

# Justus Erich Bollmann and His Platinum Enterprises

ACTIVITIES IN NORTH AMERICA AND EUROPE  
BEFORE THE YEAR 1816

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*Credit for first producing malleable platinum in North America in sufficient quantity to satisfy the needs of American industry and commerce must go to Justus Erich Bollmann, whose sheet platinum went into the construction of the first platinum still to be used in America for the concentration of sulphuric acid. An account is provided of the development of Bollmann's business and of his efforts to create new outlets for the metal.*

Justus Erich Bollmann was born in 1769 at Hoya-on-Weser in the Electorate of Hannover, where his father was a well-to-do merchant. After attending school in Karlsruhe he studied medicine and surgery at the University of

Göttingen and graduated MD in 1791. He then set out through southern Germany in pursuit of further medical knowledge and on reaching Paris in January 1792 he gave free medical attention to the poor in their houses in order to gain experience and he also spent some time learning French as well as in acquiring a knowledge of chemistry.



**Justus Erich Bollmann**  
1769–1821

*German physician, adventurer, merchant, economist, author and manufacturing chemist. Bollmann arrived in New York from England in 1796, after acquiring a knowledge of chemistry in Paris. He lived for most of the ensuing twenty years in Philadelphia where he became a member of the American Philosophical Society. He was the first to prepare malleable platinum on a commercial scale in the United States, and was responsible for providing the first platinum boiler used in America for concentrating the weak sulphuric acid produced by the lead chamber process*

Later that year when the life of the Comte de Narbonne, the French War Minister, was threatened, Bollmann succeeded at great personal risk in conducting him out of France to join a group of French émigrés in London (1). Though he did not realise it at the time, this episode was to have an important influence on Bollmann's future. In 1793 and 1794 he became involved in two attempts to secure the release from prison of Lafayette, formerly one of the French army commanders in Paris. The second attempt which was carried out with American financial backing and with the help of an American accomplice, Francis Huger, only failed when Lafayette was recaptured some twenty miles from the fortress at Olmütz where he had been held by the Austrians. For their part in the affair Bollmann and Huger were sentenced to six months confinement in an Austrian prison and to subsequent banishment from the country (2).

On their release from prison Bollmann and Huger made their way to London where in October 1795 they embarked for America and arrived at New York on 1 January 1796. Because of his efforts on behalf of Lafayette, Bollmann received a warm welcome in America and he was cordially received by President Washington. Some years later, when Thomas Jefferson became President, he sought Bollmann out on account of the services rendered to Lafayette and over a period offered him three government appointments: Consul at Rotterdam, Commercial Agent at Santo Domingo, and Factor at the Indian Agency at Natchitoches in Louisiana; but all were declined for commercial reasons.

In 1797 Erich Bollmann joined in partnership with his brother Ludwig to establish the firm E. & L. Bollmann at Philadelphia, their main business being to import Silesian linen on a commission basis (3), and with financial support provided by the London merchant bankers, John and Francis Baring & Company, to buy West Indian cacao, coffee and sugar for export to Hamburg (4). Shortly afterwards Erich married one of the daughters of John Nixon, a wealthy

Philadelphia shipping merchant and President of the Bank of North America.

The partnership with Ludwig lasted only six years. Following the conclusion of the Peace of Amiens between France and England in 1802, and the ensuing depressed state of the commercial ports of northern Europe, the Bollmanns lost over \$140,000 through an unwise speculation in tea, by failures of customer-firms in Philadelphia, and on their own exports to Europe. Bankruptcy followed in 1803 with Francis Baring & Company and Victor du Pont among the creditors (5).

The next few years were times of great hardship for Erich Bollmann and by 1809 his thoughts had turned towards agreeable scientific occupations whose profits might suffice for him to lead a quiet life (6). He attempted to interest Irénée du Pont, who had established a gunpowder factory at Wilmington, Delaware, the precursor of the modern Du Pont enterprise, in schemes for the manufacture of various chemicals but without success. He then established a small factory for making artificial flowers (7) but this venture failed when both home and foreign demand collapsed in 1812 after America declared war on England (8).

The years 1810 to 1812 saw the publication of four works by Bollmann, dealing in the main with national banking and finance; also an article on the Embargo policy of the American government, and a review of a publication by Gay-Lussac and Thénard. But as Bollmann confided to Irénée du Pont, all those works gave him "more Fame than Feeding, and even not much of that". (9) Bollmann then decided to devote the greater part of his time to practical chemistry, setting himself particular aims, one of which was to prepare malleable platinum and promote its use in the trades and the arts (10).

### **Production of Malleable Platinum**

The public first learnt of Bollmann's activities with platina, the crude alluvial ore which on purification yields platinum metal, through the publication in June 1813 of a note by Thomas Cooper, professor of chemistry and mineralogy at Dickinson College in Carlisle,

*Part of Bollmann's letter of 16 June 1813 to Professor Thomas Cooper wherein he gives some information about his own production and use of malleable platinum. He also expressed the hope that his process would become beneficial to the arts, and to society. Cooper published the letter in August 1813 in his "Emporium of Arts and Sciences"*

As the article stands it gives the impression, that I only do what Mr. Cloud did before, but better. The fact however is, that Mr. Cloud, whose merits I well know and fully acknowledge—does not seem to have intended more than to produce a cabinet piece of the greatest possible purity and specific gravity, and he has done so: but I have first rendered platina malleable in this country, by means of a process, which admits being executed on a *large* scale, and which, I hope, will become beneficial to the arts, and to society.—Pieces have been made of the weight of two pounds, and upwards. Sheets have been rolled of thirteen inches square, and vessels of platina are now making, and in preparation, which will hold from twenty to thirty gallons.

Pennsylvania (11). This note revealed that Bollmann had "succeeded in manufacturing Platina into bars, wire, spoons, and crucibles". Cooper could give no details of the process used by Bollmann, but he provided an outline of what he termed the "common method" of producing malleable platinum, a method which from its description appears to be the one employed by Richard Knight towards the end of the eighteenth century (12). Cooper also announced that the specific gravity of Bollmann's platinum was 19.7; this he contrasted with a value "upwards of 21" obtained by Joseph Cloud, an officer of the United States Mint, for a specimen of platinum which he had purified by freeing it from iron, palladium, iridium and rhodium.

Following the publication of Cooper's note, Bollmann wrote him a letter, dated 16 June 1813, in which he explained that the value 19.7 applied uniquely to the particular "ill hammered specimen" of platinum which Cooper had taken with him. He went on to state that his own platinum generally yielded a value of 21.5 and that he had even had several pieces of specific gravity 22.5. After pointing out that Cloud seemed to have intended to do no more than produce a cabinet piece of platinum of the greatest possible purity and specific gravity, Bollmann claimed that he was the first person in America to render platina malleable "by means of a process, which admits being executed on a *large* scale" (13), see above.

Bollmann went on to say that he did not

follow the "common method" as described by Cooper, because it "could not be executed in the large way with safety, accuracy and dispatch". He then revealed that he had found hints of another method in European publications, and after carrying out some unsuccessful trials he believed he had improved it considerably. He promised that he would give Cooper a full account of the method after some time had elapsed, but indicated that he had no intention of doing so immediately lest others might profit unfairly from his researches and thereby deprive himself of the opportunity to recover the expenses he had already incurred.

The production of malleable platinum from platina was referred to in a letter Bollmann wrote to Simon Snyder, Governor of the State of Pennsylvania:

"The ore comes from South America, in small Grains which are formed in the Beds of rivers, mixed with the Sand. The art of bringing these small Grains, into a solid mass, fit to be hammered, and wrought, depends on a very peculiar Process, of a chemical nature which is practically known to only a very few People in Europe, and which has never been executed in this Country before I attempted it myself. I have been so successful, that, according to the opinion of Mr. Cooper, and some other of the learned Chemists, I have even considerably improved upon the European method of working it, so that the greatest Part of my Process belongs to myself."<sup>(14)</sup>

So far as is known Bollmann never revealed the details of his process for producing malleable platinum. However in view of the

literature on platinum which was available at that time, one cannot help wondering whether Bollmann had read the article on 'Platina' published a few years earlier in "A Dictionary of Chemistry and Mineralogy". This article contained details of Knight's method of working platina, and also that of another Englishman, Thomas Cock, which was said to have been attended with complete success (15). McDonald has pointed out that Cock appears to have been unconscious of the presence in native platina of iridium, osmium, rhodium and palladium, all of which had been discovered and reported on a year or two earlier (16). However, as a resident in Philadelphia, and a member of the American Philosophical Society from 1800 onwards, Bollmann would have had no difficulty in learning of the procedure adopted by Cloud, a fellow member of the Society, for separating palladium and rhodium from crude platinum, the details of which were given in a paper Cloud read to the Society in 1809 (17). So it could be that if Bollmann had indeed "improved" on the method invented by Cock, such an improvement was achieved by adopting the chemical process for extracting palladium and rhodium as carried out by Cloud.

### Industrial and Commercial Uses

It has been said that when Bollmann began his work on platina, a considerable quantity of the crude metal existed in North America for which there was no demand (18). Whether or not this was the case, Bollmann could certainly have satisfied his requirements for platina from supplies smuggled out of New Granada through the port of Cartagena and shipped to Kingston, Jamaica, where they were handled by the local merchants Adams, Robertson & Company. Crude platina sold at Cartagena in 1814 for not less than five dollars a pound avoirdupois, the price at Philadelphia being six dollars (19).

The letter Bollmann wrote to Cooper in June 1813 contained the following statement:

"Pieces have been made of the weight of two pounds, and upwards. Sheets have been rolled of thirteen inches square, and vessels of platina are now making, and in preparation, which will hold from twenty to thirty gallons." (13)

The purpose for which such vessels were being made was not disclosed at that time, but a more illuminating account was provided in the letter Bollmann wrote to Snyder:

"There has been a Boiler made here, of rolled Platina, for the Condensation of Oil of Vitriol, which holds 25 gallons, and is the largest Vessel of Platina, probably, in Existence.—Points for lightening-rods are also made of it; Crucibles, small Scales for Apothecaries, Lancets for vaccination, Salt & Mustard spoons, and a variety of other Articles, chiefly for the Use of the Laboratory.

The Navy Department has just taken a Quantity of the lightening rod Points—which are superior to any other—for the Use of the Navy." (14)

American writers on the history of manufactures in their own country at that time all appear to repeat the statement first made by Freedley in 1854: that one of the earliest uses to which Bollmann applied these sheets of platinum was in the manufacture of a still for John Harrison, of Philadelphia, the first successful manufacturer of oil of vitriol in the United States. It was Harrison who introduced the lead chamber process into America, about 1793, soon after his return from a visit to England where he had spent two years studying chemistry under Joseph Priestley and acquainting himself, as far as he could gain access to them, with the latest manufacturing processes (18, 20). Harrison's annual output of oil of vitriol, from a large chamber which he built in 1807, was said to be 3,500 carboys (525,000 lbs); the platinum still that Harrison used weighed 700 ounces, held 25 gallons, and continued in service for about fifteen years (18).

The chemical firm started by Harrison was purchased by Du Pont in 1917, but few records exist in the Du Pont archives concerning the chemical activities of John Harrison, and nothing has been traced which links his name with that of Bollmann; the only significant reference to platinum in those archives occurs in the postscript to a letter of 4 September 1813 from Bollmann to Irénée du Pont: "Le Platine commence à être recherché pour des Emplois majeurs." (21)

A letter sent from Philadelphia to his brother

M. Irénéé Dupont  
 sur des manuscrits  
 Ute. 10. 10.  
 E. Bollmann  
 P.S. Je suis toujours occupé de l'affaire de Pu blanc. —  
 le Platine commence à être recherché pour des  
 Emplois majeurs

*Bollmann tried on several occasions to interest Irénéé du Pont in joining with him in the prosecution of new operations in the chemical industry, and he also kept him informed about the progress of developments undertaken by others. In this postscript to a letter of 4 September 1813 Bollmann informs du Pont of a start made by himself on the investigation of some major uses of platinum*

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Ludwig and dated 8 February 1814 includes the following report by Bollmann concerning his work with platinum:

"Incidentally I have advanced further in this platinum business than in London or Paris. In this town we make pots, scales, lancets, wire, points for lightning conductors and such like. In Europe no one has yet achieved such a large boiler as the one I recently perfected. I have also clad iron on both sides with it [platinum] and then rolled it into plates which are thin as sheet iron, and made it up into various vessels. Copper was plated in a similar manner. I am now making boilers and other containers out of it instead of bell-metal. This process is entirely new. I hope to take advantage of this valuable method also for general use. These, like some other processes, as for instance that for preparing malleable platinum, might become patented in England."

(22)

The public were told about Bollmann's success in cladding iron with platinum when Cooper published a note about it in April 1814 and stated that he had a specimen in his possession (23).

Other letters from Bollmann to his brother Ludwig yield further information about these platinum ventures. On 1 April 1814 he wrote:

"The demand for platinum is now increasing. The Marine Ministry has taken 300 (\$500 worth) of my platinum points; the War Ministry wants to take still more of them. . . . Moreover lancets, pairs of scales and similar articles come more into use each day, so that the prospects of a good platinum business decidedly increase."

Bollmann admitted to one disappointment however: he had had no success with pots lined

with platinum, on account of the difficulty which continued of joining the plated pieces in such a way that no unplated rim should remain exposed; and he realised that pots made entirely of platinum, even if very thin and encased in iron, proved expensive for common use even though they served their intended purpose perfectly (24).

An outline of the financial side of Bollmann's platinum business was given in a letter written to Ludwig on 27 April 1814. Sales in 1813 amounted to 3,000 dollars, and since 1 January 1814 to about 1,300 dollars. Platinum was considered to offer the prospect of a good financial return but the factory costs were large; and the expense of Bollmann's chemical studies and the outlay on buildings and apparatus had come to more than 2,000 dollars (25).

Already it had become evident to Bollmann that if his platinum business was to flourish he would need to develop entirely new uses in America for malleable platinum, uses which would create a large demand for the metal which he alone was in a position to satisfy. Within a short time five new potential applications were being actively promoted.

## Platinum Lustre Ware

The arts appeared to offer suitable opportunities for the use of platinum, and in June 1813 Bollmann advised Cooper that he had succeeded in giving the metallic lustre to pottery by means of platinum, the shades of

which could be varied at pleasure (13); its successful application to porcelain was announced by Cooper in the following spring (23). No details of Bollmann's process were given but Freedley stated some years later that the silver-coloured metallic lustre for porcelain was prepared with the oxide (26). The different shades of colour were obtained by mixing platinum with different proportions of gold.

We do not know whether Bollmann's 'lustre' process was taken up commercially in America. After Bollmann had settled in London in 1816 he would have seen examples of 'silver lustre', essentially an English development which had been introduced some years before (27). A continuing interest in this subject by Bollmann is shown by an enquiry he addressed to the English chemist, William Hyde Wollaston, who more than ten years earlier had begun the commercial production of malleable platinum in England:

"Perhaps you know, or could occasionally learn, whether Pottery, on the Surface of which Platina has been put, comes out of the Furnace with the metallic Lustre, or whether it is necessary to produce the Lustre by burnishing—I shall be glad to hear from you which is the Case when I have the Pleasure of meeting you again." (28)

## Platinum and the Working of Glass

The glass industry was regarded by Bollmann as a potential customer for his platinum sheet. In April 1814 Cooper reported:

"He will by and by introduce it into the glassworks, if not in the form of crucibles (which can be done) at least to furnish an unoxydable smooth plate, on which the glass blower can work his vessel. It promises, in his hands, to become a very important object to the useful and ornamental arts." (23)

Discussions to this end appear to have been entered into some months earlier with a Pittsburg glass works, almost certainly the firm Bakewell, Page and Bakewell which supplied Bollmann with his chemical glassware. This firm had built a new glass factory in 1808, and though its speciality was flint glass it was also the first in Pittsburg to manufacture cut

Perhaps you know, or could occasionally learn, whether Pottery, on the Surface of which Platina has been put, comes out of the Furnace with the metallic Lustre, or whether it is necessary to produce the Lustre by burnishing—I shall be glad to hear from you which is the Case when I have the Pleasure of meeting you again.

Respectfully Yours  
P. Bollmann  
16. Dinsingham st.  
Monday afternoon

*Paragraph of a letter from Bollmann to William Hyde Wollaston, another physician turned chemist, in which he enquires about the process followed in England when manufacturing platinum lustre ware. Wollaston produced malleable platinum in England in 1801 and made it available commercially from 1805 until 1822*

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glass and to ornament and engrave in glass work (29). Ludwig who was then living in Pittsburg apparently supported a proposal that in order to bring this new development into operation Bollmann should provide the firm with a loan of 12,000 to 15,000 dollars, free of interest for five years. Bollmann rejected the proposal on the ground that although he often possessed significant assets, especially of metal, he had no money available but rather stood in need of it himself (30).

## A Platinum Coinage

On 8 February 1814 Bollmann informed his brother that Bakewell & Company had provided him with a loan which would enable him to manufacture coins made entirely of platinum for use in Philadelphia (22); and on 1 April 1814 he reported that he had proposed a treasury coin of platinum which should take the place of treasury notes, and that his proposals for three-dollar bank coins had been well received by one of the banks (24).

Between these two dates Bollmann had also communicated his thoughts on a platinum coinage to James Monroe, the American Secretary of State (31). Bollmann had already published two pamphlets in which he had expounded his views on banking; he was highly critical of the American system whereby banks issued their own notes which had only a local circulation, and he favoured the creation of an American national bank, similar to the Bank of England, the notes of which would be redeemable in specie (32). Similar views were expressed by Bollmann in his letter to Monroe and he went on to suggest the use of

“a new metallic Substance, at once, and for the first Time brought forward with a Representative Character . . . Platina Treasury-Pieces, equal in every respect to Treasury-Notes, save the material, which would possess superior, and indeed very superior Qualities.”

The letter ended with the following observations:

“As the Platina is the heaviest of all Substances, the known Weight, and Size of the Pieces would every where afford a prompt Criterion of Genuineness.

As Platina is infusible, and the Art of treating this metal is not generally known, but remains with a few men of Science, and, practically, at least in this Country, with myself alone—Counterfits need not be apprehended.

These Treasury Pieces would not leave the Country, neither Wear nor Time would impair them. They would be equally suited for Payments to the Troops, as for Payments to Contractors and merchants.

. . . I shall therefore only add that the Value of Platina is Three Dollars p<sup>r</sup> Oz. Troy; that the Pieces, in my Opinion, ought to be of various Sizes, from that of half an Eagle, to half a Dollar, and represent 10. 50. 100 Dollars and upwards, with suitable Impressions, and a Circumscription expressive of their Character, and Value;—that Platina is as easily coined as Gold & Silver, that a considerable Quantity of the metal is ready for Use, that more could soon be prepared from the crude Ore, and that more of this Ore is expected to be shortly received.” (31)

A platinum coinage appears also to have been in Bollmann's mind when he was staying in Vienna from October 1814 until May 1815. Soon after his arrival there he began to study the Austrian monetary system which was then

badly in need of reform, and within a few weeks he had written an essay on the subject and passed it to Count Philipp Stadion, the provisional head of the Austrian Ministry of Finance. The essay contained a proposal for the reorganisation of the existing system through the founding of a national bank; this proposal appealed to Stadion, the two men had frequent meetings to discuss the manner of its execution, and according to Bollmann platinum was brought into those discussions. It is said that Bollmann had brought a specimen of platinum with him from America and that he offered to reveal his own method for working the metal specifically for the production of coins (33).

During Bollmann's stay in Vienna an interest in his proposal for minting coins of platinum was shown by the Russian Minister of Finance, Count Gurieff, who entered into correspondence with him on the subject (34). No immediate action followed, but after Mamyshev had made the first discovery of alluvial platinum in Russia in 1824 he then suggested that platinum should become a coinage metal in Russia. In 1828 the Russian government resolved to coin a large sum in Siberian platinum (35) and it was not until 1846 that the production of platinum coins in Russia was discontinued and the whole platinum currency withdrawn.

## Medals and Rings

The impressment of American seamen for service in British vessels caused much concern to the United States early in the nineteenth century, with an estimated 6,000 or more Americans so impressed by June 1812 when the United States declared war on Britain (36). Victory for either side in this war seemed remote, and when in November 1813 Britain offered to negotiate a peace Bollmann regarded this as an opportunity for him to create a new demand for malleable platinum. Believing that the impressment issue was likely to form a prominent point in the political discussions that would engage the attentions of those involved in the peace negotiations, Bollmann formulated a proposal which he believed was worthy of

consideration by both the American and British governments. This he outlined in a letter sent on 20 April 1814 to James Bayard, one of several commissioners who were about to be sent to Europe by the American government to negotiate a peace treaty (37).

Bollmann's proposal involved the creation and maintenance of a register of American seamen and the issue to each man of an identification medal, made from a suitable metallic alloy, which the holder would carry on his person. An alloy of platinum and copper was suggested as being handsome, durable and yet of little commercial value; it would be struck at the public mint and would bear the arms of the United States on one side and the holder's registration number on the other. Bollmann suggested that such a medal might be suspended from an ear-ring, or by a chain of the same material worn round the neck; alternatively a suitably stamped ring might be made from the same alloy for wearing on the finger.

Nothing came of Bollmann's proposal, however, and when a peace treaty was signed at Ghent in December 1814 the subject of impressment received no mention whatsoever.

## Standard Weights and Measures

In 1807 and 1808 the Senate of the State of Pennsylvania considered reports from a committee set up to consider the need for a uniform system of weights and measures. These reports recommended that until Congress established a system applicable to the whole of the United States, the Senate of Pennsylvania should establish its own standards based on the English foot-rule, the pound avoirdupois and the pint, and that three original "Pennsylvania standards" for length, weight and capacity respectively should be prepared from platinum metal (38).

A bill to this effect, drawn up by the committee, progressed no further in Senate than its first reading. It was not until 21 December 1814 that the matter came up again, when members of the State Assembly were circulated with copies of letters which had passed between Bollmann and Snyder some nine months before

(39). Bollmann's letter contained a list of those properties of platinum which he considered made it the most suitable metal to use for the manufacture of the "Pennsylvania standards"; he thought that three length standards should be prepared, for the English foot, yard and chain respectively, and that the weight standards should cover the range from one pound down to one drachm. He also suggested that the principal standard measures for capacity might be made of rolled platinum and afterwards coated with cast iron or with bell-metal (14).

Small specimens of the ore and of malleable platinum were forwarded with Bollmann's letter in case Snyder had not previously seen any samples. However, in view of the lateness of the current session of the legislature and the consequent pressure of business, Snyder decided to hold over Bollmann's communication until the next session (40). By then Bollmann was in Europe and it was not until 10 December 1815 that he was able to advise Snyder of his recent return to America and of his readiness to attend to the matter should the legislature decide to act upon his proposition (41). This was reported to the General Assembly twelve days later but no action was ordered (42), and less than five months from then Bollmann had once again sailed for England (43).

## Prospects in Europe

In July 1814 Bollmann left Philadelphia for Austria, passing through London and Paris on his way to Vienna (44). Regarding the purpose of this trip William Crawford, the American Ambassador to France, reported as follows:

"This philosophic and science-loving man, it seems, has undertaken a voyage from the United States to impart to the chymists and mecanicians of Europe his discoveries in rendering zinc malleable, and is going to Austria . . . to establish steam-boats on the Danube." (45)

However, in view of the fact that malleable zinc had been available for many years (46) and that, as far as is known, Bollmann never carried out any work on that metal, it seems reasonable to

presume that it was platinum rather than zinc which Crawford should have referred to.

During his stay in London Bollmann called on the English chemist, William Hyde Wollaston (47), from whom undoubtedly he would have learnt of the latter's success several years before in producing malleable platinum and of the production by 1812 of four large platinum boilers for acid manufacturers, the first having been made in 1805 (48). These facts would have sufficed to banish any hopes that Bollmann might still have entertained of securing British patents to protect his own platinum processes (22).

In Paris, too, it is unlikely that Bollmann would have been able to add anything to the knowledge of men such as Janety the younger, Vauquelin and Bréant, all of whom had succeeded in producing platinum of a high degree of malleability (49).

Bollmann's efforts to interest Austrian statesmen in a plan for establishing a steamship line on the Danube came to naught (50). His activities in Vienna in seeking to promote the idea of a platinum coinage have already been mentioned, but the fact that Baring Brothers contributed towards Bollmann's expenses in Vienna (51) may suggest yet another reason for his presence there at that time: the possibility of buying quicksilver from Austrian state mines and shipping it to the Chocó district of New Granada for separating gold from the platina in the alluvial deposits.

## The End of an Era

After his return to America towards the end of 1815 Bollmann became soured by the failure,

as he saw it, of the government there to act on various projects which he had brought with him from Vienna, one being that he should be appointed as the United States agent accredited to the Austrian government with responsibility for developing trade between the two countries, an appointment which he knew would have Prince Metternich's approval (52). Bollmann may also have concluded that there was little prospect of deriving a reasonable income from his platinum enterprises in America, for none of his efforts to create new demands for platinum had achieved any success. England on the other hand seemed to offer some chance of a good livelihood to be gained as a manufacturing chemist.

In May 1816 Bollmann left America for England, taking his two daughters with him (his wife having died fourteen years earlier). When John Quincy Adams, the American Ambassador in London, visited him two months later he learnt that Bollmann had come "upon some new project of a manufacture" and expected to stay at least two years in Europe. Adams doubted whether Bollmann intended ever to return to the United States (53) and such indeed proved to be the case.

## Acknowledgements

The assistance of Baring Brothers & Co. Ltd, and of the Syndics of Cambridge University Library, in making their archives available for study is gratefully acknowledged. The author's thanks are due also to the following institutions in the United States for granting permission to quote from material in their archives: the Eleutherian Mills Historical Library, Wilmington, Delaware; and the Pennsylvania Historical and Museum Commission, Harrisburg, Pennsylvania.

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