nantgarw service in Blickling Hall. Blickling Hall is the 16th century ancestral home of Thomas Boleyn and birthplace of Anne Boleyn, Queen of King Henry VIII, whose headless ghost is said to roam its corridors at night. The Nantgarw plates in the Blickling Hall service are impressed but no mark exists, of course, on the spill vase from the same service; this accentuates the need to preserve marked items along with the unmarked for attribution purposes especially where pattern numbers are absent, as for the case of Nantgarw porcelain. The decoration is clearly London inspired with a trellis of linked roses on a background of dark green lozenges and a hatched gilding which correlates with other London-decorated Nantgarw pieces illustrated in the albums and works of W. D. John (*Nantgarw Porcelain*, 1948; *Swansea Porcelain*, 1958; *William Billingsley*, 1968; John et al., *Nantgarw Porcelain Album*, 1975). *Verdict*: *Definite Nantgarw attribution*.

Fig. 19.5 Spill vase with very clear translucency typical of the finest Nantgarw porcelain, gilding patterns and floral decoration match those on other Nantgarw pieces, and matching exactly a spill vase which is confirmed as Nantgarw from its presence in a marked service. *Private Collection*

Fig. 19.6 Spill vase from Fig. 19.5 viewed in transmitted light showing exceptional translucency of Nantgarw porcelain. *Private Collection*

Case 4:
Large campana shaped vase, height 28 cm, diameter at top 22 cm, with gadrooned base and acanthus leaf edged rim and a pair of twin satyr's head handles, is shown in Fig. 19.7. This matches exactly the shape of one illustrated in Jones and Joseph *(Swansea Porcelain*, 1988, p. 122), which is shown there undecorated and in white porcelain only. This example shown here in Fig. 19.7, is beautifully decorated with a basket of flowers and a wreath of flowers at the base in the manner of Henry Morris, who applied a similar decoration to the *Lysaght* service. The translucency is a beautiful duck-egg colour as expected. *Verdict*: *Definite Swansea attribution.*

Fig. 19.7 Swansea porcelain, campana shaped vase, with duck-egg colouration in transmitted light, floral groups in a basket very similar to those of the *Burdett-Coutts and Lysaght* services: if locally decorated, this probably points to Henry Morris as the painter—but a London decoration may be favoured in this case because of the acquisition at a similar time of the London-decorated *Farnley Hall* Nantgarw service. In Farnley Hall, Otley, North Yorkshire. Reproduced with permission of Guy Fawkes Esq., Farnley Hall

Case 5:
A fine probably London-decorated spill vase with superb floral group, whose measurements and shape match the range of existing Nantgarw vases in albums, but without the mask heads—which were applied as additions after the original moulding had taken place, with clear Nantgarw translucency, Figs. 19.8 and 19.9. *Verdict*: *Definite Nantgarw attribution.*

Fig. 19.8 Spill vase, identified as Nantgarw porcelain from its shape and measurement. *Private Collection*

Fig. 19.9 Spill vase shown in Fig. 19.8 demonstrated to be Nantgarw porcelain by superb translucency in transmitted light. *Private Collection*

Case 6:
A very simply decorated coffee can, comprising a white background with a narrow emerald green band below the rim: anticipated translucency excellent, measurements conform to those of Nantgarw, handle shape Nantgarw, base Nantgarw, decoration and gilding no assistance here, probably locally decorated, Fig. 19.10. *Verdict*: *Definite Nantgarw attribution.*

Fig. 19.10 Nantgarw coffee can with simple emerald *green* band decoration. *Private Collection*

Case 7:
A beautiful mug decorated with a band of garden flowers superbly executed locally probably by Henry Morris, finely gilded, duck-egg translucency, dimensions characteristic of Swansea, typical "kick" handle, Fig. 19.11. *Verdict*: *Probable Swansea attribution.*

Fig. 19.11 Swansea large mug with superb floral decoration. *Private Collection*

Case 8:
A beautiful centre comport, very pale duck-egg translucency, with groups of full-blown roses and rosebuds scattered randomly around both the inner and outer surfaces, very Swansea-like appearance but the shape is not recognisable as that of Swansea. Also, the glaze exhibits severe crazing, characteristic of a Coalport product of the early 1820s. The decoration is very typical of Billingsley and the shape does in fact match exactly that of a Nantgarw central comport as depicted in the *Nantgarw Porcelain Album* (John, Coombes and Coombes, 1975, Colour Plate 25: The Theodore and Mary Ellis Collection). The conclusion must therefore be that this item was a Nantgarw shape made and decorated probably by Billingsley himself at Coalport—which makes it a rare item indeed and highly important in that it gives credibility to the notion that John Rose actually did use Nantgarw moulds acquired at the sale of the factory goods in 1823 at his Coalport china works, which has for long been a point of conjecture with ceramic art historians. Figures 19.12 and 19.13; *Verdict: not Swansea or Nantgarw, despite the design and decoration but probably Coalport.*

Fig. 19.12 Comport with Billingsley roses and rosebud decoration: probably Nantgarw *Private Collection*

Fig. 19.13 Comport in Fig. 19.12 showing inner decoration to the bowl. *Private Collection*

Case 9:
A beautifully crafted cabinet cup and saucer, Fig. 19.14, decorated with the typical Welsh factory pink three-rose pattern and high quality gilding: the cup has a bulbous shape with a pedestal base, an everted rim with a collar of embossed leaves alternating with small beads. The handle is scrolled and curved, closed with a foliate moulding above the rim of the cup and has a serrated thumb spur; the base of the handle has an embossed acanthus leaf terminal. The translucency as shown in Fig. 19.15 is of the finest duck-egg porcelain. The cup is illustrated as type 4 in Jones and Joseph (*Swansea Porcelain*, 1988, p. 138) and the saucer as type 4 on p. 147 of the same citation; the measurements are—cup height 85 mm, diameter 88 mm, saucer height 28 mm, diameter 146 mm. *Verdict: Swansea porcelain definitely.*

Fig. 19.14 Cabinet cup and saucer with superb three-rose decoration and gilding; verified as Swansea porcelain according to the criteria and protocol established here. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Fig. 19.15 Translucency and verification of Swansea duck-egg porcelain for cabinet cup shown in Fig. 19.14. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Case 10:
A small tankard or probably a christening mug, of dimensions 70 mm (base diameter) and 83 mm (top rim diameter) and height 81 mm, of tapering body and a thumb spur on the handle with a beautiful duck-egg translucency is shown in Fig. 19.16. The decoration is very simply applied, comprising a single spray of wild flowers on each side, very freely painted. This shape does not feature in Jones and Joseph (*Swansea Porcelain*: *Set Patterns and Decoration*, 1988) but otherwise satisfies all the criteria for a successful attribution to the Swansea factory. *Verdict: Very Possibly Swansea porcelain*.

Fig. 19.16 Tapered small mug with simple floral spray decoration, devoid of gilding and with a rim picked out in *blue* enamel, showing beautiful duck-egg translucency characteristic of the finest Swansea porcelain. Very possible attribution to Swansea, in which case it represents a novel shape and type with probable local decoration. From the private collection of Dr. Roger Phillips

In this way it can be seen how the application of the criteria enumerated above can assist in the attribution of porcelain to a Swansea or Nantgarw origin. In other cases, unknown pieces of porcelain which have been labelled fortuitously or optimistically as Swansea or Nantgarw have failed to pass in one or more of these criteria and have not been included here—generally failing in their translucency, transmitted light colouration, quality of decoration and gilding, curious shape and imprecise measurements. It seems therefore that the five criteria proposed above do operate effectively in a first-pass screening or filtering mode for porcelain of questionable origin and that they do eventually aid in potential attribution of an unknown piece to a Swansea or Nantgarw source, if applied correctly. However, one should still be aware of pieces of porcelain which seem to fail in attribution merely because of mismatched shapes or marks when the other criteria are

acceptable and in order: we have highlighted several of these already in passing, such as the strange puce Nantgarw script marks on the *Aberpergwm* service and the curiously shaped but apparently genuine Swansea platter (Fig. 11.1) with the recorded script mark (Fig. 11.2).

19.1 Measurements of Swansea and Nantgarw Porcelains

It has always been accepted that the size of individual items which comprise a porcelain service is a critical dimensional factor for an assessment of the assignment and the possible attribution of unknown or unmarked pieces and therefore these must feature in any protocol assessment of porcelain of unknown attribution. In many porcelain texts, therefore, approximate measurements are given which are designed to assist the reader and researcher in this respect in the identification of genuine and otherwise unmarked pieces. However, it should be remembered that each piece is hand assembled from factory moulds, which may not themselves be of a precise measurement and made within a precisely defined tolerance, so that a range of measurements would be more appropriately acceptable scientifically. This is not immediately appreciated and as an example of this practice, a survey has been made of the measurements of Swansea service items accumulated by Jones and Joseph (*Swansea Porcelain*, 1988) to illustrate the type of variation that is to be expected for tea cups, coffee cups, breakfast cups and saucers in generic and documentary tea services. Visually, tea cups are shallower than the taller coffee cups and have larger diameter bowls whereas breakfast cups are even larger than conventional tea cups—the saucers for tea cups and coffee cups are also proportionately smaller than those provided for the breakfast cups; coffee services were not made per se but combined tea and coffee services comprised trios consisting of a tea cup, coffee cup and a saucer for use with both. Coffee cans were much rarer items for both Nantgarw and Swansea and could be found in trios, replacing the coffee cups. The cups and saucers found in special dejeuner or cabaret sets are generally smaller, even more rare, and of a completely different design and will not be considered primarily here.

Swansea Cups and Saucers

Several types of Swansea cups can be identified from illustrations, catalogues and albums of porcelain services and part services and generally these can be divided into different categories according to their overall shape, handle design, footrim characteristics, porcelain mouldings and lip curvature; of these, the most distinctive must certainly be the handle design, of which descriptors can be as follows—kidney or heart-shaped, loop handle with or without cutback curve, London shape with a pronounced "kick" in the upper and lower ogee handle curvature, simple strap handle, double kick handle and ring loop handle. In collating measurements of the cups and saucers for this exercise, the most striking conclusion is that different designs altered the measurements of the main cup body significantly. Hence, the following data can be elucidated:

Tea cups: 15 different types, height range 47–60 mm, diameter range 83–98 mm; average dimensions, height 55 ± 7 mm, diameter 91 ± 6 mm.
Coffee cups: 12 different types, height range 50–70 mm, diameter range 64–82 mm; average dimensions, height 63 ± 7 mm, diameter 77 ± 3 mm.
Coffee cans: 3 different types, height range 60–63 mm, diameter range 63–70 mm; average dimensions, height 62 ± 2 mm, diameter 67 ± 4 mm.
Breakfast cups: 11 different types, height range 55–89 mm, diameter range 101–121 mm; average dimensions, height 65 ± 8 mm, diameter 111 ± 4 mm.

The saucers which accompany these cups have measurements as follows:

*Tea/coffee saucer*s: 6 different types, height range 24–31 mm, diameter range 142–150 mm; average dimensions, height 27 ± 3 mm, diameter 147 ± 4 mm.
Breakfast saucers: 4 different types, height range 26–34 mm, diameter range 160–172 mm; average dimensions, height 29 ± 3 mm, diameter 166 ± 5 mm.

From these data it is possible to conclude that of the total number of 51 different items under discussion only certain combinations would normally be expected to occur in any particular service, but the error bars on the average measurements would still be sufficiently large to preclude any definitive assignment being made absolutely on measurement alone, but that these should be considered in any analysis or interrogation of an unknown item that also included assessment of shape, handle, footrim, moulding, gilding, decoration and translucency as associated parameters. Clearly, if an unknown piece was under investigation and had all the other attributes expected for a Swansea cup and saucer, but whose measurements lay significantly outside the margin of error in these measurements then question must be addressed as to its correct placement. The key factor in this analysis has been the seminal study and compilation by Jones and Joseph in their book (*Swansea Porcelain*, 1988) which set out to list the recorded shapes, decorations and pattern numbers then known, along with accurate measurements of the pieces discussed. As they pointed out in the foreword to their text, this survey was accomplished predominantly from the extensive collection of Welsh porcelain accumulated by Sir Leslie Joseph during his lifetime and form recorded measurements made on these pieces, all of which were considered genuine examples.

Swansea Plates
The situation applying to the measurements of plates is equally complicated and no fewer than 17 different types of dessert plate and 5 types of dinner plate can be identified in Jones and Joseph (*Swansea Porcelain*, 1988). A summary of the relevant measurements is given as follows:

Dessert plates: 17 different types, height range 19–39 mm, diameter range 176–234 mm; average dimensions, height 29 ± 4 mm, diameter 208 ± 11 mm.
Dinner plates: 5 different types, height range 28–37 mm, diameter range 231–260 mm; average dimensions, height 32 ± 5 mm, diameter 242 ± 12 mm.

Again, the large range in size dimension causes some problems in classification here because of the overlap between dessert and dinner plate sizes within the

observed ranges—which effectively means that it is sometimes not possible to state whether or not a plate in isolation is form a dessert or a dinner service. Of course, it partial sets are available it would be possible to then formulate a better idea of eth classification, as, for example, dinner services would have a wider range of vegetable tureens, soup tureens, soup dishes and serving dishes whereas dessert services would have fruit comports and ice pails. A particular problem then arises for combined dessert/dinner services made at Swansea, which could have a bespoke range of tureens and comports as desired and specified in the original commission.

Unfortunately, a similar situation does not pertain for Nantgarw porcelain; the best opportunity for undertaking such an exercise would have been accorded to Dr. W. D. John when he compiled his seminal book (*Nantgarw Porcelain*, 1948); he claimed that over 5000 pieces of Nantgarw porcelain were studied as the basis of this work but only broad figures were provided in his comprehensive texts. At this time there were in existence several complete or nearly complete services extant, and the opportunity would also have arisen, therefore, at that time to undertake precise measurements of similar items within these services to be able to assess the variation experienced within each service of the individual key dimensional measurements. As a result, existing measurement of Nantgarw porcelain where these appear are rather imprecise, e.g. dessert plate, diameter 8 ¼ to 8 ½ inches, dinner plate 9 ½ to 10 inches. The best one can do here therefore is to recognise that the unknown piece fits into a broad range of acceptable measurement and not to rely exclusively upon this parameter as being indicative of source and origin. A detailed although limited account of Nantgarw porcelain service measurements is hence provided in Appendix 6.

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Chapter 20
Statement Made by Henry Morris to Colonel Grant Davidson in 1850

Abstract An important historical document that is referred to by authors of Welsh porcelains is the statement made by Henry Morris, a celebrated artist who worked at Swansea and is esteemed for his decoration of Swansea china, to Colonel Grant Davidson in 1850: this document has received much interest because it was made by someone who actually worked at the china works, who knew Dillwyn, Walker and Billingsley and who could shed some light upon what happened there and who worked there. As part of this study this statement has been dissected and analysed and several inconsistencies announced of which readers need to be aware.

Keywords Henry Morris · Grant Davidson document · Swansea china works · William Billingsley · Lewis Dillwyn · Samuel Walker

One of the most important documentary pieces of evidence to survive about the founding and operational running of the Swansea china works is a statement made by Henry Morris to Colonel Grant Francis in August, 1850 which is reproduced in full in Document 2, in an Appendix, which has been briefly mentioned earlier. The uniqueness of this statement resides in the fact that it was made just 28 years after the formal closure of the Swansea china works, although it did not surface until it appeared in *The Cambrian* in January, 1896, just a year before William Turner published his seminal book on *The Ceramics of Swansea and Nantgarw* in, 1897. We need to examine the evidence presented in this statement, made by a premier artist and decorator at the Swansea porcelain factory who had spent his whole early career there from his apprenticeship and its foundation in 1814 to its final closure in 1822 and indeed thereafter in decorating post-sale stocks items of Swansea and other porcelainthe *Lysaght* in Swansea for many years afterwards. He was responsible for some of the finest decoration on Swansea china, and for at least one recorded major named service, namely service. Hitherto, Morris' comments have been accepted without question but latterly several inconsistencies have arisen in chronology and orders of events, so it is appropriate here to re-evaluate this important documentary source material in a proper scientific manner.

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Several conjectural points can be raised for discussion and debate in Morris' statement as given in Document 2:

1. The initial statement that Messrs Burn and Biggs came from Coalport to assist Dillwyn in the first attempt at porcelain manufacture in the Cambrian Pottery, Swansea, in 1815 does not match with the accepted chronology: Billingsley and Walker arrived in Swansea after their first phase of Nantgarw porcelain production ceased in 1814, substantiated by Dillwyn's own records and his commission from Sir Joseph Banks earlier that year to investigate and report on the quality of the Nantgarw porcelain. Dillwyn then successfully arranged for the transfer of Billingsley and Walker to Swansea for the establishment of the new Swansea china works adjacent to the Cambrian Pottery. Morris is quite clear that porcelain manufacture had not been attempted at the Cambrian Pottery prior to the arrival of Biggs and Burn and he was apprenticed to Dillwyn at the Cambrian Pottery decorating earthenware. It can be suggested therefore that Messrs Burn and Briggs arrived in Swansea to work with Dillwyn at the Cambrian Pottery after 1813 and before Billingsley and Walker arrived later in 1814. It is interesting too to speculate on Dillwyn's role in setting up the porcelain manufactory at Swansea: the literature seems to suggest that Dillwyn had the idea to produce porcelain at Swansea after getting asked to look into Billingsley and Walker's operations at Nantgarw in late 1814. However, it is also clear from Morris' statement that Dillwyn had thought of this as a real possibility the preceding year—the difference being that he realised that he would (a) have to set up a new venture in Swansea other than the Cambrian Pottery, and (b) that he would need sound practical expertise in the craft of porcelain manufacture, which Burn and Biggs did not possess, despite their previous employment at the Coalport china works, which was an up-and-running manufactory. We do not have any information about what roles Burn and Biggs had at Coalport, but Dillwyn must have recognised the prowess of Billingsley and Walker in the decoration and manufacture of quality porcelain, subscribing to Walker's particular knowledge of kiln construction and firing processes. This document seems to be the only extant record of the attempt by Dillwyn to set up a porcelain manufactory at Swansea prior to the arrival of Billingsley and Walker in September 1814. A search of material relevant to early Coalport porcelain failed to reveal the names of either Biggs or Burn, so it is not possible at this stage to gain any insight into their expertise: for example, were they employed at Coalport as china decorators, gilders or as body specialists? Clearly, Dillwyn did not value their practical expertise in helping him to make a commercial porcelain at the Cambrian Pottery, but we may infer that Dillwyn had by that time, late 1813 to early 1814, been made aware of the rather more successful activities engaged by Walker and Billingsley in nearby Nantgarw—even though the first phase of porcelain manufacture at Nantgarw needed an injection of financial support in 1814 which was not forthcoming.

2. The chronology of paragraph two in Morris' statement is also suspect and easily regarded as being potentially false, since by late 1817 Billingsley and Walker had left Swansea and had returned to Nantgarw to commence their second phase of porcelain manufacture there: in fact, there is documentary evidence that Sarah, Billingsley's elder daughter and Samuel Walker's wife, died in Swansea in January, 1817. Hence, to state that Billingsley and Walker only arrived in Swansea from Nantgarw in 1817 is totally incorrect.
3. In this second paragraph, Morris also mentions that Isaac Wood, formerly of Burslem in Staffordshire, had also arrived from Nantgarw with Billingsley and Walker and that Joseph Goodsby was also there—both men involved in porcelain modelling. Normally, a porcelain modeller or "repairer" shapes and forms the porcelain items before firing and also applies porcelain flowers etc. to biscuit bodies—it seems that many authors, however, prefer to attribute these persons to porcelain painting and decoration.
4. Morris mentions in passing that Nantgarw employed about a score of persons—which would be considered quite small by Swansea standards—this seems to be correct since Richard Millward, a former employee at the Nantgarw China Works confirmed the number of employees there in the second phase at twenty, including several children and women, and this aspect has been discussed in more detail previously.
5. The presence at Swansea at this time of a ceramics painter called de Junic, who had arrived via the Royal Manufactory in Paris, is interesting as for some time a controversial argument has arisen over the identity of the painter of the "bearded tulips" found on some of the best duck's egg porcelain, and ascribed to De Junic, often termed "Jenny" or even more interestingly as "Jenny the Frenchman". Obviously, there was such a person of French origin experienced in porcelain decoration employed at Swansea. It is doubly interesting to find that de Junic was employed at Swansea in the period 1814–1817, since the Napoleonic Wars were at their height and the blockade of French ports by the Royal Navy was very intense: nevertheless, a Frenchman was able to escape and migrate to Swansea to find employment there. It is not surprising perhaps that little is known of de Junic's history or life at Swansea at this time, when presumably French nationals were considered enemies and treated with suspicion, so maybe Dillwyn played down his presence there for obvious reasons. The origin of the attribution of the Swansea "bearded tulip" decoration to de Junic is perhaps a tentative one and really arises from a comparison of painting styles which were manifest in the Sevres factory around the same time, a bearded tulip featuring in several of these.
6. A very significant statement in Morris' deposition relates to the hands-on approach adopted at Swansea of William Billingsley: he undertook the actual painting of china and closely superintended the work of others. This certainly contradicts the assertion of previous authors that Billingsley would not have had the time to decorate the china personally whilst being closely involved with the running of the manufactory—this belief has caused a discrediting by

many of William Billingsley's personal artistic decoration on Swansea porcelain, but clearly, if Henry Morris is to be believed he must have done so!

7. Even whilst having this resounding success in the creation of a wonderfully translucent duck's egg porcelain and its accompanying superbly executed floral and landscape decoration, the production was fraught with high kiln losses: Morris tells of cartloads of damaged porcelain being consigned to the dump at the Hafod, a short distance away. This dump was located in the 1930s and has been a rich source of broken items, which have yielded much novel information about shapes and impressed marks used at the factory. However, no business can survive with such high operating wastage levels especially in competition with other English factories and presumably the re-emergence of French porcelain imported after the Peace of Amiens in 1815, so it is not surprising that Morris also alludes to the fact that experimentation was still ongoing to try and create a beautiful china which was more robust.
8. It appears that these experiments at Swansea in the variation of the porcelain body composition, which have been recorded in Dillwyn's notebook and reproduced here in Document 1 of the Appendix, were successful in the production of the much more robust Swansea trident porcelain ware, esteemed by Morris and others locally but unfortunately not by the London retailers, who still demanded the much more beautiful duck's egg porcelain that was, however, economically unsuccessful to produce.
9. The final paragraph of Morris' statement reveals the rift that had occurred in "18—", which we can now place correctly at early- to mid-1817, which resulted in Walker and Billingsley leaving Swansea to start up again at Nantgarw in September of the same year with significant, secured new local funding and sponsorship. It is interesting that Morris refers to "management differences" as the cause of this departure—but an alternative explanation is the obvious one, namely that Dillwyn was pushing for the production of the trident body to subsume the duck's egg body and Billingsley would have none of this. William Billingsley was seeking perfection and striving for it and he would most certainly have taken a dim view of the lowering of standards for his work through adoption of the vastly inferior trident porcelain body. This would certainly come under the category of management differences between himself and the Swansea china works owner, Lewis Weston Dillwyn, and the faithful family friend and recently widowed Samuel Walker would surely side with Billingsley, even though Walker's experiments with Dillwyn to create a new porcelain must have excited his professional acumen.
10. We know that after the departure of Walker and Billingsley from Swansea in 1817 that Dillwyn concentrated upon the manufacture of his trident body, most of which would be decorated and then sold locally because of the London retailers' embargo. By 1819, Dillwyn was in financial difficulties and he leased the china works to T. & J. Bevington, who operated the sale of existing stock until the lease expired in 1822. Morris confirms that no more Swansea porcelain was made by the Bevington's and the final stock of porcelain was sold in the sale of 1823. Dillwyn resumed the ownership of the

Swansea china works after this, but effectively no more porcelain was produced there; it must be stated, however, that Dillwyn did reopen the works at Swansea for a few years only in the 1830s for the production of a special terracotta earthenware, called *Dillwyn's Etruscan Ware*, based on ancient Greek designs and decorated simply with classical themes in black and red (see Elis Jenkins, *Swansea Porcelain*, 1970).

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Chapter 21
William Billingsley—An Epilogue

Abstract A short statement about William Billingsley and his ambitious idea to create the world's finest porcelain to match his exquisite ceramics decoration: a venture in which he was shown to have been successful but which made him financially impoverished, his family predeceasing him and leaving him a pauper. In this brief summary, the only known picture of Billingsley shows him as a lean ascetic figure probably around 1795 at the height of his ascendancy at Derby and with his ambition still to be realised at Swansea and Nantgarw.

Keywords William Billingsley · Nantgarw · Swansea · Derby rose artist

The prime location of the Glamorgan Canal at Nantgarw, whose presence was so vital for the bringing in of raw materials for porcelain manufacture, cannot be over emphasised and it proved to be a superb choice for Billingsley, Walker and Young: it would be fitting to conclude here with a picture of William Billingsley, the prime mover without whose presence there would have been no porcelain made at Nantgarw. As he changed his name frequently during his career, a notable variant being Beeley, so it appears that he shunned publicity and there is only one pictorial record that we have of William Billingsley which has surfaced thus far, now in Derby Museum, and depicts "*The Rose Painter*" (Fig. 19.16). For many years this was assumed to be William Corden from hearsay comments made at the time; its first mention is in Twitchett (*Derby Porcelain*, 1980), but comparison of other images of Corden (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002 p. 204, plate 252) where it has been described as:

> An oval portrait plaque said to be of William Corden, ca. 1835, from the family of Edwin Trowell, a leading painter at Osmaston Road at the close of the 19th Century.

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Fig. 21.1 Oval plaque believed to depict William Billingsley, "The Rose Painter", as identified by John Twitchett, *Derby Porcelain*, 1980 plate 252, p. 204: reproduced with kind permission of the executors of the late John Twitchett

The acceptance of this plaque as being a portrait of William Corden without any evidence had always bothered John Twitchett, who after much further research and examination of pictures and documents pertaining to the Corden family archives, realised that there was only one "Rose Painter" at Derby who could claim this accolade and this was William Billingsley and certainly not William Corden. Billingsley whom this picture is now believed to represent in characteristic late 18th Century dress was always referred to as the being the epitome of rose painting at Derby, so befitting this title. He is shown here as a rather ascetic,

lean young man, probably pictured around 1795, at the height of his powers at Derby. It is sad to think that this masterful ceramics artist would be dead some thirty years later, but his achievements accomplished in the face of severe adversity in those three decades would far surpass any other contemporary painter and he would no doubt be satisfied today that his ambition and objective to create the World's finest and most appreciated porcelain at Nantgarw had been amply sustained. A statement made by Frank Hurbutt (F. Hurlbutt, *Old Derby Porcelain and its Artist-Workmen*, 1925), a respected and early author on Derby porcelain, almost a hundred years ago about William Billingsley is so apt and applicable today even as we have learned so much more about this enigmatic man:

> Billingsley's artistic skill and taste, his white -hot enthusiasm for his creative trade, his love of beauty, of perfection itself, his power of absorption of all that was most perfect and beautiful around him, set him on a plane apart, with such names as Palissy, Dwight and Bottger. In an artistic sense he reached a perfection which has never been surpassed, perhaps can never be surpassed."

A recent exhibition of some of some superb porcelain from Derby, Pinxton, Swansea and Nantgarw (M. C. T. Denyer, 2016), entitled *A Journey with William Billingsley*, on the theme of William Billingsley and his travels from Derby to Pinxton, on to Worcester, Nantgarw, Swansea and finally to Coalport is now reviving interest in his ceramic works of art and featuring some of the porcelain illustrated in this book (Fig. 21.2), which truly provides an artistic "Grand Tour" in typically Regency fashion through some of the finest examples of British porcelain manufacture and decoration accomplished between 1785 and 1820 (Fig. 21.2).

Fig. 21.2 Frontispiece of Porcelain Exhibition Catalogue, *A Journey with William Billingsley*, May–July 2016. Reproduced with permission of Dr. Morgan Denyer

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Appendix A

Notes on the Experimental Production of Swansea Porcelain Bodies and Glazes Made by Lewis Weston Dillwyn with Samuel Walker at the Swansea China Works Between 1815 and 1817 (Presented to the Library of the V&A Museum by John Campbell in 1920). Taken from Eccles and Rackham, *Analysed Specimens of English Porcelain in the V&A Museum Collection*, 1922.

Key to abbreviations in text: V sand; KO flint; LO lime; YX bone; B St Stephen's clay; E Norden clay; FO composition, china stone; FX pearl ash; EX nitre; GX arsenic; AX lead; MX borax; DX glass; LX smalt; SR soaprock; No. 157 sand frit; No 343 composition ditto.

Body Number 1: Body

12 V + 1 FX: fine

10 FO + 1 FX: coarse

Glass frit: 11 V + 9 FO + 6 FX + 3 MX: 26 parts taken with 12AX + 1 SR

or: 3 V + 3 FO + 2 FX fritted with one-tenth of SR

the above is a variation of the Nantgarw body.

Body Number 2: Common body

12 FO composition—4 cwt 70 lb; 8 YX bones—5 bone; 8 B china clay—3½; 1 E blue clay—35 lb

(According to Eccles & Rackham, this is the first evolution form a duck's egg body)

Body Number 3: Biscuit rect used in Autumn 1815

20 parts V + 1 part FX in water fritted at very high heat.

140 lbs of above frit + 110 FO + 25 SR fired very regularly and gradually or it will blister. It was afterwards found that the blistering proceeds from an accidental mixture of alabaster to prevent the possibility of which great care must be taken.

(Believed to be an early effort at a trident body)

Body Number 4: Sounder body but the articles still continue to fly with hot water.

140 lb frit + 11O lb FO + 35 lb SR

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It was discovered that the B and FO when fritted together into one mass with FX make an equally good looking body which stands well.

Body Number 5:

45 FO composition + 10 LO lime + 28 B china clay

makes a body which comes very near the Chinese eggshell and will take a hard glaze but must be fired very high and is then apt to get out of shape.

Body Number 6: Very good

9 parts V + 1-part B and a little LO fritted in a very high heat.

3 above frit + 3 FO + 1/10 SR

Body Number 7:

B of which half has been fritted and ground, glazed with FO, is the Dresden china. A very great heat is necessary and difficult to get saggars to stand it. Equal parts of B and FO is the very best French china and will take an FO glaze. No other than an FO glaze will do as all others craze.

Body Number 8: a beautiful china which stands well but is rather too soft for the hard glaze.

12 B china clay + 12 YX bone + 12 FO stone + 3 LO lime

(According to Eccles & Rackham, page 15, this approximates very closely to the Nantgarw body recipe)

Autumn 1816

Body Number 9: a beautiful body and in all respects answers.

3 B + 3 FO + 3 YX

Body Number 10: an improvement.

8 B china clay + 7 FO stone + 8 YX bone

(According to Eccles & Rackham this is a second evolution on the duck's egg body)

Body Number 11: makes the body harder but large pieces are more apt to fly.

9 B + 9 YX + 7 FO

this body glazes well with glaze number 2.

March 1817

Body Number 12:

12 V + 10 FO + 2 FX fritted together, then 14 of this frit + 2 SR makes a beautiful and good body. If only 1 SR is used it makes the body whiter but the clay is more difficult to work. Afterwards, the following alteration was made.

(A second attempt at the trident body)

Body Number 13: without much improvement on the above body.

8 V + 6 FO + 1 FX fritted in a high heat which had better exceed the biscuit heat.

this body glazes well with glaze number 1.

December 1817

Body Number 14: makes a beautiful white opaque body and with glaze number 3 is the finest earthenware I ever saw.

24 YX bone + 8 KO flint + 16 B china clay + 5 E Pool clay + 1 LX smalt.

Glaze Number 1:

Frit: 10 FO + 6 LO + 2 B + 12 V + 14 AX + 8 MX calcined + 4 EX: total 56 parts

run in the glaze kiln or earthenware biscuit kiln which is about the same heat. I prefer the latter on account of its longer continuance, which makes the frit run more thoroughly throughout.

then 56 parts of the above frit + 30 FO + 6 LO + 2 B + 14 AX + ½ GX

Glaze Number 2:

24 V sand + 12 LO lime + 6 AX lead + 16 MX calcined borax + 2 FX pearl ash

run in glaze heat or as Number 1

then 28 parts of the above frit + 40 FO composition + 28 AX lead + 6 LO lime + 4 B St Steven's clay

Glaze Number 3:

24 V + 12 LO + 6 AX + 16 MX calcined + 2 FX

frit in glaze heat as Number 1; then 48 FO composition + 6 LO lime + 4 B china clay + 30 AX lead + 40 above frit + ½ arsenic to be dipped thick.

Appendix B

A Transcript of an Interview given by Henry Morris, Artist at the Swansea China Works, to Colonel Grant Francis on 14th August, 1850, First Published and Reproduced in *The Cambrian*on the 3rd January, 1896, and Quoted by William Turner in his Book "*The Ceramics of Swansea and Nantgarw*", 1897.

The following information I take down viva voce from Mr. Henry Morris, of Swansea, who was duly apprenticed to Mr. Lewis Weston Dillwyn as a pottery painter in the year 1813. When Morris first went to work, porcelain china was not manufactured at the Cambrian Pottery, but the ordinary earthenware only. He believes that it was in the year 1815 that a person named Burn from Coleport, in Shropshire, came to the works and made experiments for the manufacture of porcelain, but after efforts continued over a few months, one J.W. Biggs (also from Coleport) was employed, and Burn having failed to perfect any china, left Swansea. Biggs succeeded in making a tolerable article in "Stonebody". At first the ware was slightly painted and, as the manufacture improved, the surfaces were painted and gilded much after the fashion then in use in England. Simple forms were chiefly executed, the only ornamentation attempted being a little embossing.

About the year 1817 Messrs Walker and Bailey were earning considerable fame for the superior and beautiful china which they manufactured and ornamented at Nantgarrow in the Vale of Taff in Glamorganshire. Morris believes that the hands employed there did not exceed a score of persons, and it was at this period that his employer, Mr. L.W. Dillwyn induced the partners to break up their establishment at Nantgarrow, and manufacture at his Works on the banks of the Tawe. A kiln was soon constructed upon the Nantgarrow model and much larger than the one previously used for porcelain at the Swansea Pottery. From this time commenced the make and body and glaze which has given such celebrity to "SWANSEA CHINA". The truly beautiful paintings which adorn this manufacture were executed by or under the direction and superintendence of a Mr. Bailey; by the artist Baxter, who had been a student at the Royal Academy; by De Junic from the Royal Manufactory at Paris, and other artists, several of them natives of Swansea, amongst whom was my present informant. The modelling was entirely performed

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by Isaac Wood, of Burslem, in Staffordshire, but who came from Nantgarrow with Walker and Bailey. The biscuit flower modelling was executed by a man of the name of Goodsby, of Derby, and it was then considered excellent. Mr. Bailey not only painted on china but designed many beautiful forms for the modellers. Mr. Dillwyn found the capital and works, and being very fond of natural history, he caused many of the birds and plants of the country to be painted on the china which was manufactured at his works. It unfortunately happened that owing to some peculiarity in "the body", whole kilns of this precious material were destroyed or rendered useless, and many a load was carted away to a hollow in the field at Hafod above the pipe works, whence on some future day choice fragments will doubtless be disinterred.

Experiments continued to be made, at great cost to Mr. Dillwyn, and at length Mr. Walker succeeded in producing a body more safe for firing in the kiln, but the quality of which was inferior to that formerly made for clearness and brilliancy of glaze. The manufacture appeared to be thriving, but differences arising in the management about the year 18, Messrs Bailey and Walker left Swansea and again located themselves at Nantgarrow, where they reopened their manufacture of china, but they soon failed in business, the concern broke up, and has not since been revived. On the departure from Swansea of Walker and Bailey, the management devolved upon Mr. Timothy Bevington, the then manager of the earthenware department of the Cambrian Pottery. The "China" continued to be manufactured from the receipts of Walker and Bailey up to about 1823, when the make was finally abandoned on the expiring of the lease to Bevington, the pottery returning into Mr. Dillwyn's hands. The existing stock of china in the white state was removed to the pipe works, about half a mile further up the river Tawe and there it was ornamented, enamelled, and sold. An enamelling kiln was next constructed at the Brewery premises in the Strand, so as to be near Mr. John Bevington's offices, and there the last remnants of "Swansea China" were painted and sold, the *very* last portions being painted by my present informant. Amongst the numerous purchasers, Morris more particularly recollects Lord Dynevor, Sir Christopher and Lady Mary Cole, Sir John Morris, Mr. J.H. Vivian. Mr. Dillwyn, Lord Ilchester, and Sir Watkin W. Wynn, which last gentleman purchasing at the Brewery, Morris particularly remembers regretting that he was unable to obtain a complete service of *Welch* china. Many strangers came from a distance to purchase, and the more respectable people of Swansea were occasional buyers, and the taste and demand for this beautiful ware were fast increasing when it was unfortunately stopped. The china was sometimes marked when soft with a stamp; but if after glazing, then it was put on with a pencil and red paint, "Swansea" and the like, Morris thinks, was done at Nantgarrow.

Appendix C

Swansea and Nantgarw Porcelains: Some Scientific Thoughts.

It is now almost a 100 years since the first analyses of Welsh porcelain were successfully undertaken by Herbert Eccles and Bernard Rackham, who published their results in a seminal booklet entitled "*Analysed Specimens of English Porcelain*", published in October, 1922. Eccles was a Fellow of the Chemical Society and a practising analytical chemist and Rackham was the Deputy Keeper of Ceramics at the Victoria and Albert Museum, South Kensington, London. The specimens encompassed nearly all the major English porcelain factories of the 18th and early 19th centuries and include the two Welsh factories which are the subject of this book, Swansea and Nantgarw; most of the specimens analysed were from the private collection of Herbert Eccles and these were supplemented by damaged specimens from the Museum collection. Despite the importance of this initial investigation the results were seemingly intended for an internal report only until a decision was made that "*The publication of the analyses of these samples would be of general interest*" (Cecil Harcourt Smith, *Foreword to the Eccles and Rackham booklet*, October, 1922). The porcelain factories analysed in this study were of both hard and soft paste compositions: Chinese (K'ang Hsi period, 1662–1722), Bristol, New Hall, Chamberlain's Worcester, Chelsea, Longton Hall, Liverpool, Bow, Lowestoft, Derby, Pinxton, Caughley, Davenport, Coalport, Swansea and Nantgarw. In their article, Eccles and Rackham frequently refer to some earlier more limited analytical reports, particularly referring to Bow and Chelsea porcelains, of Sir Arthur Church made in his book *English Porcelain,* published in 1904.

The disadvantages of the wet chemistry method of analysis available to these early researchers has already been discussed in Chap. 11 of this current work and has already been compared with later results reported up to the first decade of this present century which utilised modern complementary elemental and molecular structural spectroscopic and diffraction analytical techniques for the determination of the percentage compositions of key materials and this will not be expanded further here. However, the scientific basis for the two key critical properties of

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Swansea and Nantgarw porcelains has never been discussed, namely, their beautiful clarity and translucency to transmitted light and the characteristic duck-egg colouration of the finest Swansea porcelain body achieved by Dillwyn in a period of 2 years between 1817 and 1819. We can also add the third "characteristic" of Nantgarw porcelain which has been fired after decoration in the London workshops and which has developed a peculiar iridescence exhibited near the areas of the applied enamelled pigments.

Eccles and Rackham actually do mention the noteworthy appearance, commented on by Church (*English Porcelain*, 1904), of early Chelsea porcelains as possessing large moon-like discs of greater translucency than the rest of the material which was attributed to the irregular and excessive aggregation of the vitreous glass frit additive. Curiously, Eccles and Rackham also comment specifically that the variety of Nantgarw paste body tried at Swansea in 1817 which from its appearance as a "duck's-egg paste" was found to be unsatisfactory and hence Dillwyn substituted a soapstone body suggested by that currently in use at Flight and Barr in Worcester. In fact, of course, the duck's egg colouration of the finest porcelain made at this time in Swansea was very highly appreciated indeed by clients and purchasers and its replacement by the more durable but much less translucent "trident" body was a commercial disaster. On page 15 of the Eccles and Rackham booklet a comment is made referring to their analysis of specimen number 23, which seems to resemble the type of decoration on the very large *Hensol Castle* breakfast service of Swansea porcelain, *viz.* a simple cornflower sprig; they infer that the duck's egg paste colouration arises from a substitution of ground flint for the Lynn sand used hitherto—this was also accompanied by a reduction of the proportion of bone ash and the consequent increase in the proportion of china clay. This would correspond with the "common body" alluded to by Dillwyn in his ninth recipe undertaken in Autumn 1816, with which he was satisfied and is a "*beautiful body in all respects and found to be an improvement*".

The Swansea Duck Egg Translucency

It would be appropriate to try to seek a scientific explanation for this characteristic Swansea translucency found in only the finest quality porcelain output. A blue-green transmitted colour will arise from the absorption of the complementary colours from the electromagnetic visible spectrum in the wavelength range 400–700 nm. A typical blue green colour through transmitted light will therefore allow the wavelengths in the range from about 450–550 nm to pass through whilst absorbing wavelengths in red, orange, yellow, deep blue and violet regions of the spectrum. We can discount the influence of particulate scattering, such as Tyndall or Mie scattering observed with small particles in gaseous media, as this would generally compromise the overall translucency of the medium being irradiated with white light. Hence, the most plausible reason for a colour absorption in the fired porcelain paste would be the presence of small amounts of transition metal ions which would undergo electronic transitions with absorption in the red and blue visible regions of the electromagnetic spectrum: a similar occurrence is seen in the beautiful transmitted colours of rubies, amethysts, emeralds and sapphires

on account of small percentages of ions such as chromium and iron being present. In rubies and emeralds, the presence of about 1% of Cr^{3+} ions in the aluminosilicate lattice renders electron exchange processes to occur with absorption of radiation from the visible spectrum and result in intense colours of the gems. This process arises from distortions in the lattice caused by replacement of an Al^{3+} ion by Cr^{3+} and lattice–ion interactions occurring through different crystal field effects result in the red and green colours by transmission. In sapphires, the deep blue colouration arises from a different source, namely the charge-transfer electronic absorptions resulting from the presence of only 0. 01% or so of Fe^{2+} and Ti^{4+} impurities in the corundum aluminosilicate lattice.

It is intriguing to note the comment of Eccles and Rackham that the substitution by Dillwyn of flint for Lynn sand coupled with possibly the reduction of bone ash and increase in china clay composition gave the most beautiful Swansea body with the desirable duck egg translucency. Lynn sand was perhaps the purest form of natural quartz that could be obtained at that time, and most sand does contain iron oxide in the form of Fe_2O_3. Flint, chalcedony or chert, however, although chemically related to sand in the form of silicon dioxide, SiO_2, are formed from different geological processes through diagenesis and, therefore, can contain different impurities in sensibly different solid state matrices. China clay mineral on the other hand, also known as kaolin, is a phyllosilicate, an aluminosilicate containing aluminium, oxygen and silicon in its matrix and from its Cornish sources is known to have significant quantities (possibly up to 1% or more) of anatase, titanium dioxide, TiO_2, in its composition: hence, we have the source here of titanium ions and iron ions for possible redox charge transfer electron exchange processes to occur with absorption of radiation in eth visible region and to give the deep blue–green colour in transmission noted in Swansea porcelain used in Dillwyn's modified recipe from about 1817–1819. This reasoning would also suffice to explain the uniqueness of Swansea porcelain transmission via its duck egg colouration in the latter part of the second decade of the 19th century: after closure of the manufactory in 1821 and the dispersal of its workforce, the alleged purchase by John Rose of the Coalport factory of the Swansea moulds and recipes may explain the occurrence in the early 1820s of Coalport china also having a blue-green transmission characteristic, which however never attained the depth and purity of colour of the analogous Swansea version!

The attribution of the Swansea blue-green colouration by light transmission to charge transfer electron absorption by transition metal impurities in the kaolin and ground flint composites would also explain why the depth of colour is not constant for all Swansea pieces manufactured in the same 2-year period: the colour intensity will naturally vary with the changes in concentration of metal ion impurities present in the different batches of raw materials obtained. An example of this can be seen by comparison of the photographs taken and reproduced in Figs. 3.2, 18.4 and 18.6, where although all can be termed of duck-egg translucency it is clear that the more intense colour is shown by the Swansea spill vase in Fig. 18.6 whilst that of the coffee cup in Fig. 18.4 has a distinctly yellow cast superimposed on the green translucency and the plate in Fig. 3.2 is somewhat intermediate in

blue–green transmission between the two. A change in the transmitted colour cannot therefore be simply attributed to experimental changes in the porcelain body composition.

The Swansea and Nantgarw Translucency

As a separate issue, we can now explore the origins of the particularly fine translucency possessed by both manufactories: the pictures taken in white light transmission, exemplified by Figs. 3.2, 18.4, 18.6, 19.1 and 19.4 demonstrate this very clearly—there is no evidence at all of blemishes or of areas of cloudiness seen in transmitted light. This can really only mean one thing: the mixing process whereby the finely ground flints, calcined bone ash, kaolin and potash is extremely efficient and there is little effect from heterogeneous agglomeration which would result in imperfections and areas of lower clarity. As a contrast, we can cite a comparison with the efforts made by the Chelsea china potters some 60 years earlier, where the presence of moon-shaped or sickle shaped cusps of clear translucency in areas of rather nondescript cloudiness can be related to incomplete mixing processes and perhaps a lack of attention to the grinding necessary to achieve good particulate mixing prior to the kiln firing. The final parameter that needs to be considered here, of course, is the design and temperature control of the kilns used in the manufacture. In this, Samuel Walker is acknowledged to be the foremost exponent of kiln design and practice in the ceramics field in the early 19th century, a skill that he had opportunity to hone to perfection through his association with William Billingsley in several ventures, starting at Brampton, Torksey, Mansfield and finally at Swansea and Nantgarw. Until now, the role of kiln master has been perhaps little appreciated, but therein lay the secret of a successful enterprise: Walker had met up with Billingsley first at Derby then continued their association thereafter, becoming Billingsley's son-in-law and a key member of the Billingsley family in their various locations. In this context, it should be recalled that when Dillwyn first contacted Billingsley at the commercially failing Nantgarw about joining him in his original venture to manufacture porcelain at Swansea which had not been realised by his previous engagement of the two members of the ex-Derby workforce, the key to the success of the whole enterprise would be the kiln design—and in this Walker was the *force majeur*. The first successful manufacture of a highly translucent porcelain at Swansea soon followed. Despite this, modern opinion still unanimously appreciates that the Nantgarw recipe yielded the more highly translucent vehicle which was much desired by its clientele, and a complete success was only prevented by uneconomically large kiln losses arising through structural warping and sagging which could never be redressed into a commercial viable product.

It is clear that the highly translucent Nantgarw porcelain especially could not be matched anywhere else in soft paste porcelain manufacture: only the very thinly potted hard paste Chinese porcelains and the later bone china English versions could compare and it is generally accepted that both of these still did not match the clarity and translucency of Nantgarw porcelain in its heyday.

Origin of the Iridescence Seen on London Decorated Enamelled Nantgarw Porcelain.

Dr. W.D. John in his classic work on Nantgarw porcelain (*Nantgarw Porcelain*, p. 163 and ff., 1948) has made a comprehensive assessment of ceramic iridescence generally and its appearance on Nantgarw porcelain specifically. Iridescence arises from the differential refraction of light from microsurfaces and appears at only certain glancing angles to the observer: this is also termed goniochromism, which means the appearance of colour with an angular dependence to eth observer, the most common experience met in nature is that of a rainbow, caused by the refraction of white light through microdroplets of water suspended in the atmosphere—although ceramic iridescence has a different origin in that it arises from the differential scattering of visible wavelengths of light from surface layers in the glaze and ceramic body. Other occurrences of iridescence in nature involve the scattering from thin films of organic compounds on a liquid surfaces (e.g. oil slicks) or from organic layers interspersed with organic or inorganic matrices (e.g. sea shells and insect wings). The iridescence of early Han Dynasty Chinese porcelains (25–220 ACE) is usually ascribed to the interaction of the glaze and ceramic interfacial deposition with moisture and leached salts in the burial environments: the disintegration of the surface glaze has resulted in the formation of layers of material with different refractive indices which contribute to the observation of a rainbow effect when viewed at certain angles. The influence of the glaze in the observation of this iridescence is substantiated by the fact that the Han porcelains were the first to adopt glazes, which were then subjected to chemical deterioration during the subsequent burial of the ceramic items. Another interesting observation is that the early Han and Tang glazes were lead silicate based whereas the later Sung Dynasty glazes were felspathic refractory mineral glazes fired at a much higher temperature (1350 °C) and these were substantially more resistant to chemical decay, so Sung period porcelains are not subject to this iridescence phenomenon. In affirmation of this idea, the later Ming Dynasty wares reverted to the use of alkaline lead silicate glazes again and these are now found to be subject to quite extensive chemical deterioration, especially from archaeological artefacts where the glazes have interacted with salts and moisture in the depositional environment. It is interesting that, despite the detailed lack of understanding as to the origin of these iridescent colours on Chinese porcelain, its presence on items is accepted by experts as evidence of their authenticity and age.

Similar iridescence is also noted on ancient glass which is again attributed to the breakdown of the surfaces through deterioration in burial environments and indeed the iridescent colours are often much appreciated as an attractive enhancement: the refractory colours exhibited by Roman and Islamic glass from burial environments are seen as attractive attributes which enhance the desirability and beauty of the artefacts. The mechanisms of potential chemical deterioration of glazed ceramics are of course dependent upon the chemical reactivity of their surroundings, the acidity and humidity of the atmosphere, the presence of nitrogen, carbon and sulphur dioxides, of organic breakdown products from motor exhausts, factory chimneys or heating boilers. In the burial environment, the presence of

fertilisers or of ammonium salts and nitrogenous compounds from cemeteries can all contribute negatively to the survival of glazed artefacts. For example, the initial attack of carbonic acids upon silicate glazes in alkaline or acidic environments results in the formation of soluble carbonate salts of sodium and potassium, which being dissolved in damp conditions leave scaly deposits and a framework of silicates of calcium, aluminium and lead. It is the presence of these microstructural scales which help produce the surface morphologies and interfaces necessary for the refraction of light and creation of the iridescent spectrum with colours ranging from violet through to red. This may be an adequate explanation of the formation of iridescence on buried ceramics but these scenarios surely cannot be invoked for its presence on Nantgarw porcelain, and more specifically apparently only upon the London-decorated pieces from this factory! We must therefore look to another possibility to explain the Nantgarw iridescence: the operating parameters must be the composition of the glaze itself, the proximity of the mineral oxides salts used in the enamelling and the kiln characteristics used in the glazing firing process, which used the "glost" kiln.

It appears that a high proportion of alkaline sodium and potassium salts relative to the lead and calcium content used in the ceramic glazes determines the rapid attack and the route of decomposition of ceramic glazes coupled with the low temperature firing processes. A characteristic of the Nantgarw iridescence, however, is the appearance of the spectral colours close to the enamelled areas of the decoration: hence, forensically, we must conclude that the mineral composition of the enamels and their reaction with the glaze in the kiln might be critical factors to consider. Also, we should remember that this decomposition probably occurs during the firing process rather than under variable environmental situations thereafter, so a 24 h firing period in a glost kiln should be sufficient to cause the iridescence. In support of this conclusion, it is noted that where the temperature of the glaze firing kiln is high, the alkaline materials are preferentially volatilised and thereby unable to attack the glaze: hence feldspathic glazes, which are deficient in alkaline content and fired at high temperatures up to 1400 °C show no signs of iridescent deterioration—precisely the conditions under which the Ming Dynasty hard paste porcelains were glazed and fired and these show no signs of iridescence in pristine porcelain which has not been subjected to burial conditions. In contrast, a high proportion of lead in glazes seems to combat effectively the role of alkaline attack and hence these also do not exhibit iridescence.

The iridescence observed on Nantgarw porcelain is generally, but not exclusively, localised near the enamelled colours—which appear to have a narrow spectral border or coloured "halo". This is not a pigmented area in that it does not arise from a diffusion of colourant through the glaze extending beyond the limits of the original painting but rather an area where interference is occurring between the visible wavelengths being refracted and reflected from the scaly microdeposits of silicaceous glaze at the surface of the porcelain artefact in the vicinity of the enamels; to observe this iridescent effect it is necessary to tilt the porcelain object at a shallow angle and to examine the regions near the enamelled decoration at grazing incident angles, when the spectral colours will appear as a rainbow effect.

In some cases it has been reported that larger areas of surface iridescence have been noted on the rear surfaces of flatwares—obviously, one cannot here invoke the influence of the enamel minerals in the glaze deterioration and an alternative explanation must apply: this iridescence in particular is of a rather different type to the one most commonly observed near the enamels on the front surfaces of objects and appears as a grey cloudiness with occasional blue tinges, rather than the full rainbow effect noted elsewhere. A reasonable explanation for this secondary iridescence has been advanced by Dr. W.D. John (*Nantgarw Porcelain*, 1948) which involves the volatilisation of alkaline components of lead glazed items immediately below the object being studied and occurs in a reducing kiln atmosphere; these thin deposits then condense upon the nearest items in the kiln above them and form superficial microlayers which could refract visible light. Localised areas of iridescence near the foot rims of Nantgarw porcelain can also be attributed to a similar occurrence of volatilisation from the porcelain stilts or saggars which are used to separate the individual items in the stacked kiln prior to the commencement of firing.

In another example of mistaken attribution which has been based on no evidence whatsoever and relating to the iridescence noted near the enamelled regions of highly decorated Nantgarw porcelain, an apocryphal statement was written ascribing the attribution of this iridescence to locally decorated pieces originating at Nantgarw. It is much more likely, however, that the opposite is true: examination by Dr. John and his associates of porcelain decorated locally by Thomas Pardoe established that none had the iridescence that would have been expected from this earlier erroneous statement. However, in the porcelain from famous named services which were London-decorated, such as the *Duke of Cambridge, Kenyon* and *Duke of Gloucester* services, all exhibited clear iridescence patterns. Several hundred examples have been collated in this way and it is now clear that unequivocally the presence of iridescent "haloes" near the enamelled decoration on Nantgarw porcelains labels them as London decorated. So, we now can try to postulate the mechanism whereby this effect would become manifest in London-decorated porcelain but not in the analogues which were decorated originally at the factory. Dr. John has approached the problem in an analytical way, which can be summarised as follows: since the porcelain purchased by the London ateliers from Nantgarw was in the white it was already glazed so the iridescence could be attributed to:

- A special preparation of the enamels in the London ateliers which did not apply locally in Nantgarw;
- The flux used to adhere the enamels to the glaze substrate;
- Operation of the final kiln firing process.

As the enamels used in the decoration would be essentially similar in the London and Nantgarw decorating workshops, being mineral oxides, sulphides and inorganic salts, it would perhaps be reasonable to invoke here a different flux composition used between the two sites: from previous discussions here, we have noted that a more highly alkaline flux adhesive richer in sodium would tend to produce

the iridescence by attack upon the original glaze and this would occur near the enamelled regions where the adhesive was applied to help fix the enamels to eth porcelain body. It is also theorised that the composition of the adhesive flux used at Nantgarw for enamelling would have been closely similar if not identical to the original glaze, which was rich in lead and calcium, both of which rendered the glaze more resistant to alkaline attack as noted earlier. Finally, it is known that Thomas Pardoe used a high temperature steam coal fired kiln at Nantgarw, which volatilised the alkaline sodium compounds and stabilised the glaze, coupled with an oxidising atmosphere, whereas the London enamellers used lower temperature charcoal heated kilns and a reducing atmosphere which was desirable particularly for the popular bone china replacement for true porcelains coming into vogue at that time. The London enamelling ateliers were not dedicated to the decoration of Nantgarw porcelain but carried out work on a variety of porcelains and chinas and selected their kiln process accordingly.

From this analysis, it would seem reasonable to conclude that the Nantgarw iridescence can be regarded as a sign of a London-decorated piece and its presence can be attributed to the different kiln firing temperatures and kiln chemistry operating in the London workshops. A corollary that has not been explored hitherto is why this iridescence does not appear on London decorated Swansea porcelain and indeed has not been commented on regarding other factories where items were despatched to the same London workshops for decoration? This investigation is obviously outside the scope of this book and would involve a whole range of diverse porcelain bodies from Chinese hard paste export wares through Continental hard paste and soft paste porcelains and bone china and we already realise that the Chinese porcelains were fired at even higher temperatures than Nantgarw, so the differential temperature between the London furnaces would be substantially greater.

Appendix D

The Pendock Barry Service: A Reappraisal

The *Pendock-Barry* porcelain service from the Derby China Works is a large and sumptuously decorated ceramic work of art (see Fig. 7.2); also known as the *Barry–Barry* service, despite its being a named service it has been a source of ongoing controversy regarding its origins and decoration and it is therefore timely to review the available evidence which may potentially clarify some issues. Originally attributed strongly and definitively to the hand of William Billingsley (J. Haslem, *The Old Derby China Factory,* 1876; W. D. John, *William Billingsley*, 1968) some authors have challenged this designation based upon chronologically exclusive material relating to the grant of arms to Pendock Barry (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002), which is by no means as clearly defined as it seems. It is thus appropriate that a holistic forensic approach, using scientific methods and considering historical facts, is adopted in which the baseline evidential information is corroborated and the relevant documentation is appraised critically to avoid the generation of fallacious arguments arising from incorrect and unsubstantiated assumptions, which at first seemed to provide reasonable and sensible outcomes. In this way an unequivocal historical provenance should be forthcoming for this important service. This particular case study is considered appropriate here as the theme centres on whether or not William Billingsley could have decorated this service at Derby, or even perhaps somewhere in transition between Derby and Nantgarw.

Firstly, we need to delineate what is known and review what is surmised about the *Pendock-Barry* service; the standard questions posed in any holistic forensic art investigation are as follows:

- Where was the artefact made?
- Is there any documentary evidence associated with its order and manufacture?
- Who made it and who gilded and decorated it?
- Is there a mark and, if so, is this correct for the chronology of the piece?
- What was its composition and where are the other known pieces now located: are there auction results?
- Who initiated its manufacture or commission?

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- Was it sold on afterwards?
- What was the purpose of its commission: marriage, celebration?
- What historical evidence or statements can be called upon to support the placement of the service in its correct timeframe?
- Is this a unique artefact: are there copies or variants known?
- Is it all it seems to be or is there a rogue element to the service, e.g. pieces from other factories, pieces decorated by other painters?

For any porcelain manufactory in the 18th and 19th centuries, we have already seen that the commissioning of "*named services*" to special order by Royalty, the aristocracy and prominent members of society, was an accolade that conferred upon them an enviable status and secured their own position amongst their contemporaries in a highly competitive field. The beauty of the porcelains themselves and the artistic merit of floral, animal and landscape decorations accompanied by rich gilding demanded the pursuit of manufacturing perfection utilising an empirical but nevertheless complex solid state and high temperature chemistry. The best factories advertised their products from their own local source or by adoption of dedicated agents in London to market their wares.

The *Pendock-Barry* service, or *Barry-Barry* service as it is often known, is sumptuously decorated porcelain (Fig. 7.2) originating from the Derby China Factory at the cusp of the 18th and 19th Centuries. Although superficially it should be a classic example of a well-characterised Derby "*named service*" and thereby be dateable there are some controversial statements made in the literature which make it a rather interesting case study from a holistic forensic standpoint. For instance, John Twitchett in his excellent and comprehensive survey of the products of the Derby China factory between 1748 and 1848 (J. Twitchett, *Derby Porcelain:* 1748–1848, 2002) lists many named services supplied to Royalty, the nobility and landed gentry, with meticulous details recorded from the Derby work books of William Duesbury I, William Duesbury II and Robert Bloor, the major proprietors of the factory in this period. In fact, from more than 30 such *named services* he has cited as being manufactured in this period, the only one in his survey that fails to have been recorded in the Derby factory documentation is the *Pendock-Barry/Barry-Barry* service, and that obviously creates a problem for the attribution of a painter and for a date of its commission! So, the first question that needs to be asked is "What evidence is there for it being a Derby creation in eth first place if it is not even mentioned in the factory work books?". Secondly, why should this important and beautiful service not even merit a mention in the Derby work books, when other perhaps less appealing services have a wealth of information there, including their date of commissioning, transcripts of letters from the Duesburys or Robert Bloor and their London agent, Joseph Lygo, from his successors and from the persons ordering the work specifying special service items and decoration: these work books also give details of the painters and gilders who carried out the tasks, and even the assigned pattern numbers where appropriate. Examples of this correspondence for service commissions include The Earl of Camden, Earl Shrewsbury, Lady Camden, Viscount Cremorne, Lady Cremorne and Lord Winchilsea, who all ordered services from the Derby factory in the period 1780–1810.

But, a curious situation pertains for the *Pendock-Barry (Barry-Barry)* service in that it does not feature at all in the Derby work books, so one cannot assign a purchase date or a painter to this service and we need to explore how this arose. The first mention of the *Barry-Barry* service occurs in John Haslem's book on the Derby factory (*The Old Derby China Factory*, 1876) but it would be wise to remember that Haslem, although having knowledge of the personnel who worked at the factory until its closure in 1848, actually recalled many events from memory as did those he interviewed, so occasionally the facts may have been distorted, as we have already seen with the Swansea and Nantgarw factories. At this stage it is perhaps appropriate to delineate the genealogy of the Pendock and Barry families in an attempt to place correctly the person who ordered the service.

Genealogy of Pendock-Barry

Sir Richard Barry was granted the Lordship of the Manor of Tollerton in 1298 and this passed to Richard Pendock through his marriage to Matilda Barry, the last of the Barry line, in 1545. The Pendocks continued as Lords of the Manor until 1683, when Philip Pendock's only son and heir Thomas died aged 15. John Neale, the husband of Philip's second daughter Anne then bought out her other two sisters and became Lord of the Manor. The Neales continued in succession until their line ended in 1847. In 1812, the Prince Regent granted a licence to Pendock Neale to adopt the name and arms of Barry, when he became known as Pendock Barry: Pendock Barry died in 1833. His son, born Pendock Barry Neale, then became Pendock Barry Barry, who died a bachelor and without issue in 1847. The estate was bought by Mrs Susannah Davies in 1847 who retained it until she died in 1872. The arms of Pendock Barry are a fusion of the Barry arms, namely a shield, silver with three red horizontal bars, the top of each bar is indented to represent battlements *(argent, three bares embattled gules)* and the Pendock arms, a shield with red ground with top third silver on which are five blue clover leaves and lower part of shield has two pairs of silver bars *(gules, two gemelles argent on a chief argent five trefoils azure)*. The Barry motto was also adopted at this time: *A Rege et Victoria*—From the King and by Conquest.

In 1811, Pendock Neale erected a mausoleum upon the death of his wife, Susannah Neale; several alterations were made to the Church of St Peter and a covered walkway was constructed between Roclaveston Hall, Tollerton, and the Church. The church contains hatchments showing the arms of the family and this has proved extremely useful for assigning the armorial bearings on the Derby plate of the *Pendock-Barry* service—they clearly belong to Pendock Barry and confirm his assumption of the Barry arms and are neither exclusively Barry, nor Pendock nor Neale. It seems straightforward therefore to allocate the chronology of the service to Pendock Barry and a date of 1812, when the grant of the adoption of the Barry arms was given by the Prince Regent. Hence, it would be perhaps proper to assume that the service was commissioned by Pendock Barry to celebrate his award of the arms. Twitchett and others have assumed an earlier date ranging from 1806–1811 for this service: clearly, this would at first sight eliminate William Billingsley as decorator as he had departed from Derby by 1795. However, it is

on record that Billingsley did engage upon the painting of porcelain from several factories whilst based at Mansfield and Torksey in the period after leaving Pinxton in 1802 and joining Worcester in 1810. Also, one of the most sumptuous Derby services, the *Lord Ongley* service, was decorated by William Corden after he had left Derby in the last years of the second decade of the 19th century, yet this is renowned as a Derby service and is moreover mentioned in the Derby work books!

The factory mark on the *Pendock-Barry* service could provide a valuable clue here as the script puce crown over crossed swords mark of the Duesburys gave way around 1800 to the red mark of the Bloor period: unfortunately, not all the *Pendock Barry* service is marked, and the pieces that are so marked are in a script gold mark, which therefore cannot be definitive chronologically. This mark was used occasionally by the Duesburys and also by Robert Bloor, for example up to 1825 when the *Trotter* service was commissioned! Derby china of the Bloor period is characterised by a tendency for the glaze to crack due to porcelain body changes operational at that time: this does not appear to have happened to the *Pendock-Barry* service, so possibly we are dealing here with the earlier body and glaze combination, i.e. that of the 1795–1800 period?

The service is first mentioned in John Haslem's book on the Derby china works, published in 1876 (J. Haslem, *The Old Derby China Factory*, 1876); the sale of the service in its entirety realised £496. 11s. at Neale's auction house in Nottingham in 1894 and the sale of two plates from the William Bemrose Jr. ceramics collection realised £33.12s. and £34.13s, respectively. Unfortunately, the purchasers of the service or separate pair of plates are not specified, but the auctioneers Parke Bernet in New York sold a "substantial" amount of the service in 1947, comprising two round dishes, two tureens, plates and other dishes. John Twitchett purchased in Canada several items in the early 1980s, including the two ice pails shown in his book (*Derby Porcelain, 1748–1848*, 2002, page 219, colour plate 207), and these were exhibited at the Royal Academy in 1985. The ice pails are now in the Derby Museum. It has been proposed that because of the genealogy and armorial bearings this service could not have been decorated by Billingsley and other names such as John Brewer, John Stanesby and Martin Randall have been suggested in this role.

It is reasonable, therefore, that the armorial bearings on the service are now examined closely to substantiate their credibility for dictating the chronology for dating this service. In this respect, the hatchments in St Peter's Church, Tollerton, hold a vital clue; here the armorial bearings and crests for generations of the Barry, Pendock-Neale, Pendock-Barry and Pendock Barry-Barry family are on display and have been faithfully reproduced in colour in a small booklet (E. Day, *History of the Hatchments, St Peter's Church, Tollerton, Nottinghamshire*, 2012) which was written a decade after John Twitchett published his book attributing the *Pendock-Barry* service to a later date than was first believed. Hatchments are accurate heraldic funeral memorials bearing a coat of arms and crest which were intended to be displayed initially in or outside the ancestral home of the deceased and then to be lodged in their local church after a suitable period of mourning. A detailed description of the relevant hatchments in St Peter's Church especially for Pendock Neale (Pendock Barry after 1811 until his death in 1833) and

his son, Pendock Barry Neale (Pendock Barry Barry on his succession in 1833 until his death in 1847) is illuminating: Susanna Neale, wife of Pendock Neale, died in 1811, and her hatchment shows a principal quartering for Neale followed by Pendock and Barry—with the inclusion of the Barry motto!! Her husband, Pendock Neale, who succeeded to the lordship of the Manor in 1773 and who died in 1833, has a principal quartering for Barry followed by Pendock and also Neale. His son, Pendock Barry Barry, has by 1847 adopted fully the armorial bearings for Barry solely, dropping Neale and Pendock, but retaining the three crests for each family coat of arms. We can conclude from this that the Barry arms in quartering were clearly being used by Pendock Neale many years before their formal granting by Royal warrant in 1812. The armorial bearings on the so-called *Barry-Barry* service plate, illustrated in Fig. 7.2 of this study, match exactly those of the hatchment of Pendock Neale in St Peter's Church, Tollerton, and contain only the arms of Pendock and Barry but dropping those of Neale. So, the first comment is clearly that this should be correctly termed the *Pendock-Barry* service not a *Barry-Barry:* secondly, the use of the Barry quartered arms, although strictly relating to a post-1812 Royal decree, was actually undertaken some while before that—and were adopted in the hatchment of Susannah Pendock Neale, who died before the award of Barry arms was approved. Hence, we can definitely say, firstly, that the *Barry–Barry* service should be more accurately re-named the *Pendock-Barry* service—it is certainly not appropriate to call it the *Pendock Barry-Barry* service as this title belongs to Pendock Barry's son and heir, who displayed the Barry arms only. Also, the adoption of the Barry armorial bearings in quartering by Pendock Neale seems to pre-empt their actual official granting to him in 1812 so the cut-off date of 1812 proposed hitherto is not really finite and the quartered arms could have been used before that.

Secondly, the service is definitely Derby in origin and could relate to a much wider time frame between 1773 and 1833 but some doubt can be cast upon the execution of the decoration taking place at the Derby factory—in fact it is extremely likely that it was decorated elsewhere, and therefore, why not by the finest porcelain painter of his age known as the "*Rose Painter*", William Billingsley. The crest for the Barry arms has three red roses: as such it would be an important inclusion for the ceramic decoration—and the finest rose painter available would be desirable to execute this commission! The quality of the rose painting in particular on the *Pendock-Barry* plate is exceptional and all objections mooted thus far against Billingsley being the pointer are directed at the dateline range, which excludes him from employment at the Derby factory. However, as we have seen proposed above, Billingsley did decorate items on commission elsewhere—he did not depart Derby and contact with William Duesbury on bad terms at all and a similar situation existed when he left John Coke at Pinxton some years later. The author has in his collection a Derby cabinet cup and deep saucer with a puce mark and a wreath of roses which are accredited to Billingsley and which match the splendour of those shown around the rim of the pieces in the *Pendock-Barry* service. Even if the timeline is refined to the period 1806–1810, this would support the suggestion made by Twitchett and others, and could have occurred if Pendock

Neale perhaps pre-empted his award of armorial bearings by a few years and had this service created to celebrate this forthcoming event in 1812.

The final question still remains unanswered: why is there no mention of this beautiful work of ceramic art in the Derby pattern books and workbooks? There is no reasonable response to this unless the Derby proprietor, either William Duesbury or Robert Bloor, did not wish to advertise his engagement of Billingsley as decorator after he had left Derby some years before and that no attempt had been made then or just afterwards to entice him back—ignoring the advice and direct entreaty of their esteemed London agent, Joseph Lygo, to William Duesbury to prevail upon him to remain at Derby: Billingsley, of course, as we have seen had his sights set elsewhere by that time and he was intent upon manufacturing the highest quality porcelain ever created.

In summary, therefore, this case study provides an exercise in attribution of a ceramics service which possibly seeks a refinement in the time frame during which the commissioning and attribution of a service manufacture and decoration were made: it also demonstrates the huge research problem and potential for miss assignment which faces ceramics historians when a service is not logged in a factory work book or, in the case of the Swansea and Nantgarw factories, when these documents are at best fragmentary or do not exist at all. In that sense, it gives the reader and researcher a much greater perspective on the difficulties that need to be overcome especially when based upon assumptions which may not possibly be strictly correct.

Appendix E
A Detailed Comparison Between The *Lord Ongley* Derby Service and its Nantgarw Precursor

The case of the *Lord Ongley* service has already been considered earlier in the chapter on commercial exploitation relating to Swansea and Nantgarw porcelains, where Robert Bloor, who assumed control of the Derby China Works in 1811, acquired examples of Nantgarw plates from John Sims' enamelling atelier in London and took these back to his Derby China Works for "copying" and the eventual creation of his sumptuous service commissioned for Lord Ongley. It is interesting that the actual date of commissioning and nomination for artistic decoration and gilding for this prestigious service are not evident in the Derby pattern books: John Twitchett (*Derby Porcelain*: 1748–1858, 2002) has concluded that William Corden painted the service in the period 1820–1825, much later than Bloor's acquisition of his Nantgarw exemplars from London and curiously and chronologically long after Corden had departed from Derby around 1819. Some research into the Ongley family genealogy was undertaken here to ascertain if any clues could be forthcoming which may shed some light on the initiation of the commission of the service with the Derby China Works in the early 1820s.

Robert Henley (1721–1785) inherited the estate of Sir Samuel Ongley, a shrewd investor in the South Sea Company and a director of the Honourable East India Company who had purchased it form the earl Bolongbroke in 1698, and adopted the name Robert Henley-Ongley; he was a lawyer and influential MP for Bedfordshire and was created the first Baron Ongley of Old Warden, Bedfordshire in 1776 under the Irish peerage since he could then still sit in the House of Commons. He was succeeded in 1785 by his son, also Robert Henley-Ongley, 2nd Baron Ongley, and thence by his eldest son Robert Henley-Ongley (1803–1877) as the Third Baron Ongley of Old Warden at the age of 11 years old in 1814. In his early twenties, i.e. around 1823–1825, and newly in receipt of his considerable fortune (which should have occurred at the age of his majority in 1824) the Third Lord Ongley decided to transform a 9-acre bog in north east Bedfordshire into a Swiss Alpine paradise—complete with hills and structures, ponds, a Swiss Cottage, a grotto, ironwork bridges and alpine gardens. He threw noteworthy extravagant parties, exciting much comment in the local press, which belied his motto *"Mihi cura futuri"*—translated as "I am careful for the future"! It seems fitting therefore that in this period of extravagant ostentation he would order a very sumptuous and

H.G.M. Edwards, *Swansea and Nantgarw Porcelains*,
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exceedingly heavily gilded, highly decorated dessert service from Derby for the lavish entertainment of his friends at his newly created Swiss paradise—Robert Bloor charged Lord Ongley 5 guineas a plate, which was incredibly expensive for plates in a porcelain service at that time. The first reference to this important service is provided by John Haslem (*The Old Derby China Factory*, 1876):

> One of the most costly services ever got up at Derby was for Lord Ongley, about 1820–1821. It was a dessert set, each piece of which was decorated in a different manner, the patterns being rich and very elaborate. Most of the pieces were painted with figure subjects, which wee selected by His Lordship, and the plates averaged about five guineas each. Several were copied from Nantgarw plates which had been decorated in London, at Sims's establishment, from whom Mr. Bloor had purchased them shortly before. The figure subjects on the Nantgarw plates were by a clever artist named Plant, and were probably the best things done on that china. Among them were several charming groups of children, and one was a winter piece with figures snowballing. William Corden, who left the factory a short time before, was employed to paint the figure subjects on Lord Ongley's service. The Nantgarw plates were afterwards sent to the London warehouse, and those painted by Plant were in the course of time disposed of, but the greater part remained there until the close of the factory, and shortly afterwards the best of them were purchased by Sir Henry de la Beche for the Museum of Practical Geology, where they are now. Two of the same lot are in the writer's possession.

The date provided by Haslem for the execution of this service, viz., 1820–1821, would fit in very nicely with Robert Bloor's visit to John Sims' atelier in London where he saw James Plant at work decorating the Nantgarw plates referred to in his book. However, this conjures up a possible chronological problem as Lord Ongley in 1820–1821 would have been barely 17–18 years of age and would presumably not yet have inherited fully his family wealth: it is possible, of course, that he was able to access some money from his family lawyers, trustees and executors to facilitate his ongoing expenditure and this is perhaps the most reasonable explanation for the commissioning of this expensive service at this early date but it is perhaps more acceptable to think about the later date of 1824–1825 as the more reasonable. It should be noted, too, that William Corden, the artist responsible for decorating the "figure subjects" on the *Lord Ongley* service, had already left Derby by 1820 and therefore must have been commissioned to undertake his decoration externally, which again supports the idea proposed earlier for the complete absence of mention of this service in the Bloor Derby workbooks for 1820–1825. This is possibly the reason behind an alternative date of 1824–1825 proposed by John Twitchett for the accomplishment of this service production—some years after Bloor's acquisition of his Nantgarw exemplars form London.

The 3rd Baron Ongley clearly had financial problems and he started mortgaging his estates in 1837 and on several repeated occasions until 1861: it is reported that by 1848 over two-thirds of his estate income was required to pay the mortgage interest on his loans. In 1872, the Ongley estate at Old Warden, in Bedfordshire, was in a dilapidated condition and was sold to Joseph Shuttleworth, who later renovated it and revitalised the Swiss Garden. It would be reasonable to propose that the *Lord Ongley* service, or what survived of it, would perhaps have been sold at the disbursement and fragmentation of the estate in 1871, or even before that, with a possible purchase by the 4th Lord Muncaster, but exactly how this important Derby service become to be housed at Muncaster is not known.

The author has engaged in a detailed comparative analysis of a Nantgarw exemplar from 1817–1819 and plates from the *Lord Ongley* service, an example of which is illustrated in John Twitchett's book on Derby porcelain (*Derby Porcelain 1748–1858,* 2002, page 217, Colour Plate 202), which is duplicated here with my own photograph, reproduced with permission of Peter Frost-Pennington Esq., of Muncaster Castle, in Fig. A.1. Morton Nance (*The Potteries and Porcelain of Swansea and Nantgarw,* 1942) has also described a plate he has seen with Bloor Derby marks which is "*identical*" with a Nantgarw exemplar decorated by James Plant in John Sims' London workshops even down to the subject matter of children playing snowballs in the snow—this description is so close to that of the *Ongley* service we are considering here and the example shown in Fig. A.1 that it is reasonable to infer that it could be from the same service, or at least a trial plate produced for inspection, approval and acceptance before the actual service was commissioned! However, as we shall see as specified below, the *Ongley* Derby service plate shown here in Fig. A.1, although very similar indeed to its Nantgarw precursor design (as confirmed by Haslem's account in his book dated 1876 and reproduced above) to pass even a close inspection, is not in fact identical to the Nantgarw version despite several suggestions otherwise.

Figure A.1 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing children playing at snowball and vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

The differences and similarities between the Derby *Lord Ongley* service and its Nantgarw precursor upon which its design was apparently based can be summarised as follows from a visual comparison made of two exemplars:

- Both plates have twelve indentations at the rim encompassing six large and six small curved edges all of, respectively, equal proportions.
- The actual measurements of the plates are not prescribed but it appears that both are from dessert services (Haslem, *The Old Derby China Factory*, 1876) and hence would be expected to lie within the acceptable range quoted by Dr. John (*Nantgarw Porcelain*, 1948) of 8.5–9.25″ for Nantgarw porcelain.
- The London Nantgarw plate would have dentil edge gilding as an appropriate practice for the enamelling ateliers there, whereas the Derby plate has a continuous unbroken gilding at the rim—which is hence actually more akin to the Swansea porcelain or even locally decorated Nantgarw products.
- The C-scroll moulding of the *Ongley* service is very similar but not identical to that of its Nantgarw counterpart and there are several subtle distinctive differences between them to be seen on close inspection using magnification. Firstly, the feather edging on the Derby C-scroll foliage is more indefinite that that of the Nantgarw, which has a very clear composition and construction of only three distinct protuberances. Both C-scrolls contain a central six-leaf floret located between the left and right hand scrolling, but Nantgarw has the stem located on the left and Derby has it located on the right. A very unusual distinction is that the six pairs of Derby C-scrolls are not identical, unlike Nantgarw, in that there are alternate differences in detail and flower stem composition. The supporting ribbons on the Nantgarw plate are much more free flowing and are of an increased curvature that the Derby versions, which therefore appear to be more formally composed. The terminal floret on the left C-scroll in Nantgarw is a distinctive bell-shaped tulip form unlike that in its Derby version, which is another six-leaved floret. The right-hand Nantgarw C-scroll encases two florets, whereas the Derby has one only—in this respect, the Derby C-scroll is similar to that of Swansea. Jones and Joseph (*Swansea Porcelain,* 1988, p. 162) use this observation as a discriminator between Swansea and Nantgarw moulded border porcelains. Also, the appearance of the Derby C-scroll moulding is appreciably not as crisp as its Nantgarw counterpart.

In the light of these comparators, therefore, we can reasonable infer that, contrary to some expressed literary opinion (for example, Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw,* 1942), the Derby *Lord Ongley* service cannot be an *identical* copy of its Nantgarw precursors, but was most likely inspired and strongly influenced by the Nantgarw examples brought back from London by Robert Bloor in about 1820 for his china works at Derby. The Derby pieces are truly very close indeed to their Nantgarw versions, but there are enough points of difference to establish with certainty that, at least for the comparators studied here,

Nantgarw was used as the generic idea but not as an absolute true copy—and of course this then excludes the following idea that perhaps moulds would have been made from the Nantgarw plates purchased by Robert Bloor for the *Ongley* Derby service commission. The *Ongley* service was one of the most expensive created by Derby and it is recorded that Lord Ongley paid 5 guineas per plate for his commission (Haslem, *The Old Derby China Factory*, 1876). We still cannot answer the question as to why Derby seemed not to have persisted in using the moulds and decoration of the *Ongley* service for the creation of other services of this type and it seems that the price paid by Lord Ongley therefore would have reflected the one-off nature of his service with all the background production costs thereby involved in this exercise. Another mystery, of course, is the absence in the Derby pattern records for the commissioning of this important service—and it seems well established that William Corden undertook its decoration after he had left the employ of the Derby China Works and had set up as an independent decorator. Finally, who accomplished the very fine gilding on the service …. a local Derby artisan, perhaps, but again very unusual that this went unacknowledged when Derby was so justifiably proud of its gilding that it had numbered lists of its recognised and assigned gilders? Only one other Derby porcelain moulded C-scroll bordered dessert service is cited in Twitchett's authoritative and scholarly book (*Derby Porcelain*, *1748–1858*, 2002, p. 199, monochrome plate unnumbered) and this depicts some 14 items from a part-service comprising two ice-pails and liners, comport, dishes, tureen and stand and two dessert plates which show the gilded C-scroll border as evidenced in our example discussed in Fig. 19.11. Unlike the latter, however, the blue-ground coloured border is completely devoid of any other decoration and the remaining enamelling consists of pink roses and blue forget-me-nots in the Billingsley style, although the cursive red mark post-dates Billingsley's departure from the Derby works, and is cited as ~1810 and interestingly pre-dating the Bloor Derby stencilled mark form about 1820–1825.

In a final commentary, the surviving remnants of the *Ongley* service now reside at Muncaster Castle in Ravenglass, Cumbria, where they were located by John Twitchett some years ago, in 1983, on a visit he made to the Castle, which has been in the possession of the same family since the early 1200s. It has been very fortunate to have been invited by Peter Frost-Pennington Esq. to view the *Lord Ongley* service at Muncaster Castle in my research for this book during the summer of 2016: the remaining service sits in a mahogany cabinet in the Dining Room, Fig. A.2, and comprises eight dessert plates (shown sequentially in Figs. A.3, A.4, A.5, A.6, A.7, A.8 and A.9 in addition to that already shown here in Fig. A.1) and two dessert sauce boats with lids and stands (shown in Figs. A.10 and A.11). There are in addition two associated dessert plates in a similar style, with embossed borders, but which clearly are not *en suite* with the Ongley dessert plates, shown in Figs. A.12 and A.13, and a cabinet cup and saucer (which proved to be Swansea porcelain), which has been described earlier and shown in

Figs. 19.14 and 19.15. The following information can now be provided from a detailed study of these *Ongley* service items, for which the author acknowledges with gratitude the assistance of Ms. Sharon Arrowsmith, curator at Muncaster Castle;

- The measurements of the dessert plates are as follows: diameter 9.75″ and depth 1.0″, which lie outside the range of Nantgarw dessert plates as defined by Dr. John (*Nantgarw Porcelain*, 1948).
- Each *Ongley* service plate is marked with a Bloor Derby red stencil applied mark on the base, as shown in Fig. A.14; it should be noted that this mark is typical of the early Bloor Derby mark from around 1820–1825 as identified by John Twitchett (*Derby Porcelain*: 1748–1848, 2002, pp. 38 and 39) but in addition has the addition of full stops after each word BLOOR and DERBY. In an ancillary study of the Bloor Derby China Works stamps it is revealed that Robert Bloor is believed to have introduced the stencilled red Bloor Derby stamp around 1820–1825 to replace the often hastily and carelessly drawn cursive Derby mark with a crown and crossed swords. The earliest Bloor Derby mark appeared as stencilled script capitals in twin concentric circles without a crown, which was followed by the addition of a central crown later, both BLOOR and DERBY not possessing full stops after each word. The mark on the *Ongley* service plates, and also on the associated two pieces referred to above, seems to represent an intermediate variation between these two extremes and contains BLOOR and DERBY with full stops inside the two concentric circles containing a crown. It is also relevant that a small enamelled gilder's mark of "1" is found inside a footrim of an *Ongley* service plate: this can be correlated with the Derby gilders' listing of the early 19th century with Samuel Keys, who was one of the finest gilders employed at Derby between 1785 and about 1835, where it was noted that he excelled in "arabesque gilding of the highest quality" and that he undertook gilding work only on the finest quality services.
- The Bloor Derby backstamp does not obscure a Nantgarw impressed mark, so confirming that the Nantgarw exemplars have not been used to make up the service.
- The typical glaze crazing expected for Bloor Derby porcelain can be seen in Fig. A.14 and its poor translucency evident from the photograph taken in transmitted light shown in Fig. A.15. Again, this is atypical of Nantgarw porcelain, but very characteristic of Bloor Derby.
- The excellent transfer of observed moulding detail from the front to the back of the dessert plates, that is so characteristic of similar Nantgarw dessert plates, is not evident here.
- The asymmetric detail for the embossed floral border with ribbons noted earlier for the dessert plate studied in Fig. 21.3 is shown in enlargement in Fig. A.16; this, again, is certainly non-standard for Nantgarw and Swansea productions.

- The decoration of the dessert plates is of a superb quality and each plate has a different theme based on several rustic, European and Eastern architectural pictures with at least two naval and harbour scenes, perhaps reminiscent of scenes that would have been encountered in a "Grand Tour"? Did the young Lord Ongley return from a Grand Tour in the early 1820s, inspired by these images?
- The borders are heavily gilded and stippled, and the six vignettes are composed of scenes involving significantly different combinations of birds, flowers, fruit and butterflies. For example, one dessert plate has only butterflies in the reserves (Fig. A.6) whilst the two sauce boats, covers and stands have only pink roses depicted in their vignettes and in central locations in place of the landscapes and scenes. This correlates with the statement of Robert Bloor to John Haslem cited above that the *plates* of the service were decorated by Corden.
- The two associated plates which can be perhaps rather loosely described as "*Ongley*-type" are definitely from two different Bloor Derby services, with theatrical themes as a central decoration and a coloured border of blue (Fig. A.12) and green (Fig. A.13) in a Derby copy of the desirable Sevres style with gilded C-scrolls but having gilded floral sprays in their vignettes replacing the enamelled flowers, fruit, birds and butterflies. Both are clearly marked again with Bloor Derby stencilled marks of the same type discussed above.

Figure A.2 Mahogany cabinet at Muncaster Castle containing surviving remnants of the *Lord Ongley* service: comprising eight dessert plates and two sauce boats with lids and stands. Also included with the Ongley porcelain are two associated Bloor Derby plates decorated in the Sevres style and a Swansea porcelain cabinet cup and saucer. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.3 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a naval scene with a man-o'-war in heavy seas and vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.4 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a classical architectural scene and vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.5 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a harbour scene with vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.6 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a rustic scene with animals and vignettes of butterflies only. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.7 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a scene of a river with castellated battlements and with vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq.

Figure A.8 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a city scene with onion domed churches (Moscow?) and with vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.9 Dessert plate from the sumptuous *Lord Ongley* service, Derby porcelain, Bloor period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819, showing a Venetian canal scene with gondolas and traders and with vignettes of birds, fruit, flowers and butterflies. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.10 Sauce boat, lid and stand from the *Lord Ongley* Bloor Derby service; period, ca. 1820, with Nantgarw-style moulded C-scroll border and inspired by James Plant's Nantgarw decoration at John Sims' atelier, London, ca. 1817–1819. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq.

Figure A.11 Stand from the sauce boat shown in Fig. A.10; note that the vignettes all contain just single pink roses unlike the dessert plates and there is no central landscape scene. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.12 Bloor Derby dessert plate in Sevres style, with Nantgarw-style embossed border and bleu-de-roi border ground colour, with central scene of figures strolling in a landscaped garden in a palatial setting, the vignettes contain gilded flowers only; period 1820–1825. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.13 Bloor Derby dessert plate in Sevres style, with Nantgarw-style embossed border and emerald green border ground colour, with central scene of two figures in Renaissance costume; the vignettes contain gilded flowers only, period 1820–1825. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.14 Bloor Derby stencilled mark on the *Lord Ongley* service dessert plates; note the surface crazing of the glaze. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.15 Lack of translucency of the Bloor Derby porcelain body of an *Lord Ongley* service dessert plate; taken in transmitted light. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

Figure A.16 Detailed enlargement of the Nantgarw-type embossed border of the *Lord Ongley* service dessert plate shown in Fig. A.1; note the asymmetry of the floral embossment and C-scrolls. From the private collection at Muncaster Castle, Cumbria. Reproduced with kind permission of Peter Frost-Pennington Esq

We may conclude, therefore, that the surviving remnants of the *Lord Ongley* service are truly early Bloor Derby in origin: they are certainly designed to masquerade as Nantgarw or Sevres in style, but they do not contain Nantgarw items. Measurements indicate that that the moulds could not have been made at the Derby china works from Nantgarw dessert plate exemplars, which has been proposed or implied in previous literature comments, and this is confirmed by a comparative analysis of the intricate details of the embossment on both the Bloor Derby and Nantgarw plates.

Specimens of an advertised "Lord Ongley" Derby porcelain service pattern appear for sale in auction sites: these actually have, in my opinion, little or no resemblance at all to the genuine specimen shown in Fig. A.1 here. For example, an item of this description and advertised as such is shown here in Fig. A.17; this does not even have a C-scroll moulded border nor any extensive quality gilding, the twelve indentations at the rim are missing and the cavetto is a continuous band of unbroken landscape decoration of ruined castles on hilltops with a preponderance of a brown and pale blue background colourations. The edge rim gilding differs significantly from that of the *Ongley* service in that it is dentil edged and is not continuous. Clearly, the subject matter of the central decoration of children playing snowballs in a landscape owes much to its James Plant artistic origin at John Sims' atelier, as observed by Robert Bloor personally around 1819, and to the *Ongley* service theme which presumably gives credibility to this advertised assignment to an *Ongley-type* dessert plate but there the resemblance ends. In some recent similar examples of dessert plates appearing for sale as items from an "*Ongley-type"* service, which seem to be potentially *en suite* with that illustrated in Fig. A.17 with scenes of classical architecture and locations, the decorators are ascribed as variously William Corden, Claude Lorrain and Daniel Lucas and their date of production is given as Bloor Derby, 1820–1840, in accord with the stencilled marks on the reverse of the plates. This date could, of course, be significantly later than any ascribed hitherto by John Haslem, John Twitchett or myself here to the commissioning by Lord Ongley of his Derby service from Robert Bloor at the Derby China Works, and may reflect a later commission from the Bloor Derby China Works which did not involve the delicate embossment and intricate gilding of the originals, perhaps even post-dating the departure of the accomplished gilder Samuel Keys from Derby?

Figure A.17 Dessert plate from a Bloor Derby porcelain "Lord Ongley-type" dessert service which shows its origin in the same theme as regards the central picture of children snowballing and playing in the snow—compare with the genuine Ongley plate in Fig. A.1. Note, however, the moulded border, extensive gilding and birds, flowers, butterflies and fruit decoration in the rim vignettes are completely absent. Instead, there is a continuous theme of ruined castles in a rocky landscape. *Private Collection*

Appendix F
Nantgarw Porcelain: Measurements and Sizes

Although the measurements of Swansea porcelain items have been recorded in detail by Jones & Joseph (*Swansea Porcelain*, 1988) and have been referred to earlier, those of the Nantgarw factory are rather less well documented: Dr. John *(Nantgarw Porcelain*, 1948) has described the shapes and sizes of Nantgarw plates in particular, particularly drawing attention to the number of indentations at the rim and the embossment, the striking feature is the rather wide range of measurements quoted for each of eight specific categories—from about 8 to 10½″. diameter with a variation in each category of up to ½″, representing some 5% or more in overall measurement accuracy. A most unusual feature that is absent completely from Dr. John's survey of Nantgarw shapes (*Nantgarw Porcelain*, 1948) is the presence of large platters, meat plates or serving dishes, which must surely have been commissioned as part of the large Nantgarw dinner or dessert service orders, although but one mention only has been made there in passing of a large oval platter. In Swansea porcelain services (Jones and Joseph, *Swansea Porcelain*, 1988) there are large items referred to as meat plates and strainers with octagonal and oval shapes, having dimensions of 16″ × 12″, 20″ × 15″, and 22″ × 8″, quoted variously. It is appreciated that these very large items of porcelain would have been ordered for only the largest dinner or combined dinner-dessert services and would have perhaps been subject to extensive damage in handling during everyday usage, so their attrition would have been expected to be high and their survival rate would have been rather low. Also, because of the very high kiln wastage losses in Nantgarw porcelain production especially, resulting in malformed and distorted fired pieces which would have been expected to have occurred more with very large flatwares, such as the meat dishes or platters we have alluded to earlier, the presence of these platters in a Nantgarw service surviving today would be expected to be rare indeed.

With this in mind, an inspection has been made of the newly discovered *Farnley Hall* Nantgarw dinner/dessert service, which has been recounted earlier in this book in Chap. 18, to ascertain the measurements especially of any larger items which have survived and also to attempt to narrow down the measurement

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dimensions of the dinner/dessert plates which comprise this service It will be recalled from an earlier description that this service was believed to number in excess of 100 pieces at source and has been commented on by Dr. John as being of an exceptionally large size and therefore could provide an excellent source for the potential discovery of surviving larger Nantgarw porcelain service items. The service has recently been identified by the author in the cellars of Farnley Hall in North Yorkshire, and has 37 pieces still surviving. The actual details of the measurement and composition of the *Farnley Hall* service as it survives at present is as follows:

Total number of surviving porcelain items in the *Farnley Hall* service:

Dinner/ Dessert plates: 20, circular, indented rim, range of diameters 245–251 mm, mean 248 +/− 3 mm (1.2%)

Small tureen stands: 3, circular, indented rim, range of diameters 183-185 mm, mean 184

+/− 1 mm (0.6%)

Soup dishes: 5, circular, indented rim, range of diameters 237–241 mm, mean 239

+/− 2mm (0.8%)

Large serving dishes; 2, circular, indented rim, range of diameters 313–314 mm, mean 314 +/− 1 mm

Small platters: 3, rectangular, indented rim, range length 284–285 mm, mean 284

+/− 1 mm (0.4%)

breadth 217–217 mm, 217 +/− 0 mm (0%)

Medium platters: 2, rectangular, indented rim, range length 324–325 mm, mean 325

+/− 1 mm (0.3%)

breadth 246–246 mm, mean 246 +/− 0 mm (0%)

Large platters: 2, rectangular, indented rim, range length 360–362 mm, mean 361

+/− 1 mm (0.3%)

breadth 271–272 mm, mean 272 +/− 1 mm (0.4%)

Several comments and conclusions can be made as a result of these detailed measurements made on the remaining 37 items of Nantgarw porcelain from the *Farnley Hall* service. Firstly, the range of measurements of the plates within the service is significantly reduced to only 1.2% from the 5% derived from Dr. John's original survey, which may, of course have included many more service items with more variance expected between these types. Secondly, we can now present for the first time some quantitative information regarding the precise measurements of some larger Nantgarw items such as the platters and serving dishes. The 20 plates here classified as dinner/dessert plates, measure exactly 9.75″ in diameter, which is just inside the upper limit of Dr. John's range of 8–10.5″; this means that we can probably reclassify them as "dinner plates in type—although it must be remembered that combined dinner/dessert services were very normal for commissions". The presence of the deep soup dishes also imply that this service was likely

to have been used for dinner as well as dessert in practice, being some 9.4″ in diameter.

It is an interesting point to note here that the eight surviving plates from the *Lord Ongley* service commissioned from Bloor Derby in the early 1820s which used Nantgarw plates as their inspiration measured up at an average diameter of 9.75″—which is exactly that of the Nantgarw plates in the *Farnley Hall* service. So, the suggestion that Robert Bloor had possibly made moulds from the Nantgarw congeners for his *Ongley* designs may not have been so ridiculous after all! However, as we have seen in Appendix E, there are other significant differences between the mouldings of the Derby and Nantgarw versions to allay any suspicions of this having occurred.

Appendix G
Swansea Script Marks and their Attribution to William Billingsley's Decoration

In Chap. 9 the conclusions of a professional graphologist assigned to evaluate the script Swansea marks on plates, cabinet cups, teacups and saucers were outlined in Jones and Joseph (Swansea Porcelain, 1988) and it was demonstrated that it was possible to scientifically discriminate between several painters and decorators, for whom "standard" and specified script marks were provided. This was further elaborated in this book, where three distinguishing criteria were recognised for the identification of William Billingsley's script Swansea mark (as exemplified in the cursive mark number 3 on p. 29, Jones and Joseph, *Swansea Porcelain*, 1988): namely, the cursive capital S, the leading trailing w and the contrived linkage between the a and the n.

In Jones and Joseph (*Swansea Porcelain*, 1988, pages 240–245) a very careful study was made of William Billingsley's handwriting in a letter he wrote to John Coke of Pinxton on the 10th October, 1795, and also a receipt for some Masonic beakers provided by Billingsley at Nantgarw to Mr. Hopkin Williams on the 20th August, 1819, both of which were reproduced there fully. The major problem, however, is that there were only a few pieces of verifiable Swansea porcelain that could be definitively attributed to Billingsley available at that time to the investigators which had the characteristic red cursive Swansea script mark and even fewer with any accompanying descriptors of landscapes that were painted thereon. Jones and Joseph say that:

> "Billingsley's painting is generally to be found on the Swansea glassy or finest duck-egg porcelain which he would have preferred as in many respects they are akin to the Nantgarw body …. In consideration of Billingsley's landscape painting on Swansea porcelain, we do not have the assistance, except in the case of a few pieces, of either the Swansea script mark associated with his painting or a written description of the landscape to compare with examples of his writing … until further research is carried out and new evidence brought to light the problem of authoritatively identifying William Billingsley landscapes on Swansea porcelain remains".

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DOI 10.1007/978-3-319-48713-7

Also, the reliance that Jones and Joseph had to put upon single, often incompletely marked items of putative Billingsley decorated Swansea porcelain items and a deficiency of more substantial and compatible component service items was summarised in their statement (Jones and Joseph, *Swansea Porcelain*, 1988, p. 28):

> He is unlikely to have decorated complete services but there are only cabinet cups and saucers and other shapes too where by reason of the standard and quality of the painting we can attribute them to Billingsley's hand.

The handwriting on a signed lid belonging to the so-called Mansfield Vase (actually a pair of vases on stands decorated by Billingsley at Mansfield) is shown in Jones and Joseph (*Swansea Porcelain*, 1988, Colour Plates 1 and 6, p. 220) where the signature "Billingsley Mansfield" is given in puce script and this features strongly in their analysis—as will be seen below, this script matches that of the tea service now under investigation here.

Here, we can put these handwriting criteria to the test for a very early Swansea part tea service, comprising teabowls, saucers and two stands in the experimental and rare glassy porcelain body which represented the first trial firings of porcelain manufacture at Swansea, when Billingsley might have been expected to have adopted a very "hands-on" approach to all aspects of the compositional characteristics, the firing regime and also the decoration. In this service, which I understand was discovered many years ago but following the publication of Jones and Joseph's analysis, the badly damaged component items were only attributed to William Billingsley's landscape decoration on stylistic grounds. The white glassiness of the experimental porcelain body is evident, along with the speckled appearance and imperfections in the translucency of the glassy body arising from particulate matter embodied in the porcelain from mineral impurities and possibly decomposed carbonaceous organic matter (with the consequent formation of black particulate amorphous carbon at the operating temperatures of the kiln during the firing process). Examples of tea bowls and saucers from this service, including a very attractive and perfect teapot stand, before the service was dispersed for sale some decades ago are shown here in Figs. A.18 and A.19, A.20 and A.21, A.22 and A.23, and A.24 and A.25; each of these examples has a script Swansea mark written in a muddy red enamel and an additional description of each view, in black enamel depicted in the landscape enclosed in a single circular vignette within a simple gold band. Figs. A.18 and A.19, with serial label number 4, show Newark Castle; Figs. A.20 and A.21, with serial label number 7, show Forge Bridge, Westmorland; Figs. A.22 and A.23, with serial label number 8, show A View in Cumberland (?); Figs. A.24 and A.25, with serial number 17, show a View at Waltham, Hertfordshire. It is illustrative to note that each Swansea script mark exhibits the characteristic criteria of William Billingsley proposed above—namely, the cursive capital S, the leading trailing w and the linked cursive a and n, as shown previously in Figs. 9.3 and 9.4, 9.5 and 9.6. Further supporting evidence of Billingsley's hand can be seen in the rather more extensive descriptors accompanying the saucers and written in black enamel, where the now characteristic cursive characteristics of the S, the a and the n in the Swansea mark can be affirmed.

Figure A.18 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Newark Castle", cursive Swansea script mark., No. 4. *Private Collection*

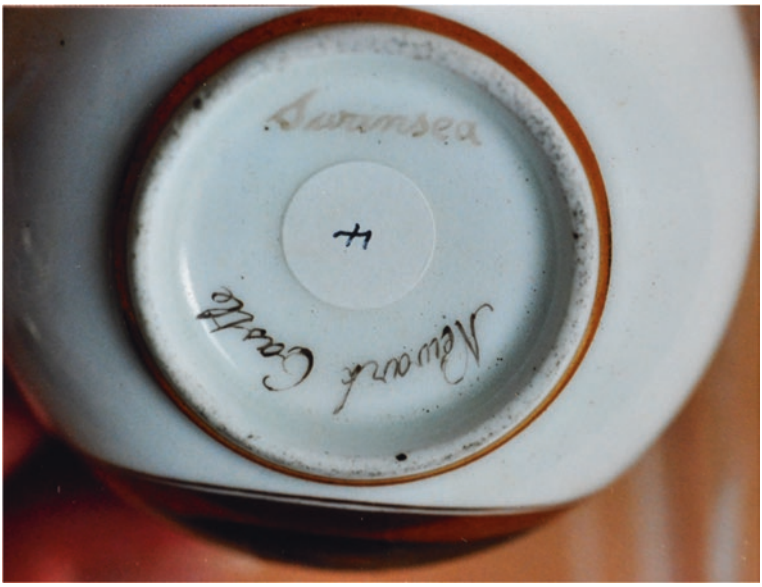

Figure A.19 Base of teabowl shown in Fig. A.18, with Swansea script mark in William Billingsley's hand and "Newark Castle". *Private Collection*

Figure A.20 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Forge Bridge, Westmorland", cursive Swansea script mark, No. 7. *Private Collection*

Figure A.21 Base of teabowl shown in Fig. A.20, with Swansea script mark in William Billingsley's hand and "Forge Bridge, Westmorland". *Private Collection*

Figure A.22 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "A View in Cumberland (?)", cursive Swansea script mark., No. 8. *Private Collection*

Figure A.23 Base of teabowl shown in Fig. A.20, with Swansea script mark in William Billingsley's hand and "A View in Cumberland (?)". *Private Collection*

Figure A.24 Teapot stand from an early experimental Swansea glassy porcelain tea service depicting a "View at Waltham, Hertfordshire", impressed SWANSEA mark, No. 17. *Private Collection*

Figure A.25 Base of teapot stand shown in Fig. A.24, showing "View at Waltham, Hertfordshire", impressed SWANSEA mark. *Private Collection*

Hence, we may conclude positively that William Billingsley indeed was responsible for the landscape decoration on this very early example of a Swansea porcelain service and that the protocols suggested in Chap. 9 can in fact be applied usefully for unknown examples. It is interesting to note in passing that the only example of this service illustrated here which does not possess a script mark is the teapot stand (Figs. A.24 and A.25), where a clear impressed SWANSEA mark can be seen, and which was not usually applied to flatwares such as saucers in a service.

Figures A.26, A.27, A.28, A.29, A.30, A.31, A.32, A.33, A.34, A.35, A.36, A.37, A.38, A.39, A.40, A.41, A.42 and A.43 show other examples from this rather unique service which illustrate the script hand of William Billingsley on teabowls, a circular stand, saucers and slop bowls, depicting the individual scenes described in a simple gold-lined vignette in black enamel script. Figure A.44 (No. 20) does not have a picture of the associated scene whereas Figs. A.45 (No. 5), A.46 (No. 16) and A.47 (No. 2) show the landscape scenes but are missing their descriptors

Figure A.26 Saucer from an early experimental Swansea glassy porcelain tea service depicting "Amberley Castle, Sussex", No. 1. *Private Collection*

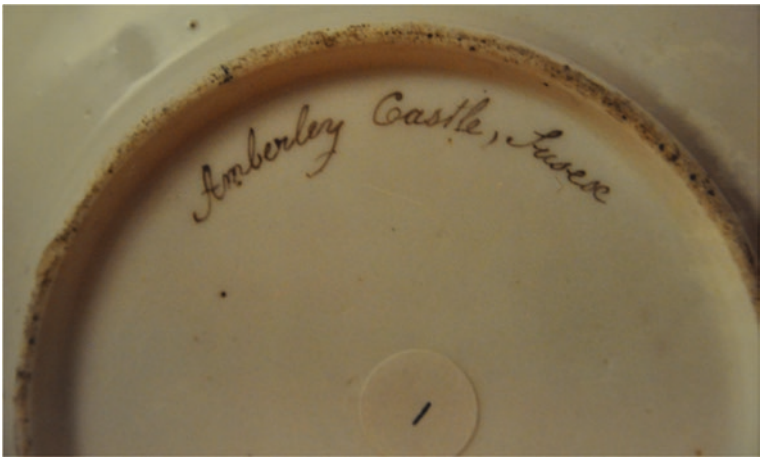

Figure A.27 Base of saucer shown in Fig. A.26, with Swansea script mark in William Billingsley's hand and "Amberley Castle, Sussex", *Private Collection*

Figure A.28 Saucer from an early experimental Swansea glassy porcelain tea service depicting "Kenilworth Castle, Warwickshire", No. 3. *Private Collection*

Figure A.29 Base of saucer shown in Fig. A.28, with Swansea script mark in William Billingsley's hand and "Kenilworth Castle, Warwickshire". *Private Collection*

Figure A.30 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "De-La-pre Abbey", No. 6. *Private Collection*

Figure A.31 Base of teabowl shown in Fig. A.30, with Swansea script mark in William Billingsley's hand and "De-La-pre Abbey". *Private Collection*

Figure A.32 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Isleworth Middlesex", No. 9. *Private Collection*

Figure A.33 Base of teabowl shown in Fig. A.32, with Swansea script mark in William Billingsley's hand and "Isleworth Middlesex". *Private Collection*

Figure A.34 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Kirkham priory, Yorkshire", No. 10. *Private Collection*

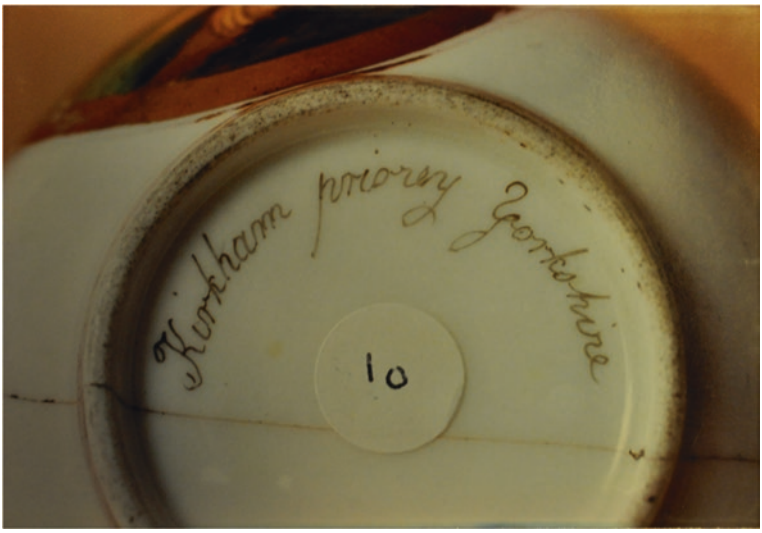

Figure A.35 Base of teabowl shown in Fig. A.34, with Swansea script mark in William Billingsley's hand and "Kirkham priory, Yorkshire". *Private Collection*

Figure A.36 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Langollen Vale", No. 11. *Private Collection*

Figure A.37 Base of teabowl shown in Fig. A.36, with Swansea script mark in William Billingsley's hand and "Langollen Vale". Note the mis-spelling of the Welsh location, Llangollen, as William Billingsley was not a Welsh speaker! *Private Collection*

Figure A.38 Teabowl from an early experimental Swansea glassy porcelain tea service depicting "Cross of the black Friers Hereford", No. 12. *Private Collection*

Figure A.39 Base of teabowl shown in Fig. A.38, with Swansea script mark in William Billingsley's hand and "Cross of the black Friers Hereford". *Private Collection*

Figure A.40 Slop bowl or open sucrier from an early experimental Swansea glassy porcelain tea service depicting "Remains of Sir Henry Vanes house Linconshire", No. 14. *Private Collection*

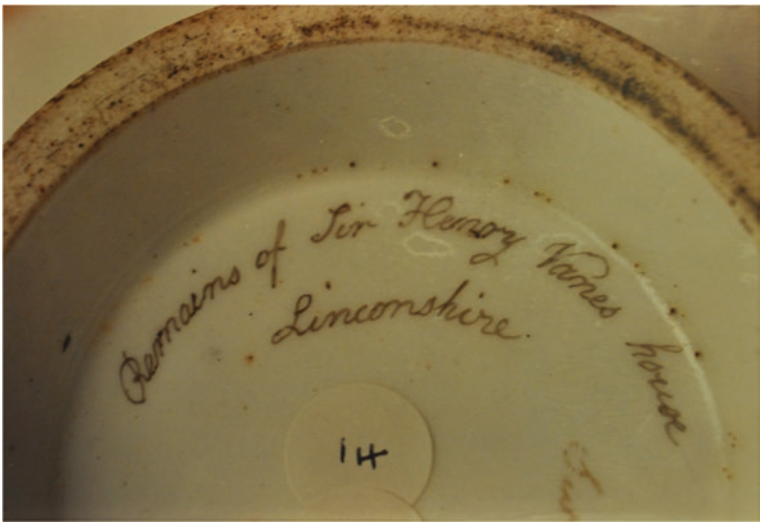

Figure A.41 Base of slop bowl or open sucrier shown in Fig. A.40, with Swansea script mark in William Billingsley's hand and "Remains of Sir Henry Vane's house Linconshire". *Private Collection*

Figure A.42 Slop bowl or open sucrier from an early experimental Swansea glassy porcelain tea service depicting "View in the Isle of Wight", No. 15. *Private Collection*

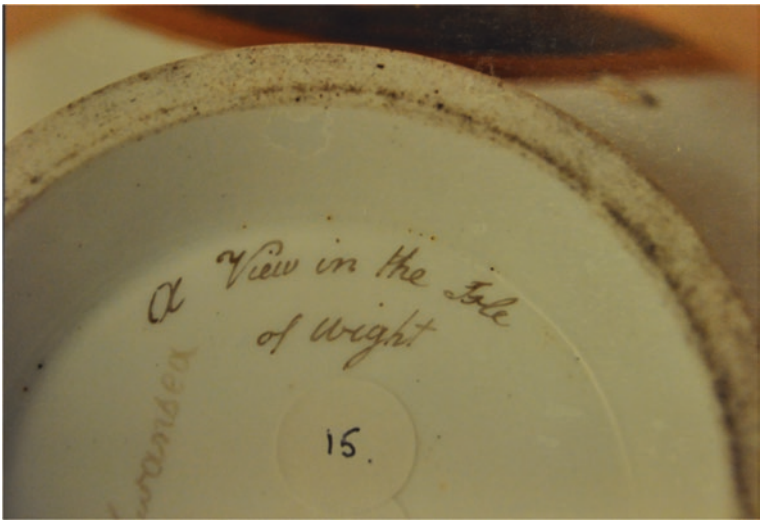

Figure A.43 Base of slop bowl or open sucrier shown in Fig. A.42, with Swansea script mark in William Billingsley's hand depicting "View near Hertford". *Private Collection*

Figure A.44 Base of a slopbowl or sucrier stand from an early experimental Swansea glassy porcelain tea service depicting "A View near Hereford", No. 20. *Private Collection*

Figure A.45 Saucer and bowl from an early experimental Swansea glassy porcelain tea service, No. 5. *Private Collection*

Figure A.46 A slopbowl or open sucrier stand from an early experimental Swansea glassy porcelain tea service, No. 16. *Private Collection*

Figure A.47 Saucer from an early experimental Swansea glassy porcelain tea service, No. 2. *Private Collection*

It will be noted also that several of these examples are missing the red Swansea script enamel mark, which we have characterised as that belonging to the hand of William Billingsley: an important principle applies here in that this important service was dispersed for sales to collectors many years ago, so much of the historical context is now missing from the individual items. Hence the service is reproduced here near to its original state …. from this, we can now survey and analyse visually the handwriting of William Billingsley accomplished in the same narrow period of time whilst he was at Swansea in the early experimental period, probably around 1815, which will surely henceforth aid the identification of his script on single and isolated attributed examples in museum collections. Just from the surviving elements of this service alone an analysis of the handwritten script reveals that we can assign 75% of Billingsley's characteristic script handwriting, comprising all but 9 of his upper case letters and 4 of his lower case letters missing from the total of 52 possible—these being respectively, E, F, O, P, Q, T, U, X, Z and j, q, v and z. The appeal of Sir Leslie Joseph and Jimmy Jones (*Swansea Porcelain*, 1988) in their comprehensive study of Billingsley's script for more examples of this on Swansea china is therefore well addressed in this Swansea glassy porcelain service alone, for which a very fortunate photographic record was taken at the time and has been kept, even of the badly damaged and riveted pieces, before its dissemination and eventual dispersal with the consequential total loss of historical

and forensic context possessed by the whole. The complete list of recorded script descriptors for this service is as follows, maintaining Billingsley's actual script spelling, which is sometimes intriguingly, grammatically incorrect:

No. 1: Amberley Castle, Sussex (Fig. A.27)
No. 3: Kenilworth Castle, Warwickshire (Fig. A.29)
No. 4: Newark Castle (Fig. A.19)
No. 6: De-La-pre Abbey (Fig. A.31)
No. 7: Forge Bridge, Westmorland (Fig. A.21)
No. 8: View in Cumberland (indistinct??) (Fig. A.23)
No. 9: Isleworth Middlesex (Fig. A.33)
No. 10: Kirkham priory Yorkshire (Fig. A.35)
No. 11: Langollen Vale (Fig. A.37)
No. 12: Cross of the black Friers Hereford (Fig. A.39)
No. 14: Remains of Sir Henry Vanes house Linconshire (Fig. A.41)
No. 15: A View in the Isle of Wight (Fig. A.43)
No. 17: View at Waltham, Hertfordshire (Fig. A.25)
No. 20: View near Hertford (Fig. A.44)

In particular, attention is directed to number 11 in the above list of descriptors, which has the curious mis-spelled phrase "Langollen Vale" written on the base, Figs. A.36 and A.37: Jones and Joseph (*Swansea Porcelain*, 1988, page 223, Colour Plates 3 and 3a) show a Swansea baluster vase with a scenic rural landscape with an identically mis-spelled phrase "Langollen Vale" written on its base. Here, the key letters are of an identical shape, especially the capitals L and V, to those in the tea service studied, and match exactly Billingsley's writing in his letter to John Coke alluded to above. The mis-spelling of the Welsh place-name Llangollen is easily explained because it is recorded that Billingsley could not speak Welsh and had to communicate with his predominantly Welsh-speaking workforce at Nantgarw and Swansea through an interpreter. Another point of interest regarding the subject landscape of Fig. A.36 here is that Morton Nance cites a similar example (E. Morton Nance, *The Pottery and Porcelain of Swansea and Nantgarw*, Pottery and Porcelain of Swansea and Nantgarw, 1942, Monochrome Plate CXLVIIA and C, facing page 333): this again features a Swansea baluster vase with the same mis-spelled "Langollen Vale" inscribed below along with "View in Cumberland" and Swansea. We can predict that a scene shown on the other side of the vase shows this alternative landscape. Closer examination of the Morton Nance baluster case indicates it cannot be identical with that shown in Jones and Joseph and discussed earlier; the script Sw of the Swansea mark in the latter is in a different position relative to the descriptor although the "S" is similar in style and corresponds with Billingsley's script number 1 on Jones and Joseph (*Swansea Porcelain*, 1988, page 33). A close perusal of the three landscapes, however reveals that although the Jones and Joseph example is completely different form that given in Morton Nance (two mountains instead of one, no bridge, a farm in the near field, fence and barred gate present, tree arrangement and domed buildings in far field) the view shown in Fig. A.36 here on the Swansea tea bowl has a marriage of both scenes and now contains the farm in near field, domed buildings

in the far field, a bridge, no fence and barred gate and a significant difference in arrangement of the surrounding trees. Hence, although all three scenes can be confidently attributed to the hand of William Billingsley, and confirmed by his written descriptors in each case, they are definitely not simple copies of each other and probably were conceived in artistic memory rather than being copied from a sketch or print of the same scene.

Other important letters in the Coke manuscript that can be matched to the descriptors used in the writing on the Swansea tea service are the capital A, B, O, H, D, N, E, I, C and Y, with lower case letters matching as well! This is incontrovertible proof that Billingsley did indeed decorate the glassy tea service shown here and that this is an important historical source of information: sadly, the service was split up and sold on as individual items many years ago but at least a valuable photographic record was maintained which has proved to be of inestimable value in establishing William Billingsley's handwriting, and therefore his style of landscape decoration on Swansea porcelain. Also, it provides the only example so far of a Swansea service that possesses William Billingsley's handwriting on every piece, or at least on the surviving pieces!

In summary, therefore, the documentary record for this early Swansea Billingsley tea service alone, where every surviving example of each landscape has been described in his own hand, does much to establish his alphabetic cursive script—in all 52 words have been written and 75% of the full complement of 52 upper case and lower case script letters has been identified, which can definitively be claimed to advance our knowledge of his writing script as first proposed by Sir Leslie Joseph and Jimmy Jones in their authoritative work on Swansea porcelain set patterns and shapes (*Swansea Porcelain*, 1988). It is still a matter of conjecture as to the identification and attribution of Billingsley's gilding on Swansea or Nantgarw porcelains—unlike his Derby work, which has an assigned gilder's number of 7—but it seems to be a reasonable proposition that, at least for this glassy porcelain tea service discussed here, since Billingsley did execute the landscape painting and the Swansea marks and descriptors then he would probably in all likelihood have also carried out the gilding! It is also interesting that this service flies in the face of the statement made by Jones and Joseph that William Billingsley never signed and wrote on a complete Swansea service … here, all photographs extant show the appropriate Swansea mark and a descriptor … so may we conclude that this service was something of which Billingsley was rather proud personally and maybe was an early success story for the Swansea manufactory after possibly the initial production failures he had experienced just immediately after the first phase of his production at Nantgarw?

Glossary

Armorial porcelain commissioned services which have a crest or coat of arms of some noble family, usually created for a specific event in the family's history, such as marriage or accession to a title. Important historically, as these items can often be dated reasonably accurately

Associated items pieces of porcelain which are part of often large services that do not belong there because they are not Swansea or Nantgarw made. Examples include items that are bought in from other manufactories which are decorated en suite with the local items to make up numbers, or alternatively, items that may have been bought later from other factories to replace broken examples of Swansea or Nantgarw, particularly after the closure of these factories

Biscuit the undecorated, unglazed porcelain body after firing in the kiln

Body the porcelain ceramic material after completion of the firing process in the kiln

Bone china a porcelain body or composition which contains calcined and powdered bones, chemically calcium hydroxyapatite or orthophosphate

Breakfast cup a large shallow tea cup used in breakfast services, which were usually of different composition to a standard tea service in that they included small tea plates, muffin dishes, egg cups and holders etc., in addition to the usual sucrier, slop bowl, milk jug, teapot and stand

Cabaret service otherwise known as a dejeuner, consisted of a porcelain tray, cup and saucer, teapot, lid and stand and milk/cream jug, designed for sole use and normally highly decorative and in unusual designs with different shapes and mouldings

Cabinet cup and saucer single items, often beautifully decorated and in the finest porcelain, produced primarily for decorative purposes and display; they are of significantly different shapes and mouldings to the normal types of factory cup and saucer

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Cavetto defined as a shallow concave moulding approximating to a quarter circle, refers to the hollowed reserves in moulded embossed plate edges or rim and could be decorated using a variety of themes

Chemical analysis the qualitative and quantitative determination of the elements, molecules, ions and molecular ions in materials. Generally, both qualitative and quantitative analyses are required for the characterisation of minerals and the inorganic and organic chemical components in mixtures

Dragon kiln very large kilns used during the Ming Dynasty, especially in Hangzhou, China, for the firing of porcelain in large quantities; it has been reported that the larger Dragon kilns could take up to 25,000 pieces of porcelain in the firing process, for which the fine control of temperature and thermal gradients would have been required

Earthenware pottery, a non-porcelain ceramic formed from clay, which can be unglazed or glazed, and which has no transparency or translucency and the presence of iron oxides renders a red-brown colour, e.g. terracotta

Embossed moulding an impression made in the porcelain body at or near the edge to accentuate the beauty of the finished article or, alternatively, an applied decoration consisting of flower encrustations or masked heads. Crispness and sharpness of the moulding was much admired especially when coupled with gilding or pigmented highlights and was often used effectively to enhance the subjects in the vignettes. Embossment could take several forms but usually involved bows, ribbons, floral sprays and flower buds and could be impressed or applied separately after firing in the form of maskheads, flowers, acanthus leaves etc

Empirical experimentation the practical undertaking of the production of experimental porcelain and glazes from recipes that have undergone a succession of changes to the initial composition, sourcing of materials, firing conditions and timing, which have not been taken haphazardly but with no scientific knowledge as to their predicted outcome

Enamels coloured pigments, usually metal oxides and minerals, which are mixed with fluid carriers for painting porcelain and earthenwares. The purpose of the carrier is two-fold, to facilitate a good fluid paint base for the artistic decoration and to enable the penetration of the pigment into the glaze for robust decorative application

Factory marks impressed, stencilled or cursive script marks which designate the factory or china works of origin. These changed with time and ownership and were not universally used on each piece or artefact. In particular, characteristic idiosyncratic cursive script marks can often be attributed or assigned to particular decorators, a fertile area for ceramic historians

Fake a piece of artwork that has been made to deceive the purchaser into believing that it is something that it is not. Often accompanied by incorrect factory marks, the shapes, sizes, translucency and decoration are usually also incorrect

Frit a finely powdered composite prepared for porcelain manufacture which may contain calcined bone, glass, china clay and soapstone in admixture; the degree of fineness of grinding is a key factor in the quality of the final porcelain body

Gilder's lists certain factories, such as Derby, which were extremely proud of their specialist gilding prowess, operated lists of gilders associated with numbers, which were usually painted inside the footrims of selected pieces. High quality creations usually demanded the highest quality gilding to display the painted decoration to the best advantage. Always highly prized and appreciated, in some cases clients specified that they wished to have just high quality gilding, acting as its own decoration

Glassy paste a porcelain body or composition which contains powdered glass to increase the translucency

Glazes lead or tin oxide, cerussite or cassiterite, mixed with carrying agents to form a semi-liquid slip for application to fired porcelain biscuit

Glost kiln a kiln for the firing of porcelain which has been treated with a liquid glaze slip, usually lead oxides or tin oxide with silicates, to seal the porous body and prepare the porcelain body for enamelling

Graphological analysis a forensically determined definition of handwritten script attribution made on the basis of idiosyncratic methods of forming letters and their linkages

Hard paste a porcelain body or composition which contains soapstone or petuntse, for example true Chinese porcelain

Holistic approach the consideration of all the factors which might operate for the proper characterisation of materials for provenancing or identity purposes. In a forensic theme this would include historical documentation, witness statements and personal statements along with scientific analytical data and their interpretation

Iridescence a spectral halo which can be observed in regions near enamelled decoration on porcelain arising from the migration of metallic elemental ions and compounds into the glaze form applied pigments upon the refiring of a decorated piece caused by interference of the incident white light at the surface of the affected glaze and its resultant splitting into component colours. It can be seen best at shallow angles of observation

Kiln a specially designed oven for the heating of porcelain paste to create a hard ceramic body

Locally decorated porcelain made, decorated and gilded at either Swansea or Nantgarw by locally based artists. This term is also applied to porcelain that was purchased at other factories for decoration at Swansea or Nantgarw by artists after closure of the factories, although technically this should not then be described as locally decorated Swansea or Nantgarw porcelain!!

London decorated much of the output of porcelain from Nantgarw, and also Swansea to a lesser extent, was shipped in the white, i.e. glazed but undecorated and ungilded, to London retailers for decoration in their workshops. At one stage it is recorded that almost all of Nantgarw's output was taken by Mortlock's in London for decoration at the workshops of Randall or Sims

Named service a recorded commission from a china factory or its agents associated with a particular person; an extremely important item historically as it places the artefacts in a specific chronology usually along with assigned decorators and gilders, often with linked correspondence in factory records relating to purchase and purpose

Paste the chemical composition of porcelain before firing has commenced

Pattern books lists of pattern numbers in sequential order which delineate the introduction of a particular service pattern into the factory workshop, often but not always accompanied by a date and specified decorator and gilder associated with that pattern. By its very nature, therefore, a pattern number will not have a precise date of issue associated with it as it would have been maintained for several years until it fell out of favour and was replaced

Pattern numbers numbers painted on selected items of a porcelain service, usually under the factory mark or inside the footrim, to indicate their conformation to a specified type of approved decoration; these service patterns are therefore not unique commissions but were repeat manufactures

Saggar an unglazed porcelain stand or feet for separating pieces stacked together in a kiln prior to firing

Service a set of porcelain pieces designed for specific usage at meal times, in particular, tea/coffee, breakfast, dessert and dinner services. Basic services were often supplemented with bespoke items such as ice pails, spill vases, muffin dishes, egg-cup stands, and a variety of serving dishes and comports for fruit and vegetables

Shard or "potsherd", is a broken piece of porcelain or pottery, usually found in waste dumps near ceramic kilns and formed from imperfect, commercially useless pieces which have been destroyed after firing. Often these are found glazed and decorated, for example, in archaeological excavations of china factories or living quarters

Sponsors people who materially assisted in the start-up of Swansea and Nantgarw factories through the provision of money and financial support—not essentially equivalent to patrons, who purchased the output from the factories, although of course sometimes the two were the same

Soft paste a porcelain body or composition which is devoid of soapstone but which contains china clay

Sucrier a covered, lidded bowl, often with associated stand, for holding sugar for tea/coffee or dessert services. Sometimes the sucrier was not supplied with a lid, and then could also be used as a slop bowl for tea services for the purpose of rinsing tea cups at table or for the deposition of used tea leaves during the tea drinking ceremony

Translucency the ability to transmit light through a porcelain body, a highly desirable property which demonstrates the clarity and the absence of flaws or defects in the body

Trident a type of porcelain body adopted by the Swansea factory in an attempt to strengthen the pieces from the duck-egg base and increase their robustness in use; unfortunately the rather gritty, pigskin like appearance of the body did not appeal to the clientele and it was never successful. The name derives from the impressed trident motif that appears on several of these pieces

Trio a tea cup, coffee cup (or coffee can) and a shared saucer commonly used in tea/coffee services

Vignette defined as a small, powerful scene, shading at the edges, is given to the blank area (or "window") usually at the rim or edge of a porcelain plate or artefact enclosed by gilding or other decoration, embossed moulding etc. The vignette was then decorated with fruit, flowers, birds or landscapes according to suggested themes. Alternatively, it has been applied to the ongoing border decoration of vines and leaves linking flower sprays or fruit, for example, in the border edges of plates

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