

# Platinum Sales Problems in the French Revolution

## JANETY WRITES TO SIR JOSEPH BANKS

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About 1786 Marc Etienne Janety, Master Goldsmith of Paris, began to work in platinum at his establishment on the corner of the Rue de l'Arbre Sec and the Rue Bailleul, near the Louvre. He perfected the arsenic process for making it malleable, and produced jewellery, snuff boxes and tableware, as well as a certain amount of scientific apparatus (1). The beginning of the French Revolution left him with platinum that he could not sell, and in an effort to find a market in England he wrote on December 13th, 1789, to Sir Joseph Banks, the President of the Royal Society.

Though he was educated at both Harrow and Eton before going to Oxford, Banks did not adopt the usual way of life of a wealthy young English gentleman. While at Eton

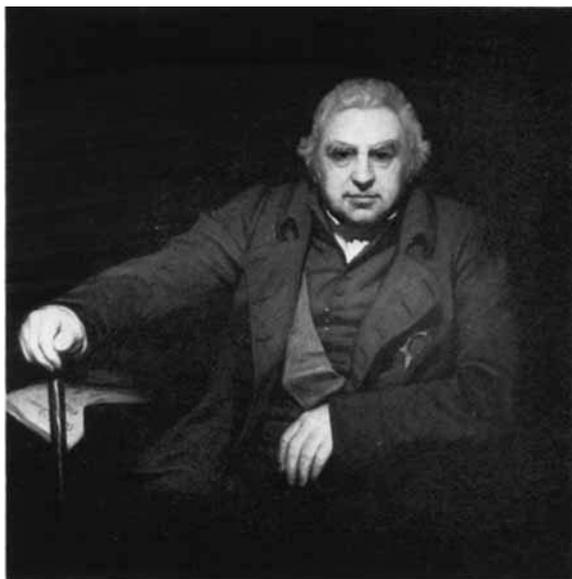
he became passionately interested in botany, receiving his first lessons for sixpence a time from countrywomen who collected medicinal herbs. Instead of going on the Grand Tour of Europe he sailed in 1766 as naturalist on an expedition to Labrador and Newfoundland, and from 1768 to 1771 he led the group of scientists accompanying Captain James Cook on his first voyage round the world (2).

Banks became a Fellow of the Royal Society in 1766, when he was only twenty-three, but this was not unusual at the time, for any man of wealth and social standing was welcomed by the Society, and membership did not necessarily denote high scientific ability and experience. In 1778 he was elected President, and he remained in office until his death in

### Sir Joseph Banks 1743-1820

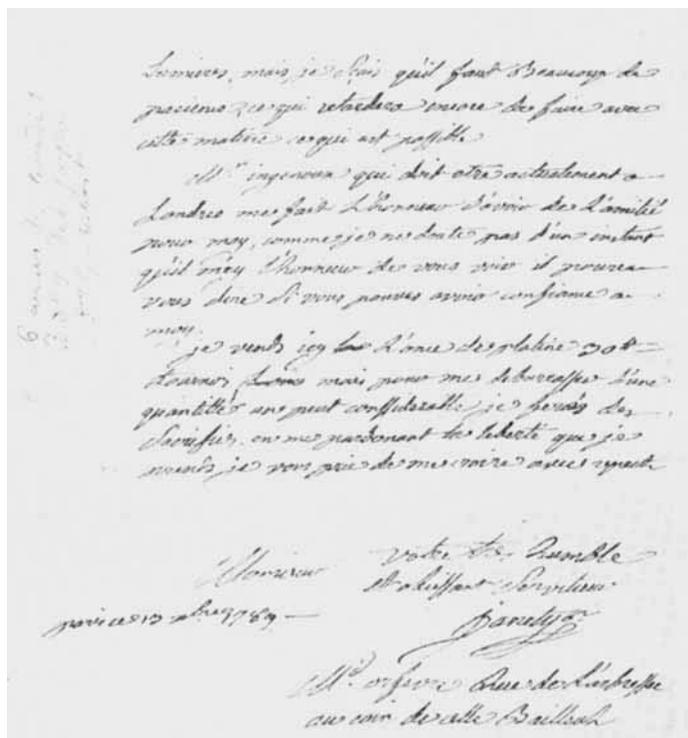
*As President of the Royal Society he dominated the scientific world for nearly forty-two years. His correspondence shows that he was always willing to encourage closer relations between British and continental men of science.*

*(From the portrait by Thomas Phillips in the National Portrait Gallery)*



The second page of Janety's letter, dated December 13th, 1789, in which he hopes to enlist the help of Banks in disposing of his stock of platinum. Janety had succeeded in producing malleable platinum, but the beginning of the French Revolution left him with metal that he could not sell. Banks received the letter ten days later, and his pencilled note on the side gives the names of those of his friends who wished to buy small quantities of platinum

(By courtesy of the Trustees of the British Museum)



1820. A sociable as well as a rich man, Banks opened his house and library in Soho Square every morning to men of science from all countries, and he attended personally to his voluminous correspondence.

Janety's letter of December 13th, 1789, which is now in the Banks papers in the British Museum (3), may have been written at the suggestion of Jan Ingenhousz, a Dutch naturalist who sometimes travelled between London and Paris. It can be freely translated as follows:

Sir,

Without having the honour of being known to you, I nevertheless take the liberty of writing. By the most persistent labour I have succeeded in making platinum malleable. This discovery, from which at any other time I would have greatly benefited, is of no advantage to me here, because of circumstances that are known to all Europe.

Knowing the interest, Sir, that you take in the arts and sciences, I think I may permit myself to offer you a quantity of very malleable platinum in bars. If you are able to accept my

proposition, I shall also divulge my process to you. I am not sufficiently vain to believe that if you wish to turn your attention to the subject you would need my small amount of knowledge, but much patience is required, and this would delay the full utilisation of the substance.

Mr Ingenhouse [Ingenhousz], who must now be in London, does me the honour of being friendly towards me. As he will doubtless have the honour of seeing you, he will be able to tell you whether you can have confidence in me.

Here I sell an ounce of platinum for 30 *livres tournois* [about 26 shillings], but to dispose of a fairly large quantity I would make a reduction.

I ask you to excuse the liberty that I take. . . .

Janety

Master Goldsmith, at the corner of the Rue de l'Arbre Sec and the Rue Bailleul. Paris, 13 Xbre [December] 1789.

A botanist with no knowledge of metallurgy, Banks was probably unimpressed by Janety's flattering suggestion that, given time, he would himself discover how to work platinum. He does not seem to have arranged to buy a large amount, for in 1791 Janety was able

to supply over 400 ounces to the Paris Academy of Sciences, but he clearly took some action after receiving the letter, for it bears an endorsement in his own hand which seems to show that six ounces were wanted by Henry Cavendish and three ounces each by Alexander Dalrymple and Alexander Aubert – all Fellows of the Royal Society with whom Banks was in regular contact.

Why did these three men want to buy a few ounces of platinum? Normally the historian refuses to commit himself in print to any statement unsupported by documentary evidence, but sometimes it is interesting to speculate. There is no certain proof that any of them used platinum for a specific purpose, and it is of course possible that they acquired it merely out of curiosity. However, it may be significant that they were all engaged in work where platinum might have been useful.

In 1786, A. M. Rochon, of the French Naval Academy at Brest, described how he made a concave mirror for a reflecting telescope out of platinum, and he said that plane mirrors could also be made, for use in navigational and astronomical instruments such as octants and sextants (4). At that time the mirrors were generally made of speculum metal – a highly reflecting alloy of tin, copper and arsenic – but it tarnished easily, and Rochon found that platinum, either pure or alloyed with a little speculum metal, was free from this defect. His mirrors were evidently popular, for he was still making them – both concave and plane – in 1806, when they were shown at the Exhibition of National Industry in Paris (5). Rochon's paper was not published until 1798, but it was originally read in 1786 at a meeting of the Paris Academy of Sciences, and knowledge of his work must soon have reached Banks' circle. The news that Janety was offering malleable platinum for sale might have interested anyone who worked with astronomical and navigational instruments.

Alexander Aubert (1730–1805), the wealthy governor of the London Assurance Company, was an amateur astronomer with a splendidly

equipped observatory. Alexander Dalrymple (1737–1808), at one time Hydrographer to the East India Company and later Hydrographer to the Admiralty, drew up many charts of oriental waters. Henry Cavendish (1731–1810), famous for his physical and chemical researches, was also interested in astronomical measurements; in 1790 he showed how the height of the aurora borealis could be calculated from observations of its position at three different places (6), and in 1797 he described a method of calculating the angular distance between the moon and a star (7).

It may therefore be reasonable to suggest that 12 ounces of Janety's platinum was made into mirrors by one or other of the excellent instrument makers then working in London, but as a precaution this note can be concluded with the words of Cavendish: "I wish it to be understood, however, that I do not offer this as a theory of which I am convinced; but only as an hypothesis which has some probability in it" (6).

#### References

- 1 D. McDonald, *A History of Platinum*, London, 1960, 53
- 2 H. C. Cameron, *Sir Joseph Banks*, London, 1952
- 3 British Museum, Additional MS. 8097, f.323
- 4 *J. Physique*, 1798, 4, 3–15
- 5 Notices sur les objets envoyés à l'exposition des produits de l'industrie française, Paris, 1806, 289
- 6 *Phil. Trans.*, 1790, 80, 101–5
- 7 *Phil. Trans.*, 1797, 87, 119–122

### Wollaston's Classic Lecture on Platinum

As the first in a series of 'Metallurgical Classics' the American Society for Metals has published in the December 1967 issue of its Transactions a reproduction in facsimile of W. H. Wollaston's Bakerian Lecture of 1829 to the Royal Society, 'On a Method of Rendering Platina Malleable'. This is accompanied by an extensive commentary on Wollaston's life and work, and on the significance of his contribution, by Professor Joseph Gurland of Brown University.