

Bow: Britain's Pioneering Porcelain Manufactory of the 18th Century

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Abstract:

Based on a compositional study of Bow porcelains new concepts are advanced regarding the stature of this ceramic manufactory and the significance of the fledgling English porcelain industry. Current research indicates that the Bow porcelain manufactory was operating, albeit in an experimental mode, far earlier than previously recognised. It is deduced that the achievements of the Bow concern during the few short years of 1740-1746 are without precedence, nationally or internationally. At least three essentially indigenous recipe types can now be credited to Bow, namely the Si-Al-Ca hard-paste body using China clay and lime-alkali glass cullet, the phosphatic paste composition, and the high-magnesian (steatitic) assemblage. By 1743 the Bow manufactory was producing stellar, commercial, hard-paste ceramics, which could compare compositionally and decoratively with the Saxon, yet a general state of denial still surrounds these remarkable achievements. A classification of the phosphatic porcelains into five recipe groups, a high-lead sub-group, and an hypothetical experimental group is proposed. Evidence is presented for the use of steatite at Bow by the mid 1740s and the associated production of highly significant magnesian commercial wares. It is this indigenous intellectual enquiry, scientific expertise, entrepreneurial drive, financial acumen, and artistic expression that made Bow the pioneering porcelain concern of 18th century England, and questions the long-held notion that England's porcelain industry was somehow dependent on 'cuttings' obtained from a supposedly superior Continental ceramic technology.

Introduction:

The Bow porcelain manufactory (New Canton) is generally believed to have commenced production of soft-paste porcelain composed of bone ash around 1748 in east London. The concern reached its zenith, with regard to output and profitability, during the mid 1750s and then fell into a slow decline leading to its closure in the mid 1770s. Bow's bone ash recipe survived this closure and by the advent of the 19th century evolved into what is now referred to as English bone china, the mainstay of numerous present day concerns.

During the last few years our research in conjunction with various colleagues has suggested that there is a good deal more to the Bow story and its contribution to the development of the English porcelain industry than the short introduction given above might suggest. Current research indicates that far from the English porcelain tradition being in debt to a ceramic endowment of supposedly superior Continental technology (Hobson, 1910), England's porcelain culture has a stature, embodied in Bow, of

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indigenous intellectual enquiry, scientific expertise, entrepreneurial drive, financial acumen, commercial development, and artistic expression second to none. Today we wish to share with you the one aspect of our research, namely the various recipe types developed by the Bow porcelain manufactory. For a significant survey of additional aspects including the social, intellectual, and scientific background of the nascent English porcelain industry for the period 1730 – 1747, which underpinned these compositional breakthroughs made by Bow, we refer you to Daniels (2007: *The Origin and Development of Bow Porcelain 1730-1747 Including the Participation of The Royal Society, Andrew Duchè, and the American Contribution*).

Bow 1744 patent and Bow first patent porcelains:

Central to our work is the 1744 patent of Edward Heylyn and Thomas Frye, two of the Bow proprietors. This patent, sometimes termed the Bow first patent, in contrast to the Bow bone ash, second patent entered by Frye alone in 1749, has been misquoted, misunderstood, marginalised, and underestimated for over a century (Chaffers, 1863; Church, 1881, 1885; Burton, 1902; Tait, 1959; Watney, 1963, 1973; Bradshaw, 1992). Our research leads us to the conclusion that the 1744 patent is a landmark document in the history of English ceramic studies. We conclude that the detailed specifications contained in this patent describe the manufacture of Great Britain's earliest hard-paste porcelains using a refractory China clay, known colloquially as Cherokee clay (*uneka*), imported some 8,000 kms away in the heart of the southern Appalachians. We have located the likely source of this clay, determined its composition (90% halloysite, 10% kaolinite) and on ascertaining the chemistry of this clay or "earth" we have unequivocally identified and recognised the products of the 1744 patent as the hitherto unattributed group of porcelains known as the "A"-marked group (Ramsay et al., 2001, 2003, 2004a,b; 2006). In other words the "A"-marked group comprising some 38 extant items represents Bow first patent porcelains produced commercially in east London c. 1743 - 1745.



Fig. 1: Covered bowl, east London, England, c. 1744. Bow first patent hard-paste porcelain. Height 3¹/₈". Collection of the Melbourne Cricket Club Museum, acc. no. M5369.1. Photo courtesy of Erin O'Brien. This polychrome covered bowl, formerly in the Baer Collection comprises China clay and lime-alkali glass frit in the proportions 60:40 (hydrous) - see Ramsay et al. (2004b). For too long the significance of these brilliant wares in the context of Anglo-American porcelain development has been overlooked.

Furthermore, following the specifications contained in the 1744 patent, we have fired analogue Bow first patent wares (Ramsay et al., 2004a) and from this work we have been able to demonstrate that the patent was certainly not "unworkable," that the silicon-aluminum-calcium (Si-Al-Ca) body and glaze were apparently fired together to the top temperature of around 1,280°C for a 1:1 clay to glass frit mix, and that the resultant mineralogy of the fired body, comprising Ca-plagioclase (anorthite) and two glassy phases mirrors the unique mineralogy described for an "A"-marked cup by Dr Ian

Freestone (1996). From this work we can now confidently claim that we have proven scientifically that whoever was firing the “A”-marked group was following the unique 1744 Bow first patent specifications. Consequently we suggest that the most reasonable deduction drawn is that it was the patentees themselves, Heylyn and Frye, who were producing these porcelains. Moreover based on the starting materials, the firing conditions, the temperatures required, and the physical and micro-textural features of the resultant replica porcelain body and the Bow first patent porcelains themselves, we are able to assert that these wares are hard-paste, pre-dating William Cookworthy’s efforts in Devon by a quarter of a century.

We now realise that our understanding of the birth and development of the Anglo-American porcelain industry has been impeded for over 100 years by among other aspects, an unwritten, fallacious, circular argument, which on the one hand states that the Bow first patent is unworkable, vague, cautious, hesitant, and at best experimental thus explaining why no derivative porcelains can be recognised and on the other hand argues that because no products of the 1744 patent can be identified this must indicate that the patent itself is unworkable, vague, cautious, hesitant, and at best experimental. We have demonstrated (Ramsay et al., 2006) that the above arguments have been variously predicated on misleading concepts and interpretations. These include an erroneous version of the patent by William Chaffers (1863), an incorrect recipe for the glass frit used by the patentees as proposed by Church (1881, 1885) and employed by Burton in 1902 during his failed attempts to make analogue first patent wares, quotes from the patent taken out of context by Tait (1959), and unsubstantiated claims by Watney (1963, 1973) that the recipe was almost certainly unworkable and that the patent was a “front” to allow the patentees more time to develop a hard-paste formula. In fact the specifications themselves describe a hard-paste recipe.

We suggest that never in the history of English ceramic studies has such a landmark document been so underestimated, if not dismissed, by so many for so long based on such unfortunate reasoning. We would vouch for both the veracity and efficacy of the 1744 patent and we contend that this highly significant document is central to our understanding of the earliest commercial porcelain development in Great Britain. The products of this patent are both decoratively and technically brilliant and can bear comparisons with Meissen porcelain with regard to the use of a refractory China clay, the firing temperatures required, the inferred co-firing of both Si-Al-Ca body and Si-Al-Ca glaze, the resultant physical properties of the porcelain body, and the quality of the potting and decoration. Yet these quite extraordinary porcelains have remained in semi-obscurity with little mention made of them in the numerous textbooks on ceramics published over the last 100 years in contrast to the numerous and voluminous publications relating to Meissen. By mid 1745 the French had recognised the superior compositional qualities of Bow first patent porcelains as compared with both their various soft-paste concerns and that of Chelsea (Daniels, 2003; Ramsay et al., 2004a, 2006; Daniels, 2007). Yet for many years there have been numerous attempts to equate Chelsea porcelain with Meissen (Hobson, 1905; Hurlbutt, 1926; Legge, 1984; Dragesco, 1993; Spero, 2006). No matter how outstanding Chelsea porcelain might appear to us today, Chelsea had a fatal flaw in the eyes of the 18th century Europeans in that it was an

artificial soft-paste, what Solon (1903) described as porcelain vulgarized in France. Ramsay and Ramsay (2006; 2007) further note that the terms ‘true’ hard-paste, hybrid hard-paste, and frit porcelain may have also combined to hinder the recognition of the compositional significance of these stellar Bow first patent, hard-paste porcelains - wares that set standards for all other 18th century English porcelain concerns and which alone can share an international stage with Meissen. Moreover we have suggested that the contribution by colonial America and the Duché family - what we term as the *Philadelphia ceramic tradition* - to the development of Bow first patent porcelains has not been fully recognised (Ramsay et al., 2004b); however see Daniels (2007).

Bow 1749 patent and Bow second patent porcelains:

In the case of the Bow second patent porcelains, various evolutionary models present themselves. For simplicity in this discourse we have adopted the “consecutive model”, namely that the bone ash wares of the Bow second patent enrolled by Thomas Frye in 1749, followed consecutively after the first patent wares, albeit with a short gap at some time in or around late 1745 to 1746. However on-going research by us and Daniels (2007) tends to support “parallel” or “overlapping models,” whereby wares, in part experimental (hard-paste Si-Al-Ca, phosphatic, and high-magnesian bodies), were produced simultaneously during a period which may have extended in part back to the 1730s. Although early workers (Chaffers, 1863; Tiffin, 1874) have made unsubstantiated claims that Bow may have been in operation during the 1730s, more recent researchers, reliant in part on the earliest dated Bow phosphatic wares of 1750, have broadly supported commercial development by Bow during the late 1740s (Burton, 1906; Tait, 1959; Watney, 1963, 1973; Adams and Redstone, 1981; Sandon, 1989; Gabszewicz, 2000). On accepting the veracity of the 1744 patent and the identification of the products of that patent (Bow first patent porcelains), Bow must have been in commercial operation by at least 1743 if not earlier – see also Jewitt (1878). This notion now finds support in William Tomlinson’s recently discovered letter dated December 14th, 1744, recently discovered in which he records both the 1744 patent and the fine Carolinian clay used to make these wares. Moreover, current research (Daniels, 2007; Daniels and Ramsay, in prep) identifies a significantly earlier on-site visit to Bow, where the factory is mentioned and the porcelain

Table 1: Compositional groups that comprise the Bow second patent porcelain output (after Ramsay and Ramsay, in press)

Period	Date	Recipe used #
Experimental	pre-1746	Not yet recognised but see Tait (1960)
Developmental	c. 1746	ball clay 25%, crushed silica 25%, bone ash 40%, glass cullet 7%, gypsum or alum ~3%
New Canton	c. 1747-1753	ball clay 25%, crushed silica 25%, bone ash 45%, glass cullet 5%
Target or Transitional	1754	ball clay 25%, crushed silica 25% bone ash 44%, glass cullet 5%, gypsum 1%
Bowcock	1755- c. 1769	ball clay 15%, crushed silica 44%, bone ash 35%, gypsum 6%
Tidswell	c. 1770-1774	ball clay 15%, crushed silica 40%, bone ash 33%, glass cullet 6%, gypsum 6%

values given are wt% hydrous

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(possibly experimental) and white clay were observed by Jno. Campbell of 'Lazy Hill', North Carolina. This essentially overlooked letter (Castle Dobbs Papers) written by Campbell, appears to represent the earliest extant eye witness account known to date of any English porcelain manufactory. We suggest that the onset of commercial production at Bow would have pre-dated that of Chelsea by at least a year to 18 months if not more, whilst experimental development stretched into the 1730s.

Based on porcelain composition, five groups or periods, together with a high-lead subgroup (>1.25 wt% PbO) and an hypothetical *Experimental period*, have been proposed for Bow second patent porcelains (Table 1) commencing with wares of the *Developmental period* {ball clay 25 wt%, bone ash 40%, crushed silica 25%, glass cullet 7% (lead-rich and/or lime-alkali glass), and gypsum (or in some instances alum) ~3%} which we date to around 1746 (Ramsay and Ramsay, in press).

Fig. 2: Plate, east London, England, c. 1746. Bow soft-paste phosphatic porcelain. Diameter 30.5 cm. Taylor Collection. Decorated in underglaze blue with the *Disconsolate Fisherman* pattern. Compositionally this plate comprises 33% bone ash, 8% gypsum, 7% lead glass, 4% lime-alkali glass, 22% ball clay, 26% crushed silica (wt% hydrous) and is grouped with the high-lead subgroup of the *Developmental period* c. 1746 – see Ramsay and Ramsay (in press).



Details of each of these groups' composition, stylistic features, appearance of the body and glaze, and translucency are presented in a form which will allow collectors and museum curators to use visual identification to gauge where in the Bow output any particular item might have been produced (Ramsay and Ramsay, in press). This compositional classification shows many similarities to one of the Bow classifications proposed by Adams and Redstone (1981). A discussion is given as to the reasons for



Fig. 3: Teapot, east London, England, c. 1747. Bow soft-paste phosphatic porcelain. Height 28.5 cm. Taylor Collection. Photo courtesy of Bonhams. Decorated in enamels and comprising 27% ball clay, 38% bone ash, 2% lead glass, 4% lime-alkali glass, 29% crushed silica (wt% hydrous). Decoratively this pot shows linkages in palette and style of painting to Bow first patent porcelains (Ramsay et al., 2003). This sophisticated pot demonstrates the very best in the early Bow phosphatic output in relation to the quality of the porcelain, potting, and enamelling – see Daniels (2003) and Ramsay and Ramsay (in press).

various recipe changes, which in some instances appear to have been sudden and marked. For example, a significant recipe change occurred c. 1755 when glass cullet was dispensed with and gypsum reintroduced. We contend that compositionally the resultant body (*Bowcock period*, 1755 – c. 1769) was more homogeneous with minimal levels of the fluxing agents K_2O and Na_2O other than that occurring naturally in ball clay. Likewise another flux, PbO in the form of lead cullet, ceased to be added. Consequently we suggest that kiln losses would have been reduced whilst the decision to discontinue fritting the various components, as recorded by Wedgwood, appears to have commenced a year earlier in 1754 based on the presence of the ‘Bow brown’ translucency observed in the Target bowl by Frank Tilley, thus marking a change in translucency from the earlier greenish and grayish-white hues observed for the *New Canton period* (Adams and Redstone, 1981; Ramsay and Ramsay, in press). In this connection Dr Ian Freestone (written communication, 2006) has suggested that the small amount of sulphur found by us in the Target bowl could represent contamination.

It is noted that a feature of the Bow output at various times is the presence of a marked dichotomy in recipe type, glaze composition, method of firing, potting methods and potting appearance (gracile vs thickly potted), decoration, and glazing. We suggest that these features do not necessarily require separate, independent potworks to explain such variations as has been suggested in the literature (Spero, 1989, 2001). The most significant example is the difference in recipe type between the first and second patents, yet both were ‘enrolled’ by Thomas Frye. In the case of perceived differences in the potting, decoration, and glazing of some early underglaze blue porcelains, compositional analyses (Ramsay and Ramsay, in press), archaeological recoveries (Tait, 1959), and historical records (Adams, 1973) collectively demonstrate that these two groups are of Bow derivation.

Bow high-magnesian (steatitic) recipe:

We have now identified a third major Bow recipe known as high-magnesian (steatitic). It appears that one or more members of Royal Society of London were experimenting with steatite by at least 1728 (Woodward, 1728; Daniels, 2007) and at some time in the 1730s



Fig. 4: Tea canister, east London, England, c. 1746. Bow magnesian porcelain. Height 12.2cm, width 8.9cm. Collection of the National Gallery of Victoria (Felton Bequest). Photo courtesy of the NGV. Decorated in enamels with over-gilding in the *Island House* pattern. This is the earliest known English porcelain tea canister and is attributed to the Bow porcelain manufactory. The distinct magnesium level in the porcelain body (4.6 wt% MgO) indicates that steatite may have been included in the recipe. Moreover the amount of sulphur present (1.9 wt% as SO_2) coupled with the high level of K_2O and the lack of calcium strongly suggests the presence of alum as found in some members of the Bow second patent *Developmental period* - see Ramsay and Ramsay (2005, in press).

Bow was involved in the development and subsequent commercialisation of this recipe type. The first example of Bow porcelain identified by us (Ramsay and Ramsay, 2005), as having a distinct magnesian composition (4.6 wt% MgO) is a tea canister housed in the National Gallery of Victoria collections (Fig. 4).

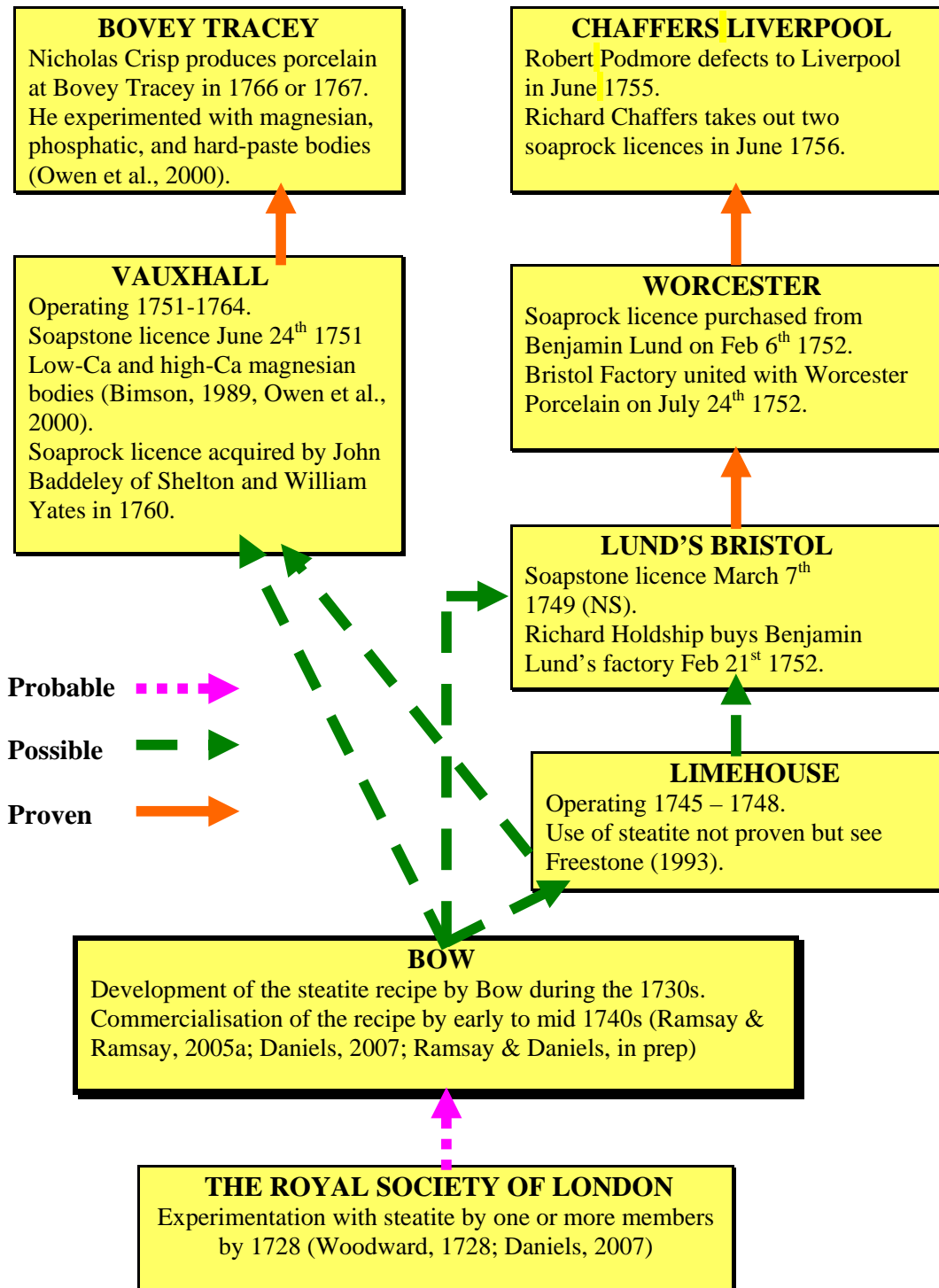
We attribute this canister to Bow on account of the following features:

- compositionally this canister has distinct Bow first patent characteristics with a high clay content, possibly China clay;
- the deduced presence of alum used in the recipe demonstrates close compositional linkages with the Bow second patent porcelains of the *Developmental period c. 1746* (Table 1);
- the palette used, in particular the chocolate brown, is characteristic of both Bow first and second patent porcelains;
- the *Island House* pattern is a design typically used at Bow; and
- the gilding over a chocolate brown base or red-brown base is a Bow signature feature.

Other high-magnesian examples are illustrated which we attribute to Bow, including a coffee cup from the Taylor Collection and a high-magnesian biscuit waster obtained from the Bow site on Stratford High Street (Redstone, 1969). This waster is characterised by 72.5 wt% SiO₂, 9.7 wt% MgO, 5.2 wt% PbO, and 220 ppm Ni with a calculated theoretical recipe of 10 wt% (hydrous) ball clay, 30 wt% (hydrous) talc (the mineral comprising soapstone), 20 wt% lime-alkali cullet, 15 wt% lead cullet, and 25 wt% crushed silica. The clear use of steatite in this recipe is indicated by the high level of nickel, which is indicative of a mafic/ultramafic source rock with ~700 ppm Ni. Previously Church (1881) had observed that some of the Bow wasters tested by him were non-phosphatic. We suggest that these non-phosphatic sherds may have been high-magnesian (steatitic). On the acceptance that Bow ceased producing high-magnesian porcelains around 1748 (Daniels, 2007) there are now compelling grounds for attributing to Bow what is arguably the most enigmatic and iconic group of English porcelains still requiring a creditable attribution. This group comprising in part the George II busts, of which some 16 representatives are known, has been attributed to various factories. In the case of the busts, themselves, attribution has ranged from Plymouth, Chelsea, Bow, Derby, Longton Hall, to Worcester, with the most recent being Richard Chaffers of Liverpool (Watney, 1997). Daniels (pers. comm., 2002) recognised on stylistic grounds that these busts could be attributed to Bow and for a detailed discussion on this attribution and their deduced year of production we refer to Daniels (2007) and Ramsay and Daniels (in prep). Based on these research results presented today, which constitute the first hard evidence that Bow was producing high-magnesian (steatitic) wares dating to around the early - mid 1740s (Ramsay and Ramsay, 2005; Daniels, 2007), we suggest that it may no longer be appropriate to dismiss a Bow attribution merely on the presence of a high-magnesian body. A reattribution of some high-magnesian wares may now be required.

By applying the concept of technology pathways (Owen and Hillis, 2003) and the desire by virtually all 18th century English porcelain concerns to replicate one or more of the

Fig. 5: Speculative technology pathways for the spread of the high-magnesian recipe (steatitic) in England c. 1728 – 1766



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Bow recipes with regard to the Si-Al-Ca hard-paste recipe, the bone ash composition, and/or the high-magnesian formulation, the pre-eminence of Bow becomes even more apparent. For example, the following working model for the spread of the high-magnesium recipe in England during the 18th century is proposed, where Bow is central to the migration of this paste type (Fig. 5). Bow also developed the remarkable bone ash recipe, of which some 13 manufactories either experimented with or produced phosphatic porcelains by 1800 (Ramsay and Ramsay, in press). The use of bone ash continues through to the present day in English bone china.

Furthermore, based on the writings of Simeon Shaw (1837) there are grounds for suspecting that Bow may have pioneered a fourth recipe type comprising pipe clay, well-washed (silica) sand from Alum Bay, Isle of Wight, and ground cullet with the subsequent body covered with a lead-based glaze. If Shaw's comments are substantiated by work in progress then it might suggest that a reattribution may be required for some members of the glassy porcelain group, currently attributed to early Chelsea, the St. James's factory of Charles Gouyn (Dragesco, 1993), Longton Hall, and even early Derby.

Why have the contributions by Bow been overlooked for so long?

We note a number of reasons as to why Bow's remarkable contributions at both the national and international level have tended to have been overlooked for so long:

- the absence so far of documentary Bow wares prior to 1750;
- the notion that Bow tended to specialise in more utilitarian wares rather than the luxury end of the market;
- the belief that Bow made only phosphatic soft-paste wares;
- the generally held view that Chelsea's stature and output are incomparable with regard to that of other concerns. Moreover Chelsea has been generally regarded as the first to produce commercial porcelains in Great Britain, that it acted as a role model for a period, and that its wares alone could compare with Meissen;
- the perceived failure for over a century to recognise the significance and veracity of the 1744 patent. This general inability to accept the specifications contained within the Bow first patent has meant that for many years ceramic historians have been poorly placed to identify the products derived from this set of specifications. We note however Hurlbutt (1926) who argued that the patent was viable and Errol Manners in Emerson et al. (2000) who might appear to have been the first in print to have accepted the Trinity, namely that the patent was workable, that the products were the 'A'-marked group, and proprietors were Heylyn and Frye;
- the general reluctance to accept a Bow attribution for these products of the Bow 1744 patent. This notion has been in part largely based on numerous attempts over many years to arrive at an attribution based on potting, form and decoration at the expense of composition;
- the reluctance to recognise that a number of contemporary documents can reasonably be assumed or be suspected to refer to Bow first patent porcelains and not Chelsea. These include the 1744 patent itself; the appearance by Briand before

- The Royal Society of London in February 1743 (NS) where he displayed what can be deduced to have been hard-paste porcelains (Daniels, pers. comm., 2003; 2007); the mention of an English concern, whose porcelain was more beautiful than that of Meissen because of its ‘composition’, in the Vincennes Privilege dated July 1745 (Daniels, 2003); the reference by Cookworthy to porcelains made using China clay and *being of their making* (Watney, 1963, 1973); the comments by Dossie (1758) of a concern near London (not near Edinburgh or Stourbridge) with an interest in China clay from the New World; and the William Tomlinson letter dated December 14th, 1744. Moreover little attention has to date been afforded the John Campbell letter and its significance to Bow; and
- the subtle yet pointed observation made by Joan Bennett that because Bow was located in the east end of London this might have subconsciously impinged negatively on attitudes for many years.

Bow - Britain’s pioneering porcelain manufactory:

Over the last five years there has been an on-going reassessment of the development of early English porcelains with special reference to the Bow porcelain manufactory. Based on first principles and porcelain composition we list a number of conclusions:

- Bow was the first English manufactory to commence commercial production of porcelain dating from at least 1743 (Daniels, 2003; Ramsay et al., 2004a,b);
- Bow was most likely operating in the mid to late 1730s, albeit in an experimental mode. Moreover during this early experimental phase it was known as and referred to as Bow (Daniels, 2007; Daniels and Ramsay, in prep);
- commencing in the 1730s Bow experimented with and developed a number of recipe types;
- one group of porcelains (Bow first patent porcelains) is hard-paste and this group predates William Cookworthy’s production by a quarter of a century;
- the hard-paste Si-Al-Ca recipe employed using China clay is possibly unique to Britain. It was subsequently copied by various English concerns substituting ball clay for China clay (Limehouse, Pomona, and William Reid);
- these Bow hard-paste porcelains alone can equate with Meissen and based on compositional considerations there are grounds for asserting that the Bow first patent recipe was superior to that used by Meissen, especially during the period 1709-1722 when Colditz clay and slaked alabaster were used;
- the level of artistic decoration (partly of indigenous derivation from the London theatre) lavished on some of these Bow first patent porcelains, alone makes these wares pre-eminent among English 18th century ceramics;
- Bow was also producing commercial, high-magnesian (steatitic) porcelains by the early to mid 1740s thus predating Benjamin Lund and William Miller of Bristol by some five to six years. These results may require a reattribution of some high-magnesian porcelains of which the most important, if not iconic, is the George II bust group;
- a major feature associated with Worcester, one of Britain’s most important concerns, was the use of a steatitic recipe, yet the contribution by Bow to that success has to date been overlooked;

- a further recipe type pioneered by Bow was its renowned bone ash recipe of which five distinct compositional groups and a high-lead sub-group can be recognised;
- these bone ash compositional groups are reflected in their physical and visual properties – weight, translucency, density, and degree of staining of the body;
- a feature of the Bow output is what appears to represent dichotomies in composition, potting, glazing, and decoration. These contrasting features do not require independent potworks;
- employing the concept of technology pathways, some 13 porcelain concerns had either experimented with or adopted Bow’s phosphatic recipe by 1800;
- based on the writings of Simeon Shaw (1837) there are grounds for suspecting that Bow may have pioneered a fourth recipe type comprising pipe clay, well-washed (silica) sand from Alum Bay, Isle of Wight, and ground cullet covered with a lead-based glaze. If Shaw’s comments are vindicated by work in progress then it might suggest that a reattribution will be required for some members of the glassy porcelain group;
- the most important and objective gauge as to a role model status assumed by any particular factory is whether its recipe types (not decorative motifs and design features) were emulated by other subsequent concerns. In this regard Bow had no peer;
- Bow was the first concern to apply slip-casting to porcelain manufacture, and
- the intellectual, technical, entrepreneurial, financial, commercial, and artistic expertise demonstrated by Bow in such a few years (1740 – 1746) is without parallel among other porcelain concerns, nationally and internationally.

Composition vs. studies based on style and typology:

On a wider perspective we note that ceramic scholarship during the 19th and 20th centuries has been generally predicated on typological studies such as the visual appearance of porcelain body and glaze coupled with potting shapes, and where possible the use of documentary items. This art-scholarship approach has provided the backbone of our current knowledge but we would question whether this approach alone will be sufficient to carry ceramic scholarship through the 21st century. An example is provided by the failure over the last 60 years of comparisons using paste, glaze, shape, and decoration to provide a convincing attribution for the highly significant Bow first patent porcelains. As David Barker (1998) writes, making it clear that it is not his intention to denigrate the role of connoisseurship,

There has also been too much attention devoted to a study of styles of moulding and decoration of early British porcelains. Styles can never be more than a guide to contemporary trends in production, and cannot in themselves be a reliable guide to attribution without other forms of supporting evidence, and consequently stylistic links between vessels often only serve to confuse.

In a similar vein Owen and Hillis (2003) observe,

Over the past decade, traditional studies of historically fine ceramics based on subjective “connoisseurship” have been supplemented and even supplanted by more objective research that uses analytical data to understand and interpret these wares.

The future challenge for English ceramic studies in the 21st century will be to integrate more fully scientific studies and archaeological results with the current corpus of existing work. For too long compositional features of the porcelain body and glaze have remained the poor sister to studies based on form, style, translucency, and decoration. A case in point is that over the last decade a highly important body of research into early English porcelains has come out of Nova Scotia, not the United Kingdom, yet this original work comprising some dozen papers, which address many if not most of the English porcelain factories, has largely been ignored by English workers. As Solon in 1910 noted,

On the other hand, scientific books on ceramics do not appear to be in great demand in England; their list is, singularly short.



Fig. 6: Coffee cup, east London, England, c. 1746. Bow high-magnesian (steatitic) porcelain. Height 5.8 cm. Taylor collection. This cup contains 6.3 wt% MgO and 8 wt% PbO which converts to 20 wt% talc (hydrous) and 21 wt% lead glass. A Bow attribution is based on the presence of the *Island House* pattern, the palette used, and the gilding over red-brown enamel.

Epilogue:

Lastly we submit an antipodean viewpoint pertaining to the study of 18th century English porcelains, which we have, rightly or wrongly, arrived at over the last few years during our research into Bow. Hobson (1910) wrote as follows,

.....remember that porcelain was not discovered in England by a process of evolution from the native earthenware. It was, on the contrary, an exotic plant of eastern origin, naturalized and, one might say, hybridized on the Continent, and brought to England, as it were, in cuttings which were planted first in the neighbourhood of London and afterwards disseminated in more congenial soils.

This concept that the early English porcelain industry was in some way indebted to an endowment or ‘cuttings’ of superior Continental ceramic technology has reverberated through subsequent writings in various forms over the last 100 years. This in turn seems

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at times to suggest to us that a distinct inferiority complex pervades the study of early English porcelains when compared with the splendours of Meissen and other European ceramics. This contagion might now appear to have become deeply etched into the English ceramic psyche. The use of words and phrases such as 'homely', 'lacking a clinical perfection', 'charming', and 'simple' all suggest to us that this complex is never far from the surface. In the case of Bow, the comments by Schmidt (1932) that Bow has won general affection by way of its engaging incompetence have to our knowledge never been refuted in the literature. We do so now and state unequivocally that the outstanding indigenous tradition of English porcelain experimentation and commercial development, as exemplified by Bow, is second to none. No other concern has been able to develop at least three remarkable ceramic recipes and produce commercial wares from these paste types within so short a period of time. Each of these recipe breakthroughs is of the highest significance, including one that is a hard-paste formulation and one that has been used to support the superior status of Worcester porcelains. Yet these compositional triumphs by Bow have been largely overlooked in favour of extensive discussions on *famille vert*, *famille rose*, and decoration in 'the European manner'. The awareness and acceptance of this uniquely English tradition can only reach the level of maturity as seen on the Continent, once this sense of self-denial and self-doubt is eradicated. Nowhere is this sense of being second rate and in some way being subservient to superior external ceramic traditions more evident than in the repeated attempts over many years to give away the quite remarkable Bow first patent porcelains to the Italians and even the Scots!

We look to the time when books and publications on early English porcelains proudly proclaim this grand tradition and publish coloured photographs with detailed commentaries on England's pre-eminent 18th century wares. Further evidence of this maturity will be gauged when a full exhibition of all known Bow first patent porcelains is held. These remarkable, essentially indigenous, achievements brought to fruition in just a few years, typify English ceramic ingenuity and after a quarter of a millennium of uncertainty, if not outright denial, now establish Bow as the country's pioneering porcelain manufactory - without peer.

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