

## MISADVENTURES OF A MINT – BOULTON, WATT & CO. AND THE ‘MINT FOR THE BRAZILS’

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IN modern times it may seem strange that in the past citizens of countries nominally at war could often study, transact business, cross frontiers, talk and travel in each other's lands with relatively few hindrances. In describing the fortunes of the Brazilian Mint it is necessary to recall something of the historical background in Portugal and Spain against which the Portuguese ambassador conducted his negotiations with Boulton, Watt and Company between 1809 and 1811.

On 29 November 1807 a frightened Dom Joao, Regent of Portugal, with 2,000 courtiers and bulky treasure chests, was finally persuaded by Lord Strangford to flee from Lisbon with a British battle squadron that had been waiting in the Tagus. The French reached the town two days later under General Junot. He governed in Napoleon's name, until the French were defeated at Torres Vedras in August 1808. Dom Joao's Council of Regency then took over the government and Beresford became commander-in-chief of the Portuguese forces with a special brief to look after Dom Joao's interests. Despite French successes in 1809 the lines of Torres Vedras held firm, and by May 1811 the French were out of Portugal for good. The Council of Regency naturally now increased its pressure on Joao to return but the prince steadfastly refused and liberalism, freemasonry and republicanism gained ground. Though his mother died in 1816, he only yielded to the Council's overtures five years later, by which time an elected Cortes had evolved a constitution based on the Spanish model, with the church and nobility losing their seigniorial privileges and the sovereignty of the people being recognized.

On 1 September 1808, eight months after Dom Joao's arrival in Brazil, the Spanish American duros that had been exchanging at 750 or 800 reis were countermarked to increase their selling price to 960 reis, the operation being conducted at the mints of Rio, Bahia, Vila Rica, Serro Frio, and possibly also at Rio des Mortes and Pernambuco. The government thus cleared a profit of between 160 and 200 reis per coin. Commonly called 'Minas' after the great mining centre of Minas Geraes, the basic coins originated mainly in Potosi, Mexico City and Lima, with rarer pieces from Santiago de Chile. At the same time more thoroughgoing changes were pondered – which resulted in the Chevalier Dom Domingos Antonio de Souza Coutinho visiting the Soho offices of Matthew Robinson Boulton in the autumn of 1809, accompanied by Senhor Gaspar Marques who was to be instructed in the use of the machinery which the ambassador had been directed to buy on behalf of the Brazilian government.<sup>1</sup>

Early completion of the mint mechanism, emphasized the Chevalier de Souza Coutinho, was most important. The London firm of John Charles Lucena and Manoel Antonio de Paiva was appointed by the ambassador with full powers to conclude agreements, since the guarantee of a British mercantile house was necessary as the channel for such

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<sup>1</sup> For the account of these events we are indebted to the Matthew Boulton Papers in the City of Birmingham Library Archives Department. All the citations are drawn from the Brazil Mint Box, 1809–1814, which contains correspondence, documents and narrative.

transactions.<sup>2</sup> Planning began immediately and a preliminary estimate of the necessary machinery was sent to the agents on 2 October.<sup>3</sup> This indicated that the proposed plant would be able to recoin between 150,000 and 200,000 dollars per week, that duplicates of all parts liable to wear or break would be prepared (a measure especially important because of Brazil's distance and its lack of skilled workmen), that an engraver was being directed to produce obverse and reverse dies of the required coins, that matters would be well advanced if Mr Marques cared to visit Soho in about a month – and that all could near completion in a year. Mr Zaccheus Walker, a cousin of Matthew Robinson, participated in many of the early negotiations as, for instance, delivering specimens of the newly struck dollars to de Paiva.<sup>4</sup>

After examining Boulton's initial proposals, the ambassador expressed doubts about the need for a steam-engine to drive the rolling mills, in view of the availability of water-power in Brazil.<sup>5</sup> Discussion of this point took up the whole of November, with Matthew Boulton observing that Europe generally preferred horse- to water-power, that in any case the essential requirement was a strong, constant and uniform supply of energy, that the cost of watercourses and wheels would differ little from that of a steam-engine whilst the cost of fuel would be offset by the greater convenience of having the whole of the mint under the same roof. In any case an early decision was desirable so that everything might be got ready for despatch together.<sup>6</sup> The ambassador agreed to the inclusion of a 10 h.p. engine which should, he thought, suffice to drive the coining section machinery and trusted that construction could then proceed.<sup>7</sup> With this Boulton had to rest content though he could not resist the comment that it would not only be most inefficient to have the rolling mills separated from the rest of the mint, since frequent inter-communication was essential, but that considerable risks would be run when precious metals were involved.<sup>8</sup>

The main concerns of the correspondence of December 1809 and January 1810 were the training of Gaspar Marques in the use and assembly of the mint machinery, and the ambassador's desire to have plans and drawings of the whole plant to send to Brazil. The question of engaging a millwright to accompany and set up the mint in Rio was also discussed, with Coutinho making such cheese-paring suggestions as that the payment of wages should only commence on his arrival at Rio.<sup>9</sup>

Attention then moved to the finalizing of the agreement, on the drafting of which the ambassador's solicitors seemed to be dragging their feet – no doubt at his instigation. Eventually, in February, Matthew Robinson called upon the Portuguese ambassador and, after each had made a few verbal amendments, the final wording of the document was agreed. The actual signing was still delayed by Coutinho not wishing this to take place before receipt of formal sanction from the Foreign Secretary to the machinery's being shipped to Brazil, a sanction which Boulton had suggested long before might be necessary since both Russia and Denmark, in similar circumstances, had obtained them previously. At last, on 16 June, 'the Articles of Agreement for preparing Coining Machinery for the Brazils' was signed.<sup>10</sup> The major items listed were:-

<sup>2</sup> Item no. 5, endorsed 'Statement of the Correspondence & Negotiations with Mons De Lucena & De Paiva relative to the Portuguese Mint', with copies of various Letters etc. relative to the intended establishment of a Coining Apparatus for the use of the Portuguese Govt. in the Brazils by Mr M.R. Boulton. Also interview between Boulton and de Paiva in London, early autumn 1809.

<sup>3</sup> Boulton to de Paiva, 2 October 1809, enclosing a 'Schedule of Coining Apparatus and Rolling Mill'.

<sup>4</sup> Without knowing the instructions given by the Portuguese ambassador, it is difficult to comment on the Boulton, Watt patterns. However, it seems unlikely that they would have been asked to do more than tidy up the existing design,

which had been in use on the Brazilian silver coinage since 1695, and would survive until 1818. That was in fact what the Birmingham firm did, producing a sharp, workmanlike job.

<sup>5</sup> Z. Walker (London) to Boulton, 10 November 1809.

<sup>6</sup> Boulton to the Portuguese ambassador, 24 November 1809.

<sup>7</sup> Recorded in narrative (Item no. 5), affirming the ambassador's acquiescence in a letter written to de Lucena on 27 November 1809.

<sup>8</sup> Boulton to Portuguese ambassador, 24 November 1809.

<sup>9</sup> Lucena and de Paiva to Boulton, 1 May 1810.

<sup>10</sup> Item no. 20; Articles of Agreement between Boulton, Lucena and de Paiva, 16 June 1810.

- i. 1 10 horse power rotative engine with two boilers.
- ii. 4 coining presses.
- iii. 6 cutting-out presses.
- iv. 2 double milling machines.
- v. 2 turning lathes.
- vi. 2 shaking machines.
- vii. 1 die-multiplying machine.
- viii. The iron work for 2 annealing furnaces.

Among the minor items were dies and punches, 'plummer blocks and brasses for communicating motion', drawings, 'general and detailed' of the buildings and machinery, full instructions for erecting and working the said machinery and apparatus as well as how to maintain it; all to be 'properly completed, cased and packed' and delivered at the London docks in Wapping within twelve calendar months of the signing of the agreement. 'And these presents witness that in consideration of the Covenants hereinbefore contained . . . and for and in consideration of the sum of ten Shillings of lawful money of Great Britain . . . well and truly paid' by Matthew Robinson Boulton to John Charles Lucena and Manoel Antonio de Paiva, the latter would deliver 'or cause to be delivered' two acceptances, each for the 'Moiety' of £8,550, one payable at two months and the other at four months. So the legal package was neatly drawn up and completed and it only remained for the machinery to follow suit. Or so it then seemed.

It is interesting to compare this list with the order placed with Boulton, Watt and Company for the Guanajuato mint in Mexico in 1825.<sup>11</sup> There the main items were:-

- i. 2 steam engines, 1 for the rolling mill, 1 for the coining presses.
- ii. 4 coining presses.
- iii. 8 cutting-out presses.
- iv. 2 milling machines.
- v. 1 die-multiplying machine.

and these, with all the shafts, pulleys, wheels, tools etc., packed and delivered at the port of embarkation would cost £8,162 – apparently very little difference either in cost or content from the Brazilian mint of fifteen years before.

Only one letter seems to have been written from the Soho works in the remainder of the year and that was just sixteen days after the signing of the contract when Mr Boulton asked Lucena and de Paiva for instructions about the shipment of the mint to Brazil.<sup>12</sup> No reply to this is traceable and we next jump to February 1811 to find Boulton concerned about agreements with the workmen needed to accompany the mint to Brazil and to attend to its erection there.<sup>13</sup>

In March all was amicable, with Boulton sending 300 silver-gilt medals to the Chevalier 'of the Prince-Regent of Portugal on the subject of the Capture of Cayenne' and a 'Cabinet-Specimen in Bronze' of the medal for his own use, as well as a small collection of the principal medals struck in the Soho mint. De Paiva was then advised that the mint drawings had been completed and handed over to Gaspar Marques.<sup>14</sup>

In April the climate began to change as Boulton informed the Portuguese agents that the machinery was ready to forward and instructions were sought. Its total weight was some forty tons.<sup>15</sup> Lucena and de Paiva first temporized, acknowledging receipt of Boulton's

<sup>11</sup> R.G. Doty, 'A Mint for Mexico: Boulton, Watt and the Guanajuato Mint', *BNJ* 56 (1986), 127.

<sup>12</sup> Boulton to Lucena and de Paiva, 2 July 1810.

<sup>13</sup> Boulton to G. Marques, and to Lucena and de Paiva, 23

February 1811.

<sup>14</sup> Boulton to Lucena and de Paiva, 14 March 1811.

<sup>15</sup> Boulton to Lucena and de Paiva, 25 April 1811.

letter and saying that it 'had been laid before H.E. for instructions'.<sup>16</sup> Boulton reiterated his request.<sup>17</sup> At the end of May the ambassador counter-attacked, citing the late arrival of the drawings as the reason why he had now to ask for the machinery to be kept at Soho until Marques could get to Brazil and then advise how many workmen would be required to erect it; otherwise costs, especially wages, would mount up whilst the buildings were being constructed.<sup>18</sup> On 3 June Matthew Boulton briefly but firmly refuted de Souza's weak excuse and explained his reasons for not retaining the machinery at Soho. At the same time he sent a copy of this letter to Messrs Lucena and de Paiva calling upon them for the immediate provision of an address to which to send the numerous, bulky packages.<sup>19</sup> However he had the grace to wait until 23 July before despatching them – and then trouble really began.

Dated 29 July is a copy of a list of 'the Marks, Numbers & Weights of the Castings, Boxes etc. for the Brazil Mint'.<sup>20</sup> There are 76 packages containing eduction, suction, stop, stand and safety pipes, manholes, columns, entablature beams, fly-wheels and plummer blocks, all parts of the 10 h.p. steam engine that was to drive the coining presses. Additionally there were 7 boxes as well as BM 137 & 138 containing another flywheel, the whole weighing 451 cwt 22 lbs or 22 tons, 11 cwt 22 lbs. There must have been further lists of the component parts of the various presses, lathes, shaking and die-multiplying machines which Lucena and de Paiva had solicited so that they could send someone to the docks to check the mint's arrival. These lists were duly dispatched on 31 July.<sup>21</sup> On 21 August the London agents finally conveyed the Portuguese ambassador's approval to the terms of appointment of Mr Thomas White, millwright, to accompany the machinery to Rio de Janeiro, adding that they had 'engaged a British ship' to carry the freight.<sup>22</sup> At this point Matthew Robinson Boulton must have drawn a breath of relief and on the following day he advised Lucena and de Paiva that he was uttering two drafts drawn upon them in the total sum of £8,550 as agreed in the contract.<sup>23</sup> A week later he received a further boost when his London agent, Mr John Mosley wrote that the machinery was in process of arriving but, as the barge could not get alongside the ship, the loading would take some time. However a conversation with Mr Lucena had suggested that there would be no delay in the acceptance of the bills.<sup>24</sup>

Two days later the blow fell.

London 31st August 1811

Dear Sir,

The Barge with the Mint-Machinery etc. was cleared this morning at the London Docks, but on comparing the Invoice with the Captain's Book, and also with the Custom-House Officer's Account it appears that the Box BM No. 18 & BM No. 72, an Entablature Beam, are wanting. – I have seen Mr. Wise for Paddington Boat Co. who will write to Mr. Jackson at the Wharf at Birmingham to enquire whether they were left there & if so to forward them *by first Waggon* & Mr. Wise will send to Bull-bridge to know whether they were left in removing the Goods from Canal-Boat to Barge. – It is very vexatious that these Articles should be missing, as we cannot expect that Lucena and de Paiva will accept the Bills till proof can be produced of the delivery of the whole at the Docks, & in case they should be immediately accounted for there will be at *least* a Week elapsed before they can be delivered; however I trust there will be no risk of the Ship's sailing without them (if to be found) as the Captain says he shall certainly *not* sail sooner than a fortnight from this time.

Mr. Z. Walker.

I am etc.  
(signed) Jn.<sup>o</sup> Mosley.

<sup>16</sup> Lucena and de Paiva to Boulton, 30 April 1811.

<sup>17</sup> Boulton to Lucena and de Paiva, 15 May 1811.

<sup>18</sup> Portuguese ambassador to Boulton, 26 May 1811.

<sup>19</sup> Boulton to Portuguese ambassador, and to Lucena and de Paiva, 3 June 1811.

<sup>20</sup> Memo (Item no. 35) endorsed 'Brazil Mint. Weights

and Marks. Packages', 29 July 1811.

<sup>21</sup> Boulton to Lucena and de Paiva, 31 July 1811.

<sup>22</sup> Lucena and de Paiva to Boulton, 21 August 1811.

<sup>23</sup> Boulton to Lucena and de Paiva, 22 August 1811.

<sup>24</sup> J. Mosley (London) to Z. Walker or W.D. Brown (Soho), 29 August 1811.

P.S. As Robinson is returned from Lincolnshire I proposed going to-morrow to Ramsgate for three or four days to Mrs. M – and the Children – as it appears the above Business cannot be settled 'till after that time – please mention this to Mr. Boulton when he returns home.

Answ.<sup>d</sup> 2nd. Sept.<sup>r</sup> 1811 – Rtd. to J. Robinson.

This information was immediately sent on to Boulton at his country house in Leamington with the additional details that Box BM 18 contained 'Parts of a Press-frame No. 4', forwarded from the Soho office on 23 July and for which Zaccheus Walker held the receipt of the Paddington Boat Co.'s agent in Birmingham, whilst the entablature beam, BM 72 was sent from the Engine Yard on the same date according to their 'Carriage-Note'.<sup>25</sup> Consequently it seemed probable that they might have been 'mislaidd in the removal from out the Canal-Boat into the Barge' at 'Bullbridge' as suggested by Mosley, 'in which case to-morrow's Post might be expected to bring some better News'. In fact it was only on 6 September that John Mosley was able to supply better news – 'The Captain of the Ship is now convinced that the whole of the Mint and Engine Materials are on Board and that the mistake arose entirely from his keeping an incorrect Account of the Articles as they were received on Board. He has now signed an acknowledgement that they are on Board in a Copy of the Invoice which was sent from Soho to Lucena and de Paiva which I gave to Mr. Lucena today so that all is now right with the delivery. Mr Lucena promises to accept the Bills after comparing the Captain's Receipt with the Invoice. . .'.<sup>26</sup> In spite of this, all was not yet in the clear, for eleven days later, Mosley explained that Lucena now wished to have an annexure attached to the contract. Availing himself of the excuse that the confusion caused by the supposedly missing articles had prevented him from checking the correctness of the machinery, he now requested Boulton to state that if any items were missing they would be replaced, and that copies of the drawings would also be furnished if required. There would be no objection to Mosley's signing for Mr Boulton and a copy of the desired annexure which had been cleared by Mr Weston (apparently the London lawyer of Boulton, Watt and Co.) was appended.<sup>27</sup> With his customary directness, Boulton dismissed the idea of an endorsement 'as this would appear like placing a new Agreement upon the back of the old one'.<sup>28</sup> Instead he provided a letter describing at length the opportunities for inspection of the machinery and the instruction in its functioning and erection, together with the drawings of it, that had been given to Gaspar Marques, who had already left for Brazil, and adding that, if any article were missing and shown as probably not packed, he would 'not object to rectify the mistake'. Lucena and de Paiva expressed themselves as 'satisfied with the Contents' of Boulton's letter, but still pressed for something to that effect to be written upon the contract. This had entailed yet another week's delay and sufficed once more to exasperate the Birmingham businessman, who clearly knew exactly when to give ground and when to stand firm. By return of post, on 26 September, Zaccheus Walker conveyed his cousin's surprise at the Lucena – de Paiva stance, indicated that the letter he had sent was his final word on the subject and asked point-blank whether they intended to accept or refuse the bills as he considered the 'Agreement on his part having been literally and virtually fulfilled'. The very next day Mosley wrote that, though Messrs Lucena and de Paiva appeared dissatisfied at Boulton's attitude, they '*have accepted the Bills*'.<sup>29</sup> The episode was at an end.

The final phase of this Brazilian venture very properly takes place in that country. From Rio de Janeiro Gaspar Marques addressed to Matthew Robinson Boulton five remarkably lively letters whose spelling and grammar are almost as original as their contents. Their

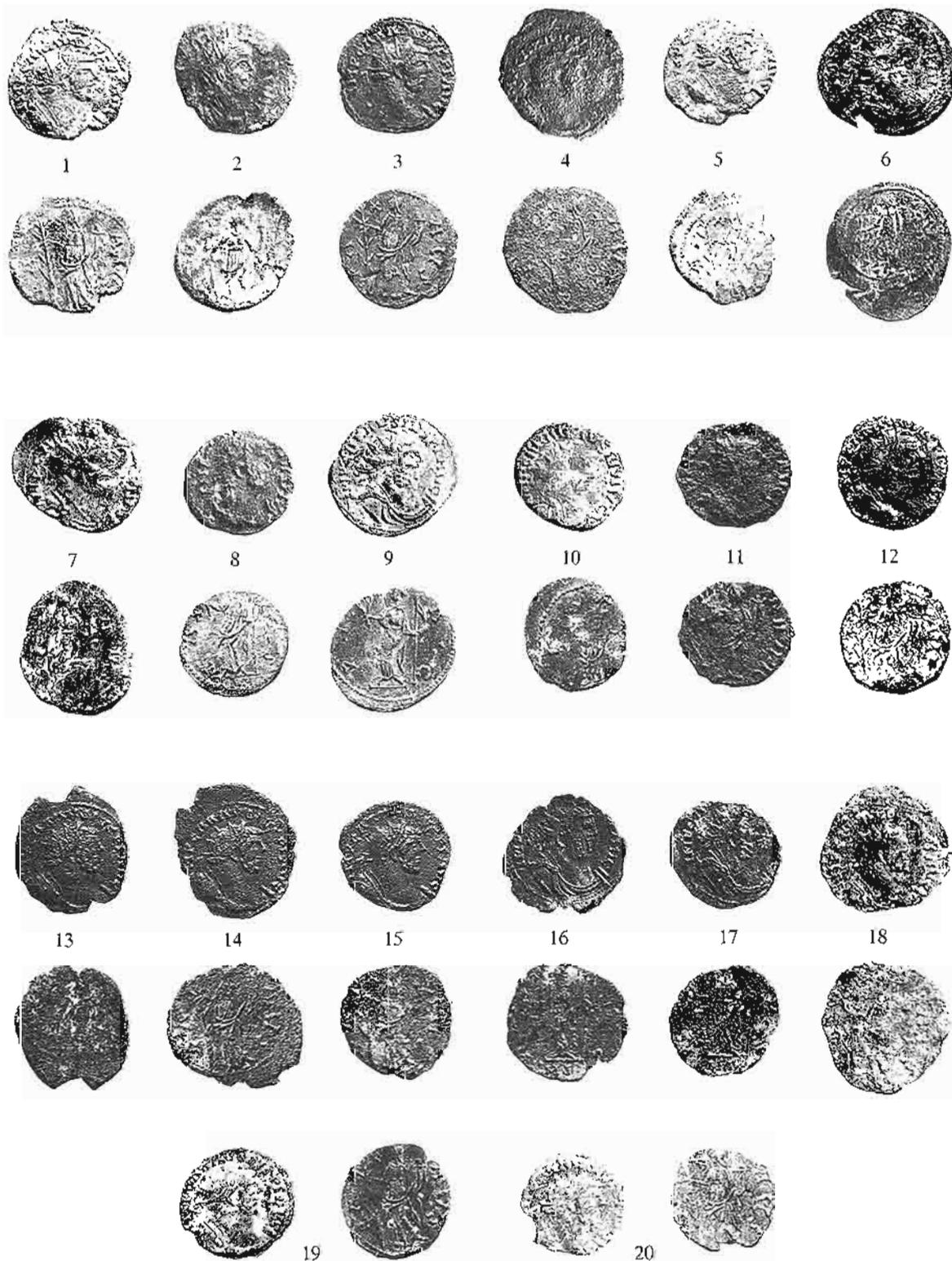
<sup>25</sup> Walker (Soho) to Boulton (Leamington), 2 September 1811.

<sup>27</sup> Mosley to Walker or Brown, 17 September 1811.

<sup>28</sup> Boulton to Lucena and de Paiva, 19 September 1811.

<sup>26</sup> Mosley to Walker or Brown, 6 September 1811.

<sup>29</sup> Mosley to Walker, 27 September 1811.



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production was spread fairly evenly over three years but, as most of them contain flash-backs and repetitions, the account is clarified if related chronologically.

Marques sailed from London on 9 September 1811, and landed at Rio on 16 October. He immediately went to call upon the Count de Linhares, prime promoter of the whole scheme but by then was ailing and becoming increasingly thwarted by a strengthening opposition. Indeed as soon as he had placed the order in England, the Count de Aguiar, one of the Prince Regent's private secretaries and Minister of Internal Affairs, had requested Lisbon to send post-haste any spare mint machinery – naturally of a type actuated by bulls, not steam. Consequently as he trailed from office to office, trying to persuade their occupants of the advantages of the British mint, Marques found it impossible to generate any enthusiasm amongst those innate conservatives who had moreover recently expended considerable sums on rehousing the old mint and treasury. Any conversion of the new building to accommodate the new machinery would necessitate such extensive and expensive reforms as to make the idea a non-starter. As hope faded, de Linhares suggested that Marques might try to locate some adequate edifice where water was readily available. He found 'a new old church, for it was never finish', which might prove adaptable, though the water supply was doubtful. In spite of its being far from ideal, he was proceeding to plan the placing of the machinery when his sole supporter, exhausted by the never-ending struggles and driven to the verge of madness by incessant frustrations, died on 26 January. Marques then had several meetings with de Aguiar who usually 'shouted at him loud and furiously that is to show in a Portuguese way respect'. Yet he persevered and, approaching an architect, received an estimate of 20,000 cruzeiros for the conversion of his unfinished church. The Court received the news coldly, manifestly reluctant to enter into such expenses – but the optimistic Marques was confident that action would be taken as soon as the machinery arrived. But another shock was in store. On 7 February, the Count de Galvino who had added de Linhares's post to his substantive one of Minister of the Marine, summoned Marques to his presence to inform him that 'the sheep his lost near Para having save all the Crew and some part of the Cargo'.<sup>30</sup> Had this information reached de Linhares before his death? – and hastened it? At any rate, it formed a tantalizing postscript to Marques' first letter from Rio which bore the date 5 February 1812 and doubtless was a late addition to it. He prudently refrained from mentioning that at that same interview he was told his pay would cease forthwith though he was still welcome to remain in the country if he so desired – a remark that reminded Marques of the papal nuncio who, on being shown what was said to be a dead saint lying on an altar and perceiving fresh blood stains on the clothing, commented 'No admirato por a grandura ma por frescura'.<sup>31</sup>

The only fresh news contained in the second letter written on 2 December in the same year was that all the machinery was said to be safe at Paraina, near Pernambuco, and was sent mainly because Marques feared that White might have been unable to get into touch with Boulton. In fact he expressed much sympathy with the millwright's having to await orders in so isolated a spot and hoped that his employer would ensure that his return passage and wages were duly paid by Lucena and de Paiva. As the machinery had been despatched from London Wharf on about 17 or 18 September 1811, it should have reached Rio near the end of October. Shipwreck – unfortunately not described – intervened, occasioning an apt comment from Gaspar Marques 'So at present we have no money but

<sup>30</sup> G.S. Marques (Rio de Janeiro) to Boulton, 5 February 1812. The only place to fulfil all the conditions mentioned, namely being on the shipping route from London to Rio, having a river nearby, being close to Pernambuco, and bearing a name approximating to Para or Paraina, seems to

be Paraiba, the district north of Pernambuco, with its chief coastal town of Joao Pessoa.

<sup>31</sup> 'It is not the pleasure it gives that fills me with wonder, but the sheer impudence of it all'.

two mints and a third in the river'. In those strange surroundings and the dank climate of Pernambuco, Thomas White must have been a man of considerable ability and resourcefulness to have succeeded in salvaging the machinery, and that most, if not all of it was rescued is proved by the detailed list he presented to Boulton on his eventual return to England.<sup>32</sup> What its actual state of conservation might have been is more doubtful; nor do we learn whether parts had at least been packed in Russian tallow like the dies and punches sent to Guanajuato in 1831, though there the results were unsatisfactory as that tallow contained salt.<sup>33</sup> Certainly when Marques was writing his final letter in September 1814, after saying that he had 'in my position now all that was safe of the Brazilian mint. . . ' he added that he had 'found all things most spoil. Special all what has been filed, sum is wanted and sum is broke'. But by that time more years of neglect had passed and Marques further commented that 'I believe everything could be placed in repair if in this good Country they knew what was mor of thir advantag respecting Machinery'. One suspects that the condition at the end of 1811 was not all that bad.

The major fresh topic broached in Marques' third letter dated 15 February 1813 related to White's apparently unheralded arrival in Rio three weeks earlier with the salvaged English mint. The immediate reaction of the Brazilian authorities was anger – anger at the Mint's appearing so inopportunistly and most particularly anger at the Governor of 'Paraiña' for having sent it on without orders. And briefly in this and more extensively in his next letter written only three days later Marques reveals that the basic reason for the Government's embarrassment was that it had already made claims upon the insurance company and received 70 per cent of the initial cost. The transaction must have been carried out with remarkable speed by both parties – and, of course the loss had been represented as total. The writer was at no pains to conceal a certain amount of pleasure at the government's impending discomfiture and at the fact that soon there would be 'much Law Work before this affair is done with'. Incidentally the fourth letter followed so closely upon the third and covered similar ground because Marques had heard that the 'last Packet' carrying that missive had been 'taken by the Americans', during the war of 1811–14. Thomas White's imminent return also triggered off Marques' feeling of nostalgia for Britain and he commented, as he had several times before, on his own hopes of returning there as he had never felt really well since his arrival in Brazil two years earlier. The climate did not agree with him.

We never do learn whether Gaspar Marques returned to England – nor how he continued to live in Brazil if his salary did cease in February 1812. Perhaps he worked as an engineer or as a consultant. Certainly he asked Boulton several times for an estimate for a 6 h.p. steam engine which a friend desired to drive a sugar factory – finally receiving it with Boulton's sole extant letter of 20 July 1813, when he also learnt of White's safe arrival in England after some 26 months of absence. He must also have been pleased to discover that Lucena and de Paiva had paid White's dues without demur. Whether the engine was purchased is not recorded; nor do we find out Boulton's reaction to the payment plan proposed, namely half the cost on delivery in London and the remainder in five instalments, security being provided by de Paiva and Co. Those items apart, it is remarkable how few ends are left untied. Marques even mentioned a 'Model of a new Mint they intended to mak in this Country insteed the one from England', but which he avoided seeing through a perhaps feigned 'feverish indisposition'. Then too we learn the actual book cost of the mint, extracted from the ledgers in December 1813. It amounted to £5,030–4–3<sup>3</sup>/<sub>4</sub> and though the apparent profit of £3,519–15–8<sup>1</sup>/<sub>4</sub> seems large, it is to be noted that no

<sup>32</sup> Item No. 57, 17 July 1813, endorsed 'Thos. White's List of the Mint and Steam Engine Machinery saved from the wreck of the Vessel which conveyed it to the Coast of

Brazil'. N.B. to be returned to him when asked for'.

<sup>33</sup> Doty, 'A mint for Mexico. . .', p. 136.

provision was made for other than direct costs. There was, for instance, no attribution of a proportion of managerial expenses, no depreciation of machinery or buildings, no rent, rates nor transport from Birmingham to Wapping, such as would reduce this sum appreciably in modern day accounting.

To what causes should we attribute the failure of the project? First and most basic is that so cogently expressed by Dr Doty in his concluding paragraph on the Guanajuato mint – ‘We see the workings of an advanced technology exported to a backward region’.<sup>34</sup> Brazil similarly was quite unprepared mentally or socially for the steam engine stage of technical development which provoked unrest, distress and social tensions even in the country where it originated. Secondly the Court of Dom Joao was a hotbed of antipathies emanating from men struggling for power. Thirdly – and the more regrettable since it came disguised as a benefit to Brazil – was the insurers’ precipitate payment of 70 per cent of the alleged loss which unintentionally ensured that all implicated should strive to make the ‘loss’ appear genuine. Finally and most decisively, the whole enterprise was dogged by bad luck. From the miscounting of the boxes at the London Wharf in September 1811 and the ensuing difficulties with Messrs Lucena and de Paiva, through the shipwreck in Pernambuco, right up to the untimely death of the mint’s major and ultimately sole protagonist, the Count de Linhares, on 26 January 1812, it seemed that fate was dealing blow after blow. One can but admire the fortitude and perseverance of a firm that continued its working schedule and its acceptance of overseas orders in spite of all adversities, human and natural.

<sup>34</sup> Doty, p. 145.