

Hard-Paste Porcelain Plates from Sèvres with Chinoiserie Decoration in Colored Golds and Platinum

ANTOINE D'ALBIS

Manufacture Nationale de Sèvres

THE POLITICAL SITUATION IN FRANCE AT THE TIME THE SERVICE WAS CREATED

On October 6, 1789, the royal family had been forced to leave Versailles and had been conducted by a large crowd of rioters to the château of the Tuileries in Paris. The procession was preceded by the severed heads, carried on the tips of lances, of two of the king's unfortunate bodyguards, who had attempted in vain to stop the crowd. The royal family settled into the home of their ancestors, where they witnessed the gradual limitation of their freedoms. They were subject to an increasingly vigilant surveillance as talk in Paris spoke of a plot to intervene on the royal family's behalf by an Austrian faction. The queen was, in fact, preparing plans of escape.

"Il ne faut pas se dissimuler . . . que les grandes puissances ne font rien pour rien. . . . Il convient de s'adapter à cette règle si on veut réussir dans les grands projets politiques." So wrote the comte de Mercy Argenteau, former Austrian ambassador to the court of Louis XVI, in a letter sent to Marie-Antoinette from Brussels on March 7, 1791. Mercy was suggesting that Austria, as the price for its intervention in France's political upheaval, hoped to obtain Alsace and Lorraine, while Spain wanted part of Navarre, Piedmont and Sardinia, a few territories along the Alps, and Var. Mercy added that the king must escape before the major powers would consider any action to effect his restoration; they would make up their minds only after the royal family was safely out of Paris. Mercy's letter, so compromising for the royal family, was intercepted and taken to the Commune, which passed it on to the investigative committee in the National Assembly. The escape took place on June 20, 1791. The royal family left by coach about midnight and went to the Barrière Saint-Martin, where a waiting berlin took them to Varennes. There they were discovered, arrested, and eventually taken back to Paris. An

attempt was made to pass off the royal family's flight as a semivoluntary abduction into which the king had been "seduced," but a statement, composed by the king, explaining the reasons for his departure removed any doubt as to what had transpired. The fate of the monarchy was sealed. As the political situation in and around France grew more unstable, the Revolution, which had considered itself a force for peace, rapidly came to be replaced by a tyrannical and cruel regime antithetical to the spirit of new ideas and reform.¹

THE SITUATION AT THE MANUFACTURE ROYALE DE SÈVRES

The administration of director Melchior François Parent,² who had succeeded Jacques René Boileau in 1772,³ was marked by a preoccupation with the art and manner of dissimulating its misappropriation of funds. Following Parent's dismissal and arrest in 1778, a malaise settled over Sèvres that was compounded by a series of decisions and measures that ran counter to the factory's smooth operation. In an effort to set things right, Antoine Régnier⁴ was appointed to succeed Parent and, in 1780, the comte d'Angiviller⁵ was named to the position previously held by Jean Baptiste Bertin.⁶ These moves were particularly praiseworthy given the continuing decline of France's economic and financial situation on the eve of the Revolution.

A trade agreement with England, arranged by Charles de Vergennes and signed in 1786, did not, it seems, directly harm Sèvres, which nevertheless was suffering from a chronic lack of available financial assets and probably from the competition of the Paris porcelain factories. The purchase of the Limoges factory in May of 1784 continued to cost the Sèvres factory precious liquid assets in addition to the money that had been committed for the acquisition itself.⁷

In January of 1787, the baron de Breteuil, acting on an order from the king's council, clumsily attempted to limit the rights of the Parisian factories, which, in

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Figure 1. Plate, French, Sèvres, ca. 1791. Hard-paste porcelain, diam. 9½ in. (24 cm). The Metropolitan Museum of Art, Gift of Lewis Einstein, 1962 (62.165.8)

many cases, were protected by other members of the royal family. On March 13 of the same year, the comte d'Angiviller, alarmed by the situation at Sèvres, proposed that the factory be regulated. At the time, the factory had been attempting to introduce a healthy competition into the workshops through a combination of bonuses paid for the production of white ware and annual prizes awarded to the painters. The means to effect that policy, however, were lacking. As early as December 1, 1788, the comte d'Angiviller had written to Régnier: "Au moment même, il n'y a pas dans les caisses de quoi payer le mois aux ouvriers." And, in July of 1789, the comte d'Angiviller's chief assistant, Montucla, observed: "On fabrique à la manufacture beaucoup plus qu'on ne peut vendre." He added on September 8: "Tout ce qui tient au luxe est sabré pour quelques années. Paris s'anéantit peu à peu. Tous les gens opulents vont planter des choux dans leurs terres, voilà la maison d'Artois flambée pour

longtemps! Les seigneurs de la cour sont ruinés . . . Je vous dirai franchement, que je ne sais plus de quel bois faire flèche. Personne ne paye l'ancien, on n'achète presque pas en ce moment; j'ai tous les créanciers (ou du moins une bonne partie) de la manufacture sur le corps; je serai bientôt obligé de m'absenter et de me cacher."

Salaries at Sèvres continued to be paid one way or another, at the cost of extravagant efforts, but from month to month the situation grew increasingly grave. Delays in payments were tending to become commonplace. In September of 1789, the exasperated workers seized the cashier, Barreau, whom they held responsible for the delays, and made as if to hang him by a streetlamp at the factory entrance. If the fate of the staff was hardly enviable, that of suppliers was even less so. In November of 1789, Pierre Philippe Thomire, a sculptor-bronze founder, demanded payment of a bill for 107,703 livres, largely unhonored since 1784. At the same time,



Figure 2. Plate, French, Sèvres, ca. 1791. Hard-paste porcelain, diam. $9\frac{5}{8}$ in. (24.3 cm). The Metropolitan Museum of Art, Gift of Lewis Einstein, 1962 (62.165.23)

wood suppliers presented bills as high as 74,000 livres that had been unpaid for more than a year. In March of 1790 new revolts took place at the factory, and in August, as a result of the unrest, the king decided to shift financial responsibility for the establishment to his privy purse.

Jean-Paul Marat, editor of the radical newspaper *L'ami du peuple* and future instigator of the September massacres, published his reaction to the king's decision on August 17, 1790: "On n'a nulle idée chez l'étranger d'établissements relatifs aux beaux arts ou plutôt de manufactures à la charge de l'État; l'honneur de cette invention était réservé à la France. Telles sont dans le nombre, les manufactures de Sèvres et des Gobelins: la première coûte au public plus de deux mille francs annuellement, pour quelques services de porcelaine dont le roi fait présent aux ambassadeurs; la seconde coûte cent mille écus annuellement, on ne sait trop pourquoi si ce n'est pour enrichir des fripons et des intrigants."

Sèvres became further entangled in the ongoing political intrigue when on May 26, 1792, every copy of a scandalous memoir of Marie-Antoinette, written by Mme Lamotte and published in England, was burned in the factory kilns on the king's order. A rumor spread that it was actually the archives of the Austrian committee that had been burned. That same month, Académie Française members Bachelier, Lagrenée, Boizot, Cadet, Darcet, and Desmarest were dismissed. Lagrenée and Boizot were not restored to their duties until August of 1793, at which time the Sèvres mark with the two interlacing Ls was suppressed and the director was asked to destroy every piece bearing the emblems of the monarchy. Jean Benoît Chanou, the most energetic of the agitators at Sèvres but certainly not the most competent of the workers, was named inspector of the factory in November of 1793. He was dismissed after only fourteen months of anarchical, and corrupt, management and replaced by Jean-Jacques Hettlinger, former assistant to Antoine Régnier.⁸

THE METROPOLITAN MUSEUM'S BLACK-GROUND PLATES

Since 1962 the Metropolitan Museum has housed nine hard-paste porcelain plates from Sèvres with a black ground, rarities made all the more remarkable because the color is applied across the surface of the plates and not only to the rim, as was usually the case (Figures 1, 2; see also front cover). Two of them bear the signature of the painter Dieu and the date "OO," for 1791. They are marked with the interlacing Ls surmounted by a closed crown, which, as a rule, was used for hard-paste porcelain. It should be noted, however, that there are many Sèvres pieces in hard-paste porcelain that do not bear that mark. In addition, from 1752 to 1792 the painter Jean-Jacques Sioux also used a crown, albeit in a different style, to mark his pieces, a number of which are made of soft paste.

The intense black ground color of these plates is particularly rich and appealing to the eye. The color is highlighted by the use of precious metals—sometimes polished, sometimes burnished—which in turn are judiciously set off by the ground color itself. Platinum was generally used only in the last decade of the eighteenth century, as were the specific Chinese motifs. (A few pieces with these elements were also produced under the Empire, but these were exceptions.) It is not known who created the design, but the registries of painters' works mention the painter Jullien as having made in 1790 "un dessin pour des vases noirs dorés par la France."⁹ Unfortunately, the nature of the decoration is not described. A few pages later in the same registry, but with no year indicated, the painter Lecot is said to have created on a red ground "décorations chinoises japonnées en or riche dans le genre du Laque."¹⁰ There are strong visual affinities between the plates, with their black and red grounds decorated with gold chinoiserie, and the lacquer-paneled jappanned furniture that was popular in the eighteenth century.

In the early twentieth century Chavagnac and Grollier¹¹ found evidence in the Archives Nationales of a massive sale of porcelain to a certain Empaytaz, who observed on the occasion that the revolutionary emblems and attributes painted on the porcelain "n'intéressent pas et sont même invendables à l'étranger." Chavagnac and Grollier also identified the name "Empaytaz à Berlin" on the face of a Louis XVI clock, and they suggest, not without reason, that the buyer probably owned a shop in Berlin. A total of 230,000 livres' worth of porcelain was sold to Empaytaz on September 17, 1794. Chanou remarks that the actual value of the batch was 600,000 livres. From October 1 to December 6 of that year, sixteen more

services, as well as vases and biscuit ware, were sold to Empaytaz for an additional 230,000 livres.

Marcelle Brunet, an archivist at the factory who has been interested in the black-ground ware since 1962, has noted among the services sold to Empaytaz one described as "un service à fond noir, paysages en or jaune, or vert et platine" valued at 5,418 livres. Consulting that date in the Sèvres sales registry she found a record of a sale to Empaytaz of a seventy-one piece service, but no description of its decoration:¹²

27 assiettes	54 livres	1,458
16 compotiers 4 formes	60 livres	960
2 sucriers	192 livres	384
2 plateaux à confiture	150 livres	300
14 tasses à glaces	24 livres	336
2 plateaux pour les servir	60 livres	120
2 seaux à glace	260 livres	520
2 verrières	260 livres	520
2 seaux à bouteilles	240 livres	480
2 seaux à 1/2 bouteilles	70 livres	340
		5,418

She then added up the prices of the service components: 5,418 livres. Thus the total price of this service matches that of the "service à fond noir" noted by Brunet from among the sale described by Chavagnac and Grollier. It is reasonable to assume, then, that the pieces itemized above and sold to Empaytaz were black-ground works.

A similar service is described in the Sèvres sales registry of May 6, 1791: "livré à Monsieur de Semonville Ambassadeur, service à fond noir, chinois en ors de couleurs et platine, fleurs émaillées":¹³

48 assiettes unies	54 livres	2,160
24 compotiers différents	48 livres	1,192
4 bateaux	60 livres	240
4 bateaux à 6 pots	150 livres	600
2 bateaux à 3 pots	174 livres	348
8 sucriers de table	180 livres	1,440
6 beurriers	150 livres	900
2 saladiers	210 livres	420
2 porte-huiliers	132 livres	264
54 tasses à glace	18 livres	972
6 plateaux pour les servir	150 livres	900
2 seaux à compartiments	192 livres	384
4 seaux à trépieds	600 livres	2,400
2 jattes à punch	750 livres	1,500

This set, accompanied by, among other items, 240 flat cabbage-leaf plates and 72 soup dishes, was paid for on June 2, 1791, for a total price of 28,000 livres.

Another black-ground service was sold to General Hedouville¹⁴ on “29 Germinal, Year 10.”¹⁵ There is no mention of chinoiserie in gold and platinum, but it is reasonable to think this was indeed the case:

72 assiettes	30 livres	2,160
4 compotiers	36 livres	1,444
12 compotiers	42 livres	504
16 tasses à glaces	9 livres	144
2 plateaux pour les servir	42 livres	84
2 sucriers	60 livres	120
2 confituriers	60 livres	120
2 seaux à glace	150 livres	300

Certain plates have a black rim with a pentagonal medallion of the same color in the center. They are decorated with a garland of polychrome flowers and chinoiserie in gold and platinum. The garland is sometimes round, sometimes wavy. Are these two different services? Are these plates from General Hedouville’s service or are they isolated pieces? For lack of a description, it is difficult to know.

MANUFACTURING PROCESSES

The Sèvres factory faced much tribulation as it sought to master the techniques and obtain the means to produce hard-paste porcelain. The factory attracted French and German arcanists—people who knew the secret (arcanum) of producing hard-paste porcelain—and took advantage of their expertise, but it always found a way not to respect commitments to them. The factory eventually received a sample of a superb French kaolin, but the location of the source was secret. (Kaolin had been discovered in France at Saint Yrieix, Limousin, about 1768.) The factory eventually succeeded in locating the vein.

Académie Française member Pierre Joseph Macquer, a Sèvres chemist charged with perfecting hard-paste porcelain, managed to produce about four hundred pieces of it in 1769. He presented his “nouvelle et bonne porcelaine” to Louis XV and the comtesse du Barry on the occasion of the festivals at the end of that year.¹⁶

Kaolin

The parent rock of the French kaolin, extracted from a hill near Saint Yrieix, was a gray and friable gravel. It was washed on-site and mixed with water. Fine clay particles became dislodged from the parent rock while in the water, which thus turned white. That water, loaded

with kaolin, was separated from the solid, coarse gravel residue and left to sit for several days. The water was then drawn off and the kaolin, which had settled to the bottom of the tank, was recovered.

The soil of Saint Yrieix rendered about half its weight in purified kaolin, which was sent to Paris. Left behind were mountains of washed gravel that for many years served to maintain roads and to roughcast the walls of houses in the region.

Paste

To obtain the paste from which hard-paste porcelain was formed, the purified kaolin was mixed with additional elements in the following proportion:

kaolin from Saint Yrieix, washed: 24 parts;
salt from Aumont, near Senlis: 7 parts;
chalk from Bougival, washed: 3 parts; and
gravel residue from washed kaolin: 3 parts.

This mixture was crushed together with a large quantity of water. It was left to settle, after which as much water as possible was drawn off and a thick slip obtained. The slip was poured into large oak barrels and left to rot for several months. The mixture turned black and foul-smelling but in this raw state acquired a plasticity and solidity that facilitated the shaping process. To achieve the proper consistency, the mixture then had to be poured into large plaster forms that absorbed excess water. A worker carefully mixed the malleable paste, stamped on it, and kneaded it by hand before giving it to the manufacturer.

Shaping the Plates

We have no precise records of the method used at Sèvres in the late eighteenth century to shape hard-paste porcelain plates. Soft-paste plates had been pressed between two molds since the time when the factory was located in Vincennes. Judging from the appearance of the hard-paste pieces, it would seem that a different procedure was used. Indeed, they were probably hand thrown. The potter would throw a series of thick shapes, approximately the size of the plates to be produced, on the wheel. After a few hours of drying, when these rough shapes had hardened somewhat, plaster molds were placed on them so that the inner portions of the plates would assume the shape of the molds. The plaster absorbed the water and the paste hardened in contact with it, resulting in very thick plates. The potter removed the plates and, when the piece was dry, trimmed the outer form with turning tools.

Kiln Hardening

The hard-paste kilns at Sèvres comprised two levels. The kiln on the ground floor, used for the end stages of firing, was 1,400 degrees Celsius; the upper level, heated only by the gases passing through it, was about 900 degrees Celsius. The upper kiln was used to give the hard-paste porcelain a rough form. When the porcelain came out of the upper kiln it was still opaque and porous; it had not yet lost its shape or undergone any shrinkage. The porosity also allowed a glaze to be applied at this stage. It was also at this point in the firing process that on certain pieces the Sèvres mark—two interlacing Ls surmounted by the closed crown—was painted in blue on the biscuit.

Glazing

As of 1778 the Sèvres factory possessed the formula for a remarkable glaze developed by a certain Dufour. That glaze, whose qualities are so extraordinary that it is still employed today, makes use of pegmatite, a natural mixture of quartz and feldspar that occurs as a very hard rock, somewhat resembling granite, found not far from Saint Yrieix. Because of its chemical composition, pegmatite turns into a colorless, transparent glass when fired on hard porcelain at 1,400 degrees Celsius. In addition, it can be applied to porcelain in extremely thin layers, which makes it possible to create fine motifs in relief under the glaze. Pegmatite, which at Sèvres was called “cailloux, spath, ou encore petung-tsé,” was finely ground with water. Director Antoine Régnier described the glazing operation in vivid language: “Lorsqu’on veut appliquer (l’émail) sur les pièces, on le delaye dans suffisante quantité d’eau pour qu’en trempant dedans un morceau de porcelaine dégourdie, il en reste sur la surface une couche de l’épaisseur d’une feuille de papier.” After it had dried, the glaze was powdery and adhered slightly to the biscuit. Extra layers were removed with a paintbrush, and glaze was added where it was missing. The glaze on the base of the plate was then removed; otherwise, during firing, the melting glaze would have made the plate stick to the sagger.

Glaze Firing

Sèvres technicians, accustomed to soft-paste porcelain, encountered two new problems in the firing of hard-paste porcelain for which a solution was urgently needed. First, the high temperature necessary to fire the porcelain required the use of extremely fireproof saggars. For plates to be very flat and not misshapen, the fireproof support on which they were placed dur-

ing firing could not be deformed by the heat. Suitable clays had to be found as quickly as possible. Technicians queried the glass factory of Saint-Gobain. Later a clay was discovered near Dreux that offered a solution of sorts.

The second problem was the need for a kiln that not only could reach these temperatures but also would be nearly homogeneous, both in terms of heat and internal atmosphere. At the time, Sèvres technicians were familiar only with the rectangular kilns used for soft paste: the fire was on one side, the chimney on the other. As a result, the conditions within were very heterogeneous, fluctuating depending on location within the kiln. Although this suited soft-paste, such kilns were not usable for hard paste, which cannot endure long dwells in these conditions at the end stage of firing. For the soft paste, these dwells went on for three days; for the hard paste, the heat had to be cut off as soon as the firing temperature was reached, otherwise the glaze would react with the paste and deteriorate in quality. Pierre Joseph Macquer knew that hard-paste porcelain could be fired quickly. He had demonstrated it often using a small experimental kiln in which he fired test cases within an hour. The chemist Guettard sent Sèvres a plan for a round kiln that had four heat sources. As of October 1769, this kiln, which was heated with wood, was functioning successfully, firing the porcelain in about twenty-four hours. Macquer has explained with remarkable clarity the combustion, oxidizing atmosphere, and reducing atmosphere in the kiln during the final third of the firing process.

In a report dated June 2, 1781, director Antoine Régnier, provides interesting details about the Sèvres kilns and evaluates the heat at the end of the firing process: “Dans un four de cette grandeur, on peut cuire jusqu’à 3.000 petites pièces de porcelaine telles que tasses et soucoupes. Cette porcelaine est tellement combinée que la chaleur nécessaire pour faire prendre à la pâte sa dureté, sa blancheur et sa transparence est la même que celle qui fait parfondre la couverte en sorte que quand on voit par les montres [pyroscopes] que la couverte est bien parfondue et bien unie et bien brillante, on est assuré que la porcelaine est cuite et l’on cesse le feu.”

What Régnier calls *montres* are fragments of glazed plates with a hole pierced through them. At the end of a firing, one of these *montres* was pulled out of the kiln; if it was shiny and properly coated with glaze, the porcelain was considered fired. After the cooling process, which could last about a week, the pieces were removed from the kiln and sorted. The number of hard-paste plates that had to be discarded, between 25 and 30 percent, was con-

siderably higher than that of soft-paste plates, which had a 5 to 7 percent rejection rate.

Preparation of the Black Pigment

High-temperature ground colors were a novelty at the Sèvres factory that arrived with hard-paste porcelain. The lead glaze of soft-paste porcelain allowed for brilliant colors that blended well at low temperatures. Either “painting” colors—*couleurs à peindre*, the full range of colors in the painter’s palette—or ground colors could be used, and in either case the result would be satisfactory. That was not the case with hard-paste porcelain. With certain exceptions, the low-temperature “painting” colors, when applied as the ground, never really took on a sheen. Technicians had to perfect high-temperature colors that would shine like a glaze once fired at a high temperature on white ware.

In 1781 Antoine Régnier made an inventory of five high-temperature colors, which today are called *sur couverte*, or overglaze colors: brown, hazelnut, tortoiseshell, royal blue, and black. The composition of the black ground was as follows:

hard-paste porcelain glaze, powdered	27 parts (75%)
cobalt oxide, powdered	3 parts (8%)
terra ombre, powdered	6 parts (17%)
	36

The color was prepared by first thoroughly mixing the components and then blending the mixture in crucibles that were placed in the glazing kiln. At the end of the firing the crucibles were broken and the blocks of colored glass were coarsely ground and then crushed. For soft-paste porcelain, the color was applied with a mordant, a kind of glue with which the pieces were coated. Before the mordant was completely dry, the powdered pigment was sprinkled on as evenly as possible with a sifter. The powder adhered only to surfaces coated with the mordant. The pieces were then carefully cleaned and fired, most likely in a glazing kiln. If the color was too light, a second layer of powder was applied using the same procedure.

After firing, the ground color was brown, grayish, and dirty. The black pigment, like the tortoiseshell, developed and acquired its full quality only through additional, low-temperature firing. If the layer of color was too thin, it did not develop during low-temperature firing and remained gray; if it was too thick, it took on matte, metallic glints with a smudgy and disagreeable appearance. It is likely that, to avoid surprises, artisans slow-fired the plates without decoration and then evaluated how the ground color was developing. That procedure could not be repeated

too often, however, because the ground colors would eventually metallize.

Gilding

Gold on soft-paste porcelain was expensive and complicated to prepare. To reduce gold to a powder sufficiently fine to be used as paint, the factory had to buy it as very thin leaf and crush it by hand. One ounce of gold (30.6 g) cost 101 livres, beating it into leaf cost 20 livres; and crushing it at the factory cost an additional 12 livres.

Beginning in 1771, even as artisans continued to use crushed gold on soft-paste porcelain, they began to use chemically prepared gold on hard-paste porcelain. Artisans had long known how to turn gold into powder through chemical manipulation, a process known to Renaissance enamellers and later used on Meissen porcelain. In fact, the details of the procedure can be found in the report on hard-paste porcelain submitted by Pierre Antoine Hannong to the factory’s director, Jacques René Boileau, on September 1, 1763. Chemical manipulation avoided all the costly leafing and crushing operations and produced a very fine powder that covered well and was easy to apply. It thus allowed for significant savings: instead of costing 133 livres per ounce, it cost only 102 livres 20 sols. Chemically prepared gold was used on the Museum’s plates.

To powder gold chemically, it was first dissolved in aqua regia, a mixture of one-third nitric acid and two-thirds hydrochloric acid. This mixture creates a gas, nascent chlorine, that corrodes the gold and turns it into gold chloride, which is soluble in the aqua regia. The metal must be worked hot. A one-kilogram gold ingot, for example, dissolves or gradually disappears into boiling aqua regia in four or five days, producing a liquid solution of a beautiful yellow color. Next ferrous sulfate, once called green vitriol, is dissolved in water, producing a green liquid. The green liquid is slowly poured into the gold chloride solution as the mixture is stirred with a porcelain spoon. The resulting mixture turns increasingly opaque, of a light brown color. When enough green liquid has been added, all the gold in the solution will precipitate, or return to the metallic state in the form of a very fine powder that settles at the bottom of the receptacle.

The gold particles are so small that the procedure takes a full night. The liquid is then poured off. The remaining powder precipitate is washed several times with clear water and left to settle after each wash. When the rinse water is perfectly clear it is poured off for a final time, and the powder is left to dry. The result is a finely powdered, beautifully yellow, extremely pure gold.

To affix the gold powder to hard-paste porcelain during firing, it is necessary to add about 10 percent flux to it. In Sèvres in the eighteenth century this flux was a fusible powdered glass with a lead-oxide-and-quartz base called *rocaille* (literally rockwork or pebbles). After the gold powder was combined with the flux powder it was ready to use and was called *or jaune*, or yellow gold. To obtain other colors of gold, different powdered metals were added to the yellow gold powder: silver for *or vert*, or “green gold,” copper for *l’or rouge*, or “red gold.”

Platinum

Platinum, in the form of a metal applied to porcelain, was not used at Sèvres until the last decade of the eighteenth century, before which time silver was used. Silver has a very beautiful shine when new but has a tendency to tarnish and then turn black with time (this takes several years of exposure to air and light). The Sèvres archives do not explain the process used to precipitate the platinum in preparation of the powder, which was applied with a brush. In 1781, however, artisans already knew how to prepare a pearl gray color with a platinum base, described as being “du plus bel effet soit au pinceau soit en fond.” That color was obtained by calcining platinum chloride with flux.¹⁷ The artisans were not yet precipitating platinum, however; that process was discovered in about 1790.

Corroding platinum with aqua regia requires extremely concentrated acids. Platinum dissolves more slowly than gold. When it was dissolved, an organic product had to be added to reduce the chloride to metal. Once precipitated, the platinum powder was washed in clear water. A flux was then added, probably the same kind and in the same proportion as was used for gold.

Pouncing Pattern

A pouncing pattern is a piece of paper onto which a design has been drawn or traced. Pinhole-sized holes are made in the paper along the outline of the design. The pattern is placed on a piece of porcelain and a colored powder (pounce) is applied with a small brush. A series of small dots, which corresponds to the outline of the design, is thereby made on the porcelain. The pouncing pattern is used to place or center decoration. If made from a transparent piece of paper, it can also be used to trace or transfer a design from one piece to another. To create an original decoration, the decorator draws his design on ordinary drawing paper, not necessarily transparent. He pricks the

outline with a pin and uses it to place the decoration judiciously and harmoniously on the piece. Either side of a pouncing pattern can be used; as a result, the engraving of a painting, which is usually a reverse of the original, can easily be turned around by a decorator using the pattern. If we compare the size of a motif on porcelain with that of the original engraving from which it was transferred, we often find that they are very different. Porcelain decorators frequently reduced the size of motifs they found on engravings.

For chinoiserie decoration on black-ground plates, a white powder, perhaps flour or chalk, was used to place the motif. For white grounds, a black powder, usually crushed charcoal, was employed.

Painting the Decoration

The gold and platinum powders, along with flux and water, were crushed by a muller on a plate of frosted glass. When they dried, they were ready for use. The powders were thinned with oil of turpentine; the decorator then painted the outlined motifs, juxtaposing the different colors of the golds and the platinum to highlight the contrast among them.

Firing the Gold

Since 1748, first at Vincennes and then at Sèvres, the factory had had an altogether unique kiln for firing the decoration, one that made it possible to fire both low-temperature colors and gold on soft-paste porcelain and on hard-paste porcelain in about an hour. This kiln was shaped like a tunnel; it was cold at both ends and heated to an incandescent temperature in the middle. The porcelain pieces were suspended from metal rods and placed in containers made of fire-proof clay. These containers were pushed into the kiln. When they reached the middle, the firing of the decoration was complete. The container was pulled toward the exit.¹⁸ At the end of this firing, the decorator might add a few touches of gold where it was lacking and fire the piece once more. The black ground likely metallized when the decoration was fired. If so, the matte, dirty-looking film was removed with a rag, water, and chalk.

Burnishing

After firing the gold is a matte brownish yellow. It is very fragile in this state; any contact with a hard object hammer-hardens and streaks it and also makes it shine. Any unintentional jarring or rubbing against it by another piece of porcelain, a ring, or even a but-

ton on clothing leaves a trace that cannot be removed. Although the gold can be shined through burnishing, it cannot be made matte again once it has become streaked. To avoid unintentional streaking and to preserve a semimatte finish on areas that will not be fully burnished, the burnisher half-burnishes, or rough-burnishes, the entire surface of the decoration by rubbing it with sand and water using a rag held at the tips of one's fingers. One then proceeds to burnish for effect (*brunissage à effet*) using tools made of hard stone—agate or hematite, for example—in different shapes and mounted on handles. The burnishing tool is held like a pencil, and the burnisher marks the surface of the rough-polished gold with gleaming lines.

Brunissage à effet had existed since Vincennes, but, toward the end of the eighteenth century, there was a tendency to create a more marked contrast between highly burnished areas and those that were less so. That tendency became more pronounced at the beginning of the nineteenth century.

CONCLUSION

On May 17, 1800, Lucien Bonaparte, minister of the interior, explained his decision to name Alexandre Brongniart as director of the Sèvres factory: "Ainsi en

réorganisant la manufacture je ne me suis pas seulement proposé de la rendre moins à la charge du gouvernement; j'ai encore eu l'intention de lui faire recouvrer son ancienne grandeur."¹⁹ The mission of Brongniart, a young chemist, was clear, but the wording of this passage, too often quoted perhaps, suggests a deterioration of the Sèvres factory's artistic and technical abilities, even a form of decadence, during the Revolution. The Metropolitan's black-ground plates demonstrate just the opposite. This necessarily brief exposition of the different procedures that led to their creation—which could make no mention of all the little skills, habits, and fastidious techniques, not to say finickiness and even obstinate persistence of the different artisans at Sèvres—is testimony to the remarkable traditions of craftsmanship that persisted, and in some cases even originated, amid the turbulence of the Revolution.

As for the accusations of "decadence,"²⁰ throughout its existence the Sèvres factory has produced objects of great prestige as well as simpler pieces. The latter are necessary for the proper internal operation of the manufacturing process, which requires a relatively high volume of production, and were made throughout the Revolution. To cite the black-ground plates, also made during the Revolution, as evidence of some decadence in the factory would be an inaccurate and unfair generalization.

NOTES

1. Evelyn Lever, *Louis XVI* (Paris, 1985); idem, *Marie-Antoinette* (Paris, 1991).
2. Melchior François Parent was Bertin's assistant. He did a great deal of scheming to take Boileau's place.
3. Jacques René Boileau, inspector from 1745 to 1753, director from 1753 to 1772.
4. Antoine Régnier, director of the factory from 1778 to 1793.
5. Claude de La Billardie, comte d'Angiviller, director general of buildings, gardens, factories, and academies, the king's representative, director in charge of management and administration of the royal porcelain factory beginning September 24, 1780.
6. Henry Léonard Jean Baptiste Bertin, controller general of finances from 1759 to 1763, born in Périgord about 1719, died about 1792. In 1767, he succeeded Jacques Dominique Barberie de Courteille as the king's representative responsible for the factory of Sèvres. Barberie de Courteille occupied that position from August 1751 until his death in November 1767.
7. In hindsight, and especially in the mind of comte d'Angiviller,

who had long believed that the factory ought to be inspired, for contemporary services, by the blue and white porcelain of Tournai, the purchase of the Limoges factory was perfectly justified. He must have noted that Paris businesses had taken away a large share of the Sèvres clientele. By acquiring a similar establishment, he would be able to respond to that competition by occupying a place in the same market. In addition, salaries in Limoges were much lower than in Sèvres or even in Paris, wood was inexpensive, and money could be saved on the transportation of kaolin—all arguments that must have appealed to an administrator such as he.

This calculation, certainly understandable from a long-term perspective and within a thriving economy, turned out to be harmful to the Sèvres factory. The reorganization of Limoges in 1787 brought no improvement and, in 1792, the books were still in the red as a result of a lack of market share.

8. Édouard Garnier, "La manufacture de Sèvres pendant la Révolution," *La nouvelle revue*, 1891; E. S. Auscher, "La manufacture

- de Sèvres sous la Révolution 1789–1800,” in *Revue de l’histoire de Versailles et de Seine et Oise, vers 1902*; Tamara Préaud, Lecture delivered at the Manufacture de Sèvres on the occasion of the bicentennial of the French Revolution, July 21, 1989.
9. Manufacture Nationale de Sèvres, Archives (hereafter AMNS), Vj’ 5, fol. 118.
 10. Ibid., fol. 129.
 11. Comte Xavier de Chavagnac et marquis Gaston de Grolier, *Histoire des manufactures françaises de porcelaine* (Paris, 1906).
 12. AMNS, Vy 13, fol. 32. I thank Tamara Préaud for calling this document to my attention.
 13. Ibid., Vy 11, fol. 69 and 69v. Charles Louis Huguet de Semonville was the epitome of the opportunist in the late eighteenth and early nineteenth century. For him, the monarchy, the Revolution, the Reign of Terror, the Directory, the Consulate, the Empire, the Hundred Days, and the Restoration were all opportunities to advance his career. He acquired this service while posted in Brussels. Assigned by Danton to secretly negotiate the safety of Marie Antoinette and the dauphin, who were incarcerated at the Temple, he was abducted by the Austrians while in Graubünden and thrown into prison, first in Mantua and then in Kufstein. He was liberated in exchange for Madame Royale’s freedom and named a marquis in 1819. Jean Tulard, *Dictionnaire Napoléon* (Paris, 1989).
 14. AMNS, Vy 13, fol. 30 and v.
 15. Marie Théodore Gabriel, comte de Hedouville, 1755–1825, plenipotentiary minister in Moscow, 1802–4.
 16. Antoine d’Albis, “The Creation of Hard-Paste Porcelain: Production at Sèvres,” *The French Porcelain Society* (London, 1998).
 17. AMNS, C2/18/3.
 18. Tamara Préaud and Antoine d’Albis, *La porcelaine de Vincennes* (Paris, 1991).
 19. AMNS, carton L1.
 20. Elisabetta Dal Carlo, *Le Porcellane dell’ambasciatore*, exh. cat., Galleria Querini-Stampala (Venice, 1998).