#### Other Mints in Bengal, Bihār & Orissa. Also Tripura & Garhwal

#### Summary

The mints, other than Calcutta that initially operated in the Bengal Presidency, were Murshīdābād, Patna and Dakka. There was a mint at Monghyr, but further research has led to the conclusion that it was closed before the British acquired control. A copper pattern was prepared at Cuttack and sent to Calcutta, but never issued as currency.

The mint at Murshīdābād issued gold and silver hammered coins that are indistinguishable from those issued from the Calcutta mint, and they are catalogued in an earlier section. Arkot rupees were also issued. This mint was closed in 1777, and re-opened in 1792 to issue the new milled coinage. It was finally closed in June 1795.

Patna and Dakka each issued gold and silver hammered coins with their own mint names ('Azimābād and Jahāngīrnagar respectively). However, in 1770/71 they were instructed to issue coins that were identical to those of Calcutta and Murshīdābād, which they did for a limited time until they were closed, in about 1773/74.

Dakka was briefly re-opened in 1782, but the death of the mint master there, meant that only a few specimen coins were produced, and the mint never went into full production. These coins have not been identified but probably had the mint name Jahāngīrnagar.

Like Murshīdābād, Patna and Dakka were re-opened in 1792, to help with the milled coinage and they both closed at about the end of 1795.

The milled coins contain secret marks to indicate the mint of origin, so that any problems with weight or fineness could be traced back to their source. Pridmore proposed an attribution of these secret marks to the different mints, but further research, presented in this section, indicates that these attributions were wrong.

Tripura and Garhwal were occupied by the British in 1761 and 1815 respectively and a small number of coins were issued from these places whilst under British control.

# **Detailed Discussion**

#### Introduction

In preceding sections the coinage of the Calcutta mint up to c1800 has been discussed and catalogued, and references have been made to the other mints in the Bengal Presidency. This section will discuss the operation of these other mints in more detail, both the hammered and milled coinages. The mints covered are Murshīdābād (where not covered in earlier sections), Patna, Dakka, Monghyr and Cuttack. In addition, coins were produced by the British in Tripura and Garhwal and these are also discussed in the present section.

# 1765 (AH 1179/80) British acquisition of Murshīdābād, Patna & Dakka

As has been previously mentioned, the British acquired nominal control of all of the mints of Bengal, Bihār and Orissa in 1765. The additional mints were Murshīdābād, Patna and Dakka.





Rupee of Patna mint. Mint name at top (5.15)

Rupee of Dakka mint (5.40)

Early style

The coins of Murshīdābād were identical to those of Calcutta, and these have been discussed in an earlier section. Dakka and Patna continued to strike coins showing their own mint names of Jahāngīrnagar and 'Azimābād respectively. Very few coins appear to have been struck at Dakka and these coins are rare. The silver coins of Patna, though scarce, are more readily available and appear to have been struck in larger numbers. The coins from each of the mints also have distinctive mint marks, the trisūl for Patna and a spiky star for Dakka

# 1769 (AH 1183/84) – European Superintendence of Murshīdābād

Although the British had acquired control of all the mints of the Presidency in 1765, Murshīdābād, Patna and Dakka continued to be controlled by the Nawāb and his officials until the end of 1769.

In January 1770, Mr Irwin was sent to Murshīdābād to superintend the mint 1 and from that time forwards, all of the mints were increasingly controlled from Calcutta.

1770 (AH 1184/85) – New Style of coin produced at Patna & Dakka

Rupee of Patna mint. Mint name at bottom (5.28)

Rupee of Dakka mint (5.50)

Intermediate style

In 1770 discussions were underway about standardising the silver coins from the four mints so that the shroffs could not charge *batta* when exchanging them (see section 2). Both Patna and Dakka seem to have made a change in the design of their coins so that they resembled more closely the coins of Murshīdābād and Calcutta. Both mints removed the distinctive mint marks and replaced them with marks similar to the sun/moon and flower of the Murshīdābād/Calcutta coins, but initially they kept their own mint names on the coins, although, on the Patna coins, the mint name, 'Azimābād, was moved from the top of the reverse to the bottom. These coins with the intermediate style show RYs 10 & 11 and are extremely rare. They were presumably issued only for a short time. It was probably later in RY 11 that Dakka and Patna moved to producing silver coins that were true copies of the Murshīdābād and Calcutta coins.



Half a sun and a moon on RY 10 rupee of Dakka

### Arkot Rupees Struck at Murshīdābād

Evidence for Arkot rupees being struck at Murshīdābād comes from letters between the Supravisor (sic) of the Company's possessions at Dakka and the Resident at Murshīdābād in 1770 2. The Supravisor at Dakka requested that dies for the Arkot rupees should be sent from Murshīdābād. This request was refused with the comment that the Government was anxious to reduce the number of different coins in circulation, and that Murshīdābād only struck Arkot rupees occasionally for use at Chittagong (see Cat. No. 2.196).

# 1771 (AH 1185/86) - 11 and 12 Sun Sicca Rupees

In section 2, the scheme to issue identical coins from all four mints has been discussed and a possible secret marking system also has been discussed. All the coins are recorded in that part of the catalogue.

# 1771 (AH 1185/86) – Paying the Troops at Patna

The decision to try to prevent the decrease in the value of the RY 11 coins, following the production of the RY 12 coins, had some negative consequences, most notably on the pay of the Company's soldiers. In September 1771, a problem arose with paying the troops at Patna 3:

By the new regulations which you have been pleased to establish, sonaut rupees, we apprehend, will no longer be procurable for the payment of the brigades stationed in this province, we at present issue <sup>3</sup>/<sub>4</sub> sonauts & <sup>1</sup>/<sub>4</sub> siccas and the siccas are valued at 15 per cent better than current, agreeably to a regulation established during Lord Clive's administration but of late their value in the bazaar has only been from 2 to 3 per cent better than sonauts, and the Moorshedabad siccas have been one per cent worse than the Patna siccas, notwithstanding we have done all in our power to make them pass at an equal rate, and in other parts of the province the difference is still greater.

The troops in consequence have not failed to express some discontent at being paid even a ¼ in siccas and of course they will be much more dissatisfied now that siccas must be paid them in a much larger proportion.

We beg leave to enclose for your observation a copy of a correspondence which we had on the subject with Colonel Grant and we request to be favoured with your commands on what terms the troops should be paid in future.

Calcutta quickly replied and were particularly concerned that the troops could tell the difference between the Patna and Murshīdābād coins 4:

We have received your letters of the 6<sup>th</sup> & 7<sup>th</sup> instant and are greatly concerned at the inconveniences which lieutenant Col Grant represents to be experienced by the troops at Monghir on account of the Muxadavad siccas advanced to them in part of their monthly pay.

Tho' our resolution is fixed for carrying into execution the new regulations concerning the coinage and we expect every endeavour on your part to enforce them within your department, we shall consider at the same time on some measures to prevent the army being sufferers, and in the meantime we desire that you will issue as many sonauts as you possibly can.

It appears suprizing to us that the troops at Monghyr or indeed that anyone should be able to distinguish the Patna siccas from those of Muxadavad after our positive orders have been issued that all siccas coined at the different mints of Muxadavad, Patna, Calcutta and Dakka should be of the same fineness and stamp and that they should have no distinguishing mark whatever. We desire that you will make an enquiry into this matter and inform us of the result.

The reason for the difference between the two rupees was eventually identified 5:

We have been favoured with your letter of 16<sup>th</sup> September and shall pay strict obedience to your commands.

We are informed that in the mint at Moorshedabad the rupees are stamped immediately upon cooling, whereas here they are rubbed over with lime juice or some other acid and put a second time in the fire, before they are stamp't and that this makes a difference in the colour. If you approve it, we might cause the same mode to be observed here as we are told is done at the city, but we believe in spite of every precaution which can be taken, the shroffs will still continue to distinguish the coinage of the different mints. We beg leave to enclose for your observation four Moorshedabad and four Patna eleven sun siccas, in the colour of which it is true that a difference is perceptible

Ordered that the rupees be sent to the Mint Master with the directions to assay them and report the results to the Board.

The above extract confirms that Murshīdābād and Patna were striking identical rupees at some point in RY 11. In the same letter the Board replied to Patna:

We have received your letter of the 8<sup>th</sup> instant, enclosing musters of siccas from the Muxadabad and Patna mints in which a difference of colour is very perceptible, and to put a stop to a distinction which tends to the obstruction of our design of having nothing in the appearance of the rupees coined in the several mints by which they could be distinguished from each other, we desire that particular care may be taken in future that the same method of coining may be used at the Patna mint as in that of Moorshedabad.

However, the assays revealed that there were further differences between the samples of rupees sent from Patna and Murshīdābād 6:

...We herewith send you the reports of the Mint Master's assay of 4 Patna and 4 Moorshedabad sicca rupees which were sent down to us from Patna.

By these reports you will perceive that the Moorshedabad sicca is deficient both in weight and fineness and on the contrary that the Patna sicca is of the exact weight, but of a fineness rather above the standard.

As such a deviation from the standard and consequently such a difference in the rupees coined at the two mints must obstruct most essentially the success of our plan, and will be productive of many inconveniences besides reflecting on the credit of Government, we must particularly desire that you will investigate the causes of it and be careful that the siccas be in future kept up to the standard to their weight and fineness, and we desire that you will be regular in sending us monthly a rupee taken indiscriminately out of those in the mint that the same may be assayed and reported to us.

The authorities at Murshīdābād disagreed with the findings 7:

On receipt of your commands of the 29<sup>th</sup> ultimo we ordered an immediate and strict investigation into the causes of the defects alleged to exist in the Moorshedabad coinage. Reports have in consequence this day been laid before us by the Naib Duan and the assistant superintending the mint. From these (of which we transmit copies for your further information) it would appear that such allegations are without just ground and that the Moorshedabad rupee of the 12<sup>th</sup> sun is in fact both in weight and fineness rather superior to sicca standard. We shall be particularly careful in giving injunctions for their being at all times kept up to the standard in both respects and we shall regularly transmit you a rupee every month taken indiscriminately from those in our mint to be assayed and reported at the Presidency. A rupee is now forwarded to you for this purpose.

Ordered copy of the report of assay be sent to the Mint Master with the rupee for assaying and that he be directed to make his report to this Board.

London was informed of the problem with the Murshīdābād/Patna coins in November 1771 8:

To enforce and support these regulations which we have made in regard to the coinage has been our constant endeavour and care. We were therefore surprised on being informed from Patna that the Moorshedabad siccas were considered and passed in payment in the bazaars at an inferior value to the Patna siccas, and that the troops were much dissatisfied at receiving them in payment as they sustained a loss on them of 3 or 4 per cent.

As our regulations had forbidden any distinction in the stamp and the mark, or difference in the weight or fineness of any of the siccas, we were at a loss to find out the method by which they distinguished the Patna ones from those of Moorshedabad and directed that 4 of each sort should be sent us from Patna. On the receipt of them we plainly saw a difference in the colour of the silver, which the letter accompanying explained to arise from a different method in the coinage, and by the report of our mint master there was found some

difference in the fineness. Those of Patna being somewhat above and the Moorshedabad ones being a little below standard

Our immediate orders for having the same method of coining pursued in both mints and injunctions for having the standard and fineness strictly adhered to will, we hope, prevent in future such distinctions in their current value, and remove those obstructions which have been thrown in the way of the new regulations by the shroffs, whose chief support and maintenance have been the batta and exchange of rupees.

The problem of paying the soldiers was discussed further by General Barker in November 1771 9:

I have perused your favour of the 16th September respecting the new regulations for establishing a fixed currency throughout the provinces, and the abolition of the custom of the fall in the value of the sicca rupees of the preceding year. I conceive that if these regulations & the currency of the new siccas are well established in the revenues. & supported with rigour by the Councils of that department, there can be no hesitation in the exchange in the military bazaars. & consequently no loss to the soldier, for by the information I have obtained. the cause of the complaints of the losses on the exchange of the sicca rupee, arises from their not passing current at the same batta in the provinces as they are issued by the paymaster. The shopkeepers cannot pass them in the country but at a considerable discount, & consequently refuse to receive them but at the same value. If the new siccas are made to pass current in the provinces for the value they are received at, they will of course pass so in the military bazaars. I presume it will be necessary to abolish the currency of the sonaut rupee, otherwise individuals will judge of the value of the sicca by a comparison with the sonaut, & the sonaut must rise nearly equal to the sicca as they grow scarce, the intrinsick value being the same. There appears to be one effectual way of accomplishing this, which is by receiving in the revenues those rupees for something less than their currency.

As at present a general order exists that the troops are to be paid in sonaut rupees, it will be necessary that another order be issued by the Honble President & Council, for paying the army in siccas only, with such a batta that there may be no increase or decrease of the soldiers pay, according to their present allowance. The commanding officer of the brigades will then regulate the currency in their bazaars & the soldier will exchange his rupee for the same he receives it.

I must further beg leave to observe that it will depend entirely on the Councils of Revenues & supervisors of districts to enforce these regulations, for it is of no signification what specie the army is paid in provided the troops can exchange their money for the value they receive it, the usual allowance to the shroffs excepted.

By the middle of 1772, the Patna mint was at a standstill and there were still problems with paying the troops 10:

We have not sent you a muster of rupees as the expense of coining being more than the differences of batta between siccas and sonauts the mint is in consequence shut. In our address of the 7<sup>th</sup> of September we represented the difficulty we apprehended we should meet with in procuring sonaut rupees for the payment of the brigades stationed in this province, & the inconvenience of paying them in siccas on account of the discontent arising from the loss of batta and requested to be favoured with your commands on what terms the troops should be paid in future. We now find it difficult to procure a sufficiency of sonauts & the batta is still lower than ever being as follows

5	
Patna 12 sun siccas	114 per cent better than sonauts
Patna 11 sun siccas	14 ditto

atna	11	sun siccas	14	1 di
aliia	11	sun siccas	14	t un

Moorshedabad 12 sun siccas 1..12 ditto

Moorshedabad 11 sun siccas 1..10 ditto

This is the present difference in our bazaars though they are all received into and paid from our treasury on equal terms. Were only siccas received into our treasury & the payments to the army made entirely in that specie at such a rate as you might think proper to fix, so that the currency of sonauts might be entirely abolished, the above mentioned inconvenience would be entirely removed. We must beg leave to observe that the Company suffer a considerable loss by the lowness of the batta. About 2,000,000 rupees of our revenue are paid in siccas and these used to produce about 2,060,000 sonauts whereas they now only produce 2,030,000.

The problem was finally resolved by paying the troops in siccas:

Resolved that the troops in future be paid in sicca rupees & ordered that a new account be drawn out of the pay and batta of the troops in sicca rupees instead of sonaut estimating the sonaut rupee at 11 per cent better than current and the sicca at sixteen.

# 1772 (AH 1186/87) – Low Output of the Murshīdābād Mint

In March 1772 Murshīdābād forwarded a letter from Mr Irwin, the superintendent of the Murshīdābād mint, to Calcutta to explain why the amount of silver coin being produced in the mint was so low. It seems that only relatively small amounts of silver were taken to the mint for coining, except that taken there by the Dutch 11:

I think it incumbent on me to endeavour to assign to you the reasons of the great decrease which will appear in the duties of the mint this year, and why they have fallen so far short of the estimation put on them at the last Pooneah. When the settlement for the year was on foot, I mentioned to some of the gentlemen of your Board, that the mint was much overrated, and that it was never to be expected that the collections in that department would again amount to above one third of either of the two preceding years as the reasons for the great increase in those times would, it was hoped, never occur again, namely the distresses of the people of all stations in the very severe famine, which induced them to dispose of all their plate and ornaments. This is the only kind of bullion that comes to this mint (excepting what is brought by the Dutch Company) and before the two preceding years just mentioned seldom exceed one lack of sicca weight, but was generally far short of that. The duties of 2½ per cent (exclusive of the charges on the silver brought by the Dutch) composed the principal, indeed nearly all that was collected. They have this year very little exceeded the half of their former coinage, and these are the reasons why this year's duties will not amount to what it did three years ago.

Mr Irwin went on to suggest that the shroffs could be encouraged to take more silver bullion to the mint if the charges for coining were reduced:

The immense duty exacted on all other silver is an obstacle and a great discouragement to its being brought into the mint, and as the secret means of increasing the currency of the country (and I take it the chief end of a mint is for that purpose) is by encouraging the coinage, I would recommend a remission of one half from the present duty in order to induce the shroffs to collect and send in all the bullion they can. The Government at present draw 5 per cent on it clear of the charges of coinage. If it should be reduced to 2½ per cent I am pretty certain a greater coinage would ensue, and tho' no immediate profit to Government by an increase of duties, yet great advantages would arise to the country from the increase of the currency.

# 1773 (AH 1187/88) – Report on Gold Coinage at Patna & Murshīdābād

Very little information about the early gold coinages of the Murshīdābād, Patna and Dakka mints has been found in the records of the EIC held in the British Library. Indeed, no gold coins of Dakka are known for this period. The number of gold coins minted at Patna and Murshīdābād for some of the later years was reported in 1773 12:

Account of Gold mohurs coined in the Patna mint from the 1<sup>st</sup> of the 10<sup>th</sup> sun to the end of the 12<sup>th</sup> sun

18,149-13
4,817
2,048
25,014-13

NB There were several smaller denominations struck & these are included in the above amount.

In pursuance of your orders contained in your letter of 22<sup>nd</sup> November, I have the pleasure to enclose you an account of the number of gold mohurs which were coined in the Moorshedabad mint of the 10<sup>th</sup> 11<sup>th</sup> & 12<sup>th</sup> suns

10th sun73,928-6-13-311th sun60,311-6-9-1

12<sup>th</sup> sun struck to the end of Ranzaun of the present 15 sun of Shah Allum on 15 December 1773 37,647-1-12-3

Total 171,886-14-15-3

The production of gold coins at Patna was halted in 1773 13:

On a report made to us by the Mint and Assay Master of the business of the gold currency coined at Patna which although pretty exact in weight turned out in assay only 22 carrats 2 grains fine instead of 23 carrats 3<sup>3</sup>/<sub>4</sub> grains which was the fixed standard, we resolved, as no payments on account of the revenues were made in the gold specie, to forbid their coining any more except a few at the commencement of each year for the usual nussars to the King etc., at the same time directed them to enquire after the offenders and if possible to discover them that they might be severely punished.

# 1773/74 (AH 1187/89) – Closure of the Patna and Dakka Mints

The extract above shows that the Patna mint was still operating in March 1773 and apparently no plan was in place to close that mint because the mint was to issue nazaranas at the beginning of each year. However, both Patna and Dakka must have been closed soon after this because no further mention is made of these mints in the records until 1775, when there was a big debate about re-opening them.

# 1774 (AH 1188/89) – New Mint Master at Murshīdābād

Changes to the personnel at Murshīdābād took place in August 1774, when Mr Edward Fenwick resigned as mint master and Mr Christopher Keating was appointed in his place 14, but the Resident was not sure of his role in this 15:

As I observe you have been pleased to appoint Mr Keating to the office of Mint Master at the City under my control as Resident at the Durbar, I beg leave to observe that I am somewhat at a loss to know how far my authority is to extend and shall be glad to have the nature of this appointment defined, both for the satisfaction of the Mint Master and myself.

And the authorities at Calcutta had to clarify it all:

The superintendent of the mint at Moorshedabd in the execution of the business of his office and in rendering his accounts is to act under your orders and control in the same manner as Mr Irwin did under Mr Becher, the

former Resident of the Durbar when that appointment originally took place and afterwards under the Chief and Council of Revenue at Moorshedabad.

# 1775 (AH 1189/90) – 15 sun sicca struck at Murshīdābād

By November 1775, Murshīdābād had not received any instructions to start coining the rupees marked with the 15<sup>th</sup> sun, and this was causing some problems 16:

Permit me to lay before you that the business of my office is much impeded on acct the Dutch superintendent and black merchants will not have any more money coined of the twelve sun sicca but want a new coinage of fifteen suns, they having heard that money has been struck of that stamp at the Presidency. I have therefore to request your orders for coining of fifteen suns. I have the honor to enclose a half gold mohur & two sicca rupees struck the last month for your inspection and flatter myself, with care, shall make my office turn out to more advantage to the Honble Company than it has hitherto done.

Permission was given to strike the 15 sun sicca at Murshīdābād.

### 1775 (AH 1189/90) - Consideration of the re-establishment of Patna & Dakka Mints

Although the Patna and Dakka mints had been closed, there was much debate about whether or not this was the right thing to do. In May 1775, Patna sent a letter explaining problems and asking that the mint should be re-opened 17:

... we would recommend the reestablishment of the mint. The good attending it we imagine would be the establishing of one coin by the bringing in of the many spurious rupees at present in circulation, whereby the inhabitants are subjected to whatever imposition of batta the shroffs choose to fix for their own emoluments, and the encrease of the currency by the coining of silver ornaments. All money melted down for the manufacture of plate etc being at present so much lost to the circulation, the proprietors however desirous of recoining it, not having it in their power from the distance of a mint. We do not perceive any ill consequences necessarily resulting from the coinage. Care should be taken that the standard weight and fineness be observed and that the mint might not be burdensome to Government. The expense should be defrayed by those who send bullion to be coined which the merchant would very readily comply with.

Should you think proper to re-establish the mint here, the view of reducing the several kinds of rupees to one, would be better promoted by excluding the Benaras rupee from the Treasury and receiving only siccas and sonauts as before.

	146	
Be	etter than sonnats	
	Sicca of the 11 & 12 year	6 to 7 per cent
	Sunnauts of the 5 <sup>th</sup> Year of Shaw Allum	2 annas per cent
	Sunnauts of the 9 <sup>th</sup> Year of Shaw Allum	12 ditto
	Sonnats of Muhomed Shaw	
	Sonnauts of the 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> , 6 <sup>th</sup> & 10 <sup>th</sup> Year	
	of Shaw Allum	

Table of Rupees

Worse than Sonnats

Benaras	13 per cent
Allahabad	12
Lucknow	12
Fyzabad	12
Korah	20
Wuzzery	20
Farrukhabad	12
Allawa	20

This recommendation was considered in Calcutta and the views of the different provincial Councils (ie Murshīdābād, Patna and Dakka) were sought:

The Board being unwilling to determine too precipitately on a subject of such importance and extent as the reestablishment of the mints, propose the following questions for their separate considerations

1. whether it is most expedient to re-establish the mints of Patna and Dakka or to allow only one mint to be established in Calcutta for the coinage of the two provinces.

2. Whether supposing the ancient mints to be re-established all the rupees shall be struck as has hitherto been the practice with the name of Moorshedabad only or the rupees of each mint shall bear the name of the place to which it belongs.

Agreed that these questions be sent in circulation to the different provincial councils

The subject was considered in a letter from the mint master in June 1775. He drew together the different views and presented them to the Calcutta Board. Firstly, the views of Murshīdābād, the mint of which had not then been closed 18:

...the mints at Patna, Dakka and Moorshedabad are useful in facilitating the coinage of any sums of bullion that the inhabitants of the respective districts may have to coin, and saves them the risk, expense and delay which would attend sending their bullion or money to Calcutta. Whilst the convenience of coinage was near, it might perhaps induce people to recoin other species of rupees or bullion, which they would not do when the risk and expence were so much increased by the distance of the mint.

Patna is in a manner a distinct province from Bengal, and its peculiar situation makes this reason for establishing the mint there of more force than at the two others, but there is on the other hand a peculiar circumstance attending the mint at Moorshedabad which seems as forcible as this, of which however, you gentlemen are the only judges. We mean the priviledges the Dutch have by their Firmaun of coining money here, which would be abrogated by the abolition of the mint. If the mints are re-established at those places, the shroffs will not fail to levy a batta on the Dakka and Patna mints. This they always did, and what is remarkable, it is hardly possible to elude their knowledge of what mint the coin is stamped at. If the mints are re-established we imagine it would be best to have all the rupees struck with one mark only, to prevent as much as possible this arbitrary charge of batta. The objection to this is that if the coin be debased it would be difficult to detect at what mint it was debased. This again in some measure might be obviated by having one sett of servants under one head person, these servants to be distributed to each mint and this head person to be answerable for all deficiency in weight or fineness of the standard.

The batta on rupees is a tax on the merchants, the farmer & the ryott, which becomes the profit of the shroffs. Any circumstance serves them as a plea for levying it and therefore if the coin could be reduced to that simple mode which would remove every distinction, whether of specie or standard, we think the country in the end would be benefitted. The shroffs will oppose every attempt of the kind, and they are the most moneyed men in the kingdom. Of course, they would for a while have it in their power to affect both the revenue & trade, and if they were to remove out of the kingdom, they would take a great deal of specie with them. How far this is an object to be put in competition with the other we cannot pretend to say

The Council at Patna considered that since local people preferred their own local money, the mints at Patna and Dakka should be re-opened and coins should be issued with their own mint names ('Azimābād and Jahāngīrnagar):

....We have already represented to you in our letter dated 27<sup>th</sup> March the expediency of re-establishing a mint at this place and we apprehend the same reasons will hold good with respect to Dakka. You will therefore permit us to repeat. We are still clearly of opinion that the advantage of the Company, the convenience of the inhabitants and the good of the country in general all combine to render such a measure absolutely necessary. The difficulties the renters labour under in procuring sicca or good sonaut rupees to make their payments in, and the losses and inconveniences that result therefrom, we have before taken notice of, and the impracticability of sending bullion & rupees of a different specie to Calcutta to be re-issued is too obvious to need mentioning. The abolition of the mint has had such an effect on the price of both gold & silver bullion at this place, that it is now 4 or 5 per cent cheaper than before was ever known. The renters are now unable to procure rupees of standard value and must of necessity offer such money as comes to their hands and as it will be impossible to affix any precise batta to the various species of rupees in the currency of the province, continual opportunities will arise to the shroffs for imposing upon us as well as upon the ignorance of the natives, and diffidence and distrust universally take place. If it is alleged that the siccas coined at Calcutta must eventually pass through all the provinces, we will admit the position, but at the same time we must observe that the inhabitants of different districts have an aversion to any coins that do not bear the stamp of their own capital, and this is evinced by the batta which is taken on the rupees of Calcutta and Moorshedabad, tho' superior to those of Patna in weight & fineness. Besides it is scarce possible to coin the rupees in the different mints so alike as not to be discovered. As you have therefore granted us the liberty of offering our opinions in this measure, we humbly beg leave to recommend the re-establishment of the mints of Patna & Dakka in preference to that of a single one at Calcutta, and that the rupees coined at each place shall be of one value in respect to weight & fineness and bear the name of the place where they are stamped without being liable to any deduction in point of batta in succeeding years, which though it may seem but reasonable when the money shall have been worn down so as to have lost greatly of its original weight, or have suffered by clipping or other arts practiced in this country in the same manner as in Europe, may be obviated by its being called in and undergoing a recoinage when the loss attending it will not be considerable & must principally affect the monied men.

The council at Dakka provided an even longer response, discussing the pros and cons, and recommending the re-establishment of the mint:

In considering the subject of the questions you are pleased to propose to us in your letter of the 4<sup>th</sup> instant concerning the coinage, we judged it would prove most perspicuous to bring together into one point of view all the arguments which occurred to us, either for or against the re-establishment of a mint in this province. They are principally the result of local information, and we shall be happy if they may be found in any way serviceable to you in the general regulations you propose hereafter to adopt...

...To your second question, we reply that the rupees coined at Dakka were formerly struck with the name of the place but latterly with that of Moorshedabad. As to the future, in case the mint should be re-established here, it is our opinion that the rupees should all be of the same standard and weight but that they should bear the name of the place where they are coined, that the stamp likewise should be minutely the same except only the name of the place which is now specified in the lowest partition of the side which exhibits the year of the reign. We see no reason for preferring a distinction of the coin of each mint rather than having them all to bear the same name, but that we apprehend the former mode will render it more hazardous to attempt frauds and adulterations at either mint, and if there should be any they will be probably less difficult to trace and investigate...

The Dakka council presented the reasons against the re-establishment of the Dakka mint. Firstly they discussed the fact that the Arkot rupee was the main coin of daily use in the surrounding areas:

If a mint at Dakka should strike none but sicca rupees, it would prove favourable to zemindars etc by preventing an exhorbitant batta from being charged upon their payments in that coin during the two months of heavy collections. Sicca rupees are wanted for no other purpose. Arcot rupees are advanced to the weavers for the investment of this district and that of Luckypore, and to the molunghees for salt. In short this is the chief currency of the province except in the town of Dakka. The French formerly imported their own Arcot rupees which pass everywhere current, but principally about Gualparah, Chilmarry etc, & merchants, when the trade of the district flourishes, send Arcot rupees from the Presidency. The sicca rupees formerly coined here were sent principally to Moorshedabad as revenue, and the English provided their investment with Arcot rupees transmitted from Calcutta. Since therefore no sicca rupees can arrive from the mofussil, it would be an injury to have all the Arcot rupees which are brought hither for the publick revenue, recoined into siccas, a species which is not current, & in all probability such a scarcity of Arcot rupees would result from that practice as would proportionally raise their value in exchange, as much as the value of siccas is raised now, during the heavy collections, above that of the species generally current in circulation. In support of this argument we may observe that whilst the mint subsisted here, the sicca rupee frequently fell to only 4 & 5 percent upon Arcot, and in the year 1770 it even fell so low as one percent. Perhaps in a future year if the mint should not be reestablished at Dakka, it might prevent siccas from running to an exorbitant price if the renters were to have permission during the urgent season of payments, to pay half in siccas and half in good Arcots, or some other temporary regulations of Government might be adopted with good effect.

If the circulating quantity of Arcot rupees should be diminished, without conciliating the minds of the people to the currency of Sa rupees, we conclude that the former, being difficult to procure would bear a high batta. The Company, taking Sa rupees from the revenue treasury must buy up Arcot rupees to advance to the weavers & salt manufacturers to the amount of at least 20 Lacks of rupees, and the loss would fall upon the Company. The loss now arising from a high batta upon sicca rupees at one particular season of the year does not fall upon the Company but upon the zemindars & ryotts.

So far we agree upon a supposition that it is the object of Government to introduce the sicca into general currency and would only allow that species to be coined at Dakka, but such is the influence of prejudice and custom over the minds of men in general, and particularly with the men of this country and so prevalent has the skill of chicanery of money jobbers hitherto proved for defeating publick regulations in the coinage, that the practicability of such a scheme appears very uncertain upon the subject. It may not be unworthy of remark that the introduction of a higher denomination of money in any other country tends to raise the price of wages and commodities.

They went on to discuss the possibility of opening a mint specially for the production of Arcot rupees:

As to a mint for the coinage of Arcot rupees, we think there is great room to doubt whether any considerable benefit would result from such an institution, because if the trade of this province is good and prosperous there will be an annual importation of Arcot rupees for the purchase of cloths, beetlenut & grain to the amount of many lacks of rupees and because the distribution of the current species from wear and clipping cannot be considerable as to keep a mint in continual employ.

As usual, they referred to the malign influence of the shroffs:

Moreover it may [be] doubted whether the expense upon [burning] and recoining old silver would not prove greater to the proprietor, than the loss arising from the valuation of the bankers at which it might be passed in circulation provided the trade of money is unrestrained, & individuals are not compelled to submit to the valuation of any single banker. We heartily wish any plan of measures could be formed effectually to destroy the combinations & pernicious arts of these men, which has at all times been a subject of complaint. Hitherto our Government has certainly failed in this important [...]. For in a country where there is such a great variety of coins in currency, where particular denominations of money are appropriated to particular articles of merchantdizes, where purity of the standard coin renders it more liable to loss from friction, where there is no check upon clipping, like the milling of the English and many other European coins, and where all the authority of Government has proved insufficient to impose a price upon its coinages beyond the intrinsic value of the metal. The interests of society seem to [be] under the employment of bankers and money changers necessarily, and it appears difficult if not impossible to prevent deceitful and fraudulent practices. The establishment of a mint appears indeed the most likely expedient, but the influence of a mint in putting a just valuation upon debased money can hardly extend beyond the town where it is established.

Finally in their arguments against re-opening the Dakka mint, they drew attention to the fact that a multiplicity of mints increased the chances of differences arising between the coins from the different mints, and increased the opportunities for the shroffs to charge *batta*:

A multiplication of mints increases the hazard of variation from the established standard, and makes it more difficult to trace frauds in the coinage. From some cause or other it has generally happened that rupees coined at different mints, although declared to be of equal standard have been subjected to a batta upon their currency when transported from one place to the other respectively. This we suppose to have arisen in some cases from a real difference in the standard but more frequently from the artifice & collusions of the shroffs.

The arguments in favour of re-establishing the Dakka mint included the fact that it could alleviate the local shortage of sicca rupees:

The re-establishment of a mint at Dakka would produce the good effect that as the revenues are paid by the principal farmers in sicca rupees and no other species, the operation of a mint might prevent the inferior tenants and ryotts from being injured by the chicanery of bankers and those through whose hands the money is conveyed to the publick treasury. This is done every year in the season of heavy collections when the demand for sicca rupees becomes most pressing and there is accumulated in the bank or treasury to the amount of 8 [lacs] or 1,000,000 sicca rupees. In the last year particularly the batta rose as high as 12½ percent above Arcot rupees or 4½ percent higher than the established Company's valuation, and if any other single species was to be required for the payment of the revenue, as gold for instance, which is not commonly current, or passes but in small quantities thro' the province, the like temporary enhancement of its price would necessarily prevail in the markets. Thus an exorbitant batta may be raised upon the Sa rupee because it is employed in this district not otherwise than as an engine of payment in the publick revenue, and not being the current coin of the district its circulation is almost confined to the town of Dakka, where it is converted into an instrument of advantage amongst those who are enabled to keep up or pay away large sums in a very short space of time. When the periodical payments of the revenue are small, the sicca rupee sinks below the common equation of 8 percent

It has not happened for several years that any money has been sent out of the province in publick revenue but if after paying the advances of the Dakka & Luckypore investment etc there should ever be a balance of treasury to be remitted to the Presidency in sicca rupees, the scarcity of this species would thereby be annually enhanced, because there is little or no importation of sicca rupees for any article of trade. A mint therefore would be able to supply that diminution.

In addition, the mint might make a small profit, but this was likely to be insignificant:

A small revenue used to be paid by the mint, but this is a trifling object. Besides, supposing the same quantity nearly to be coined at one general mint as at several provincial mints, Government will probably draw a greater benefit from having only one establishment. The difference on either side cannot be considerable.

A new mint at Dakka might be useful for re-striking worn coins:

As little or no money is carried out of the province, a mint might be beneficial for the purpose of renewing the current coin when it became much debased by friction & clipping, and the possessors are more liable to be injured by the arts of the bankers in giving an arbitrary value to it from this latter circumstance. There is a considerable tax now raised by them upon old rupees under the title of ramkummah, to the amount of 2 & 3 percent. This we understand to be a charge inclusive of short weight (which is generally called kum wozn [wozu]) taken to make good to the purchaser of very old and battered rupees which are frequently mixed with base rupees of copper & toothanague etc. The loss which may be supposed to arise in burning them down for the purposes of the silver smith, and reducing them to the standard of sicca rupees, or in transporting them to Calcutta or Moorshedabad to be recoined.

The members of council who had previously supported the re-opening had now changed their minds and, overall, they considered that the disbenefits outweighed the benefits:

It appearing doubtful from the above arguments whether the establishment of a mint in this province will be attended with benefits or disadvantages, and messers Pushing and Holland having positively decided in favour of a mint by their former recommendation of it to the Honble President in Council, to avoid an apparent inconsistency they beg leave to remark that they have now considered the subject in an enlarged sense as it may affect the country in general, whereas when they formerly recommended the re-establishment of the mint it was upon the pressing representations of the zamindars & farmers of the inconveniences they experienced from its abolition, and merely as it might be an ease to the people under the immediate care of this Board in the payment of their rents. Mr Shakespear begs leave to refer to a minute recorded by him on 30<sup>th</sup> March last for his sentiments as to the benefit likely to accrue to this province in particular from the re-establishment of its

# mint partially considered without any reference to what might be the effects of a general institution of provincial mints throughout the Company's possessions.

Mr Shakespear was absent when the matter was discussed by the Dakka council, and he sent in his own views. His main point was that when taxes had to be paid in siccas, the shroffs knew in advance when this was going to happen, and raised the *batta* on siccas. In earlier times, when there had been a mint in Dakka, people sent their coins to the mint to be recoined into siccas and avoided the shroffs extortions. Now, Calcutta was too far away and the shroffs had free license to charge whatever they wanted:

I beg leave to call the attention of the Board to the immediate removal of a grievance which bears extremely hard upon the zemindars and requires a speedy remedy. I mean the very extraordinary and exhorbitant batta upon the sicca rupee. In perusing the proceedings of the 29<sup>th</sup> December last (at which time I was absent), with pleasure I observe the Board have already considered the subject & recommended to the Honble Governor General & Council the re-establishment of the mint as the most likely measure to reduce the batta. But as we have not been favoured with any reply to that recommendation, I move we immediately address the Honble Board again upon the subject.

From the best intelligence I am able to obtain, the batta is now 12-8 & 13 rupees percent between the Arcot & sicca rupee and added to this is a charge made by the shroffs under the name of kumkumma (or short weight) of 4 or 4-8 rupees percent. This raises the difference between the Arcot and sicca rupee to near 17 percent, when formerly, so late as the beginning of 1774, it was never higher than 7-12, and sometimes so low as 5, and no kumkumma demanded or paid. The only cause I can discover for this extraordinary difference is the abolition of the mint, and the only remedy its re-establishment, as already recommended by the Board.

Arcot rupees being chiefly used in the provision of cloths (the great staple commodity of this district) hardly any other specie is used in payment of the revenue to the farmers. Indeed it is a prevalent custom throughout the district for them to receive no other, and engagement obliges him to pay the Government wholly in sicca rupees. The shroff or banker, well knowing the times of payment and that the farmer must at all events and at any price have sicca rupees, fixes the exchange at his own arbitrary rate, and the farmer without resource is obliged to purchase them on any terms. Formerly this was not the case. All persons who had money sent it to the mint as bullion. It was reissued at little expense and the sicca rupee being so plenty and so easily obtained, the batta fluctuated in a very small degree, nay remained almost fixed. The mint might be established without any expense to Government. Indeed a small revenue might accrue from it, without loss to the farmer as it would arise from the customary and allowed [russoom] upon the coinage, which would somewhat more than [base?] the charges. We are too distant from Calcutta to allow of the money being sent there for recoinage. The risque, the loss of time & interest would more than over-balance the advantage. No siccas are imported. The few which are in the district are constantly bought up and monopolized by the shroffs and reissued at what exchange they please. The mint once opened, I am fully of opinion the sicca rupee would instantly fall to its former value.

The Calcutta Council found this matter very difficult to decide upon, and left the matter to be considered later 19:

We have received the opinions of the Board of Trade and the several provincial councils upon questions, referred to them, respecting the benefits or disadvantages that would accrue from re-establishing the mints at Patna and Dakka and in case they should be re-established whether it would be most eligible to stamp the coins with the name of the station of each separate mint or continue as formerly to affix only that of Moorshadabad. The sentiments returned to us on this subject were various, and as we deemed the discussion and determination of it, a matter of great importance, we only then recorded the different letters, leaving the general subject to be hereafter considered.

# 1776 (AH 1190/91) – Cost of Running the Murshīdābād Mint

The cost of running the Murshīdābād mint was reviewed in 1776 and the report gives some idea of the names of people employed as well as the costs 20:

	Rupees per month
Superintendents pay and allowance	350
Ditto for Mohurers	100
Derogah Golab Sing	100
[Moorness]	26
[Jaffer Harcanah]	15
[Mohoround]	79.4
[Shaikche Gunwah]	21.6
4 Blacksmiths	14.1
[Ferorh]	3
[Dusterbund]	4
[Lackarah]	1.8
Peran Paswan	4.13

Jaggunaut Parwan	9	
[Sheachee]	3	
[Ruvannat] Peons 8	13	
Bohor Peon 4	12	
Jamaul	2	
[Hanyman]	1	
[Repnanund Bullercharge]	11.4	
[Sohanund Mirne]		7.8
[Moharam Munlore]		1
[Burklen Sing]		10
Total		788.12

# 1777 (AH 1191/92) - Closure of the Murshīdābād Mint

In April 1777, the mint at Murshīdābād was closed 21:

Agreed that the mint at Moorshedabad be abolished; that the Mint Master be not allowed to coin any more money in it after the end of this month, but that he be directed to bring down the balance uncoined, if any, to Calcutta.

This caused a problem because the Dutch had been granted the right to have their bullion coined in the mint at Murshīdābād, by the Nawab. So the Calcutta authorities wrote a letter to the Dutch explaining their proposal for dealing with this matter, namely that they could have their bullion coined at Calcutta instead. All this was reported to London in May 1777 22:

Having received complete reports from the several provincial councils of state of the currency of their respective divisions, we have taken the subject of coinage under consideration and as a preliminary measure to any regulations which we may hereafter think it necessary to adopt on this head, we have abolished the mint at Moorshidabad and proposed to the Dutch to transfer the privelege possessed by their Company of coining a specific sum annually in that mint, to the mint of Calcutta. The other arrangements which we shall make in the coinage of Bengal not being yet finally determined, we cannot notify them to you by the present despatch.

And this was confirmed in a further letter to London in November 1777 23:

9<sup>th</sup> May 1777. In our letter by the Hector we informed you of the preliminary measures we had taken to establish a general currency by abolishing the mint at Moorshidabad and transferring the priveleges enjoyed by the Dutch Company in the coinage of that mint, to Calcutta...

...21<sup>st</sup> July 1777. We have informed the Director and Council at Houghly [i.e. the Dutch] of these regulations and as they are more advantageous to them than the privelges they possessed at Moorshedabad we invited them to send any bullion they might have to be coined, to Calcutta and gave them assurances of every attention in our power to their interest, and convenience; They have acquiesced for the present in this proposal but have informed us that they cannot completely assent to the removal of their priveleges from Moorshedabad, until they receive the concurrence of their superiors at Batavia.

The Dutch authorities at Batavia must have agreed to the proposal, because there is no further discussion of the matter.

# 1782 (AH 1197/98) - Re-opening the Dakka Mint

In 1782, the Dakka mint was briefly re-opened and Mr Becher was appointed mint master. He was asked to prepare a report on the requirements for re-opening the mint, and in his report he first discusses the mint building 24:

In obedience to your commands under date the 14<sup>th</sup> June, I have obtained from Mr Paxton and by other means every information I could to enable me to form a plan for conducting the office you have been pleased to appoint me to in consequence of your resolution to revive the mint at Dakka. I have inspected the spot and remains of the building where the coinage was formerly carried on. It is so much in ruin that if the business is to be carried on then I am persuaded it will be most for the Company's interest to erect the necessary buildings entirely new. Should this be your pleasure I will order an estimate of the expense to be prepared, and forward it for your future orders on the subject. Building here is much cheaper than in Calcutta and I apprehend the necessary buildings might be erected and completed for about 4000 sicca rupees. I have enquired whether the ancient spot for coinage is esteemed essential by the natives and am assured it is not, which being the case, and considering that erecting buildings will not only be attended with considerable expense, but occasion delay, and as I find a general wish in the people here that the mint should be immediately established, permit me to recommend that a house near the factory may be hired, in which the business can be carried on. Mr Hasleby, my assistant, may reside in the house and I also can give more frequent attendance. Such a house may be rented not exceeding 150 rupees per month and, at a small expense, the lower apartments may be

fitted up for the business. Should it be judged proper hereafter to purchase the house, I doubt not but it may be effected on reasonable terms...

He proposed that mohurs and rupees should be produced together with fractions, and that they should be identical to those issued from Calcutta:

...On the most mature consideration and after the best information I can procure, I take the liberty to recommend that sicca rupees and gold mohurs be the species allowed to be coined in the mint, of the same standard as is coined in the mint at Calcutta and I am of opinion that they should have no distinguishing mark, that the shroffs may not be able to establish a batta on the rupees being carried out of this province, which they certainly will do if there is any distinguishing mark. I am further advised that smaller coins will prove a convenience to the inhabitants. If you approve it, we may coin halfs, quarters and eighths both in gold and silver...

He informed Calcutta of the establishment that he would need:

...I enclose you, agreeable to your orders, a list of such an establishment as to me appears proper at present for conducting the business of the mint. Should any alteration hereafter become necessary, I shall advise you and wait your orders before any additional servants are admitted or expence incurred, except such workmen as may be necessary on a considerable increase of coinage, and you may depend I will use my best endeavours that the mint at Dakka shall be properly conducted so as to prove of benefit to the inhabitants of this province and of advantage to the Honble East India Company. Permit me to request that you will favour me with your directions respecting the mint to be established here, as soon as possible, that the business may be commenced. I apprehend I shall have occasion for some sepoys as a guard, and an advance of some monay. You will favour me in giving such directions as you may judge proper, that these wants may be supplied...

He suggested that the dies should be sent from Calcutta together with some people experienced in coin production:

...If you, Honble Sir and Gentlemen, should approve my proposal for coining the sicca rupees and mohurs, exactly the same as in the Calcutta Mint, I apprehend it will be necessary that I should be furnished by the Mint Master with the dye used in that mint and one or two people well versed in the business to enable us to commence perfectly right. Should you concur in this sentiment I request the favor you will issue the necessary orders, that there may be no delay in the people proceeding here...

He then added a number of other rather mixed points:

... I take the liberty to enclose you an indent of stationary, which will be wanted, and request that it may be complied with. I am afraid the list of servants I now forward will be found deficient, and that others will be required when the business goes on. If any men are sent from Calcutta their wages must be added. Many others will be employed but I am informed custom has established in the mints of this country that they receive their wages from a [resume] paid by the merchants and others who send money to the mint to be coined. Charges of coining, duty to be received by the Company, and commission usually allowed, I presume are to be regulated by which is the practice in the Calcutta mint. If from circumstances any part of the expense can properly be reduced. I shall be attentive to the interests of the Company. Only permit me to observe that in Calcutta the coinage is very extensive. Here it will require time to judge whether the coinage will be considerable or trifling. As far as my interest is concerned in this subject, I refer myself entirely to your determination. I have made every enquiry in my power to enable me to comply with your directions to forward early samples of the different species of rupees which are current in the Dakka division, with reports of their currect batta and intrinsic value relative to siccas. I find there are rupees of many species of which a few are to be met with, but in reality those to be esteemed current are only French and English Arcots, and siccas, the batta continually fluctuating, often varying three or four per cent. as other siccas are wanted to pay the revenue, or Arcots to send to the Aurangs to purchase cloths. I hope the reestablishment of the mint here may in time prevent this great fluctuation and give a general currency to the sicca rupee. If after this representation you still wish to have the samples and information required, your orders shall be punctually obeyed.

	Rupees
Mr Samuel Hasleby Assistant	500
Banian and his attendants	120
One Doroga	101
1 Tanhsally a deputy	20
1 Pishear	
2 Mohurys	
1 Choesey [Choksey?]	
1 Jemuldar	
2 Peons	

List of Servants necessary to be kept on the reestablishment of the mint at Dakka

(From www.psindiancoins.com)

2 Bearers	
1 Tanhsally Pishear	
32 Shodahs	
4 Goazahgeers	
20 Durrups	
2 Chandipittos	
2 Tancey	
1 Sichchees	
1 Gunnooahs	
2 Tarrazoobus	
1 Mohur Cund	
1 Pushear	

Those servants to whom no pay is affixed are to receive theirs according to custom from the Rezum only when they are employed

The Calcutta council agreed with Becher's points except about issuing coins identical to those of Calcutta:

Agreed that Mr Becher be desired to hire a house for the purposes mentioned in his letter and that he be informed that the Board approve of his coining sicca rupees and gold mohurs of the same weight and standard as those of Calcutta but do not approve of their being struck with the same dye, as the Board have experienced many ill effects from that cause when the coins which were struck in the mints of Patna, at Dakka and Calcutta were stamped the same with those of Moorshedabad as it would prove an encouragement to [ellieis] coinage and destroy the responsibility which each office holds for its own accounts.

Agreed that Mr Becher be authorized to make such establishments as he may find necessary waving it till the business shall be so far in train as to admit of a fixed establishment and that he be informed that the Board cannot immediatley determine on his allowances as they think it necessary to have some experience of the business of the mint, but that when they are fixed they shall commence from the day of his appointment...

The mint master was ordered to provide the dies, with the mint name of the Dakka mint, presumably Jahāngīrnagar:

...Ordered that the Mint Master be directed to furnish Mr Becher with as many dyes as he may want but with the name of the Dakka mint and to furnish such other assistance as Mr Becher may require. Also a form of the books in his office and all orders respecting the mint or coinage of Calcutta now in force.

and, by September, gold and silver coins had been produced and sent to Calcutta for assay 25:

I now forward you five gold mohurs and five sicca rupees coined in the mint at Dakka which I hope will meet with your approbation. I am assured they are exactly the same standard with the money coined in your mint at Calcutta. I request you will favour me by acquainting me as soon as you conveniently can if they are found to be so.

and the coins were indeed found to up to standard 26. Since the mint master was ordered to provide dies with the mint name Jahāngīrnagar, the coins produced presumably bear this mint name. What date they might show is a matter of speculation. Calcutta was producing the 19 sun Murshīdābād coins at this time, so perhaps they would show the year 19 with the appropriate hijri date (1197 or more probably 1198). No such coins are known, but they would be excessively rare because in October Mr Becher wrote to Calcutta that not many had been struck. In addition he asked if it would be appropriate to allow him to strike Arkot rupees 27:

On the 13<sup>th</sup> September I sent five gold Mohurs & five sicca rupees coined in the mint here to be assayed in Calcutta & I wait your reply. The mint was opened here on the 26<sup>th</sup> August, but to this hour very trifling sums have been sent in to be coined. It has been represented to me that formerly the revenues from Noosenabad, Naginagur and Chittagong were in the different species they are received in those parts, sent to Dakka to be coined into siccas or sold, whereas at present they get them exchanged into siccas in other parts of the country & deliver in their revenues. If an order can be issued for these various species to be sent to the mint at Dakka & receive their amount either in siccas here or in bills upon Calcutta, it would be of great assistance to the mint, & it's further represented to me that if siccas of the 12<sup>th</sup> sun to the 15<sup>th</sup> sun inclusive could be reduced to sonaut & only 19th suns to be current, that this measure also would promote the coinage here very much. Arcot rupees are so much the currency in these provinces that they may almost be said to be the only coin known out of the city of Dakka. All the manufactures are purchased with them. There are various Arcot rupees and many very bad sorts. Whether it would be a proper measure to allow Arcot rupees to be coined in the mint here is worthy your consideration. It certainly would bring many to the mint and it's represented to me it would be of use to the circulation of the country. I beg leave to refer these points to your better judgement & shall punctually obey any orders you may please to send me. As most of the siccas coined in the mint will be conveyed into the other provinces, I apprehend an order of Government is absolutly necessary for their passing equally with the Calcutta coinage, more especially as they bear a particular mark which may give the shroffs a handle to draw an advantage from them. Unless some measures are adopted to induce the different

zemindars, farmers & others to bring their various species of inferior rupees to the mint at Dakka I do not see a probability of this mint answering any good purpose to our Honble Employers. I have been obliged to call on Mr Holland for a second 2000 [Sa Rs] to pay the salaries and defray the expenses of the mint.

However, unfortunately, Mr Becher fell ill and died before any further production took place, and the mint seems to have been closed. This is confirmed in a letter to London 28:

Having thought it expedient, as you will observe by our revenue consultations, to re-establish the mint at Dakka, we gave the superintendance of it to Mr Becher who had been appointed commercial chief at that station, and the coinage of gold mohurs and sicca rupees took place accordingly under his direction. The samples which he sent down were favourably reported upon by the Assay Master, but to our great concern his death prevented his carrying our design into complete execution.

#### 1790 (AH 1205/06) Milled Coinage at Dakka, Patna & Murshīdābād

As has been discussed in an earlier section, in 1790 a decision was made to introduce machinery into the Bengal mints and to re-open Murshīdābād, Patna and Dakka.

As soon as the decision had been reached, Lieut Golding was sent to Patna to begin work on building the new mint and was able to report that he had arrived there on 22<sup>nd</sup> February, 1790 29:

I do myself the honor to inform your Lordship that I arrived at Patna on Friday morning, the 22<sup>nd</sup> instant.

As Captain Garstin had bricks to make and every other material to provide, he had not commenced building when I arrived, or fixed on a spot. We therefore immediately examined the different buildings, the property of the Company, to see if there were any that might, at little expense, be converted to the purpose of a mint, but it does not appear to me that there is one, which would not incur a greater expence of both time and money to alter it, than it will to build a new house from the foundation. Captain Garstin has taken down part of a building which appeared to be the most promising, but the masonry proved so extremely bad, that we have relinquished the idea of raising upper rooms upon it, and have fixed on a convenient spot in the square, which was formerly the customs house, where we have begun the foundation for a new building, which will very soon be completed, as all the materials are prepared.

I beg leave to assure your Lordship that nothing unnecessary shall be done, and that the strictest economy shall be observed.

I am sorry to inform your Lordship that your apprehensions respecting the laminating machine were but too well grounded. All that had been done previous to my arrival was totally useless, but as much had not been done it is of no great consequence. I have begun a new machine which will be ready before the building is completed.

Since my arrival, I have seen a soldier of the 6<sup>th</sup> Battalion whose name is Lovell. From his conversation and what I have seen of his work, he appears to be a man of extraordinary mechanical abilities. He was brought up, and worked eighteen years, in Bolton's Manufactury at Bermingham. I need not mention to your Lordship how useful such a man would be in the present undertaking. He is at present employed by Colonel McGowan in making models, which has prevented me applying for him.

The Calcutta Board instructed the Commander in Chief to give the necessary orders for the soldier, Lovell, to be released to help Golding build the mint and so we also have a link with Boulton's Soho mint.

By March of 1790, Golding had left Patna, where Robert Blake was left in charge 30. Robert Blake was to become the assay master at the new Patna Mint (see later), which post he retained until it was closed. Later, in 1805, he was appointed mint and assay master at the Farrukhābād mint which was built to provide coinage to the expanding territories of the EIC 31 (see later section).

By May 1790, work had started on the new mint building at Dakka and Harris, at Calcutta, was able to report 32:

I am to request you will acquaint the Right Honble the Governor in Council that the mint at Dakka will require an upper roomed House of which one of the rooms both below and above may form a square of 22 feet for the mill to work and two rooms adjoining for the milling machine and adjusting room.

That it should be so situated as to admit of stores etc being brought to it by an easy carriage, and the compound to the house should be commodious as sheds erected on brick pillars and tiled will be necessary for the refiners.

The general run of go-downs about a house may be easily converted to the purposes of an assay office, melting office and bullion office for the receipt of monies, and redelivery when coined.

An order to the Collector for an advance of two or three thousand rupees will be required for making these additions and alterations which can be immediately set about, and when the length of the spindles for the mill are fixed, the plan for altering and [replacing] the beams of the house can be set up.

The compound should be well enclosed to be secure against thieves.

In the instructions to the Collector the above is all that I deem necessary as Mr Davidson, who is returning to Dakka, will, from what he has seen here [i.e. Calcutta], be able to judge of the conveniency of the place the Collector may point out.

The Board responded:

Ordered that a copy of this letter be sent to the Board of Revenue with instructions to order an advance to be made not exceeding three thousand rupees by the Collector at Dakka to the order of the Mint Master for the purpose stated, and to desire Mr Douglas [the Collector] to afford any assistance in his power to Mr Davidson in procuring a place proper for the mint, and, if none should be found, to give him such assistance as may be required for constructing one.

At the end of July, Herbert Harris (the Calcutta mint master) was able to report on the progress that had been made with the mint at Dakka, by then the most advanced of the subsidiary mints, and forwarded a letter from the assay master there, Mr Davidson, to the Calcutta Government 33:

I made choice, as I formerly acquainted you, with the approbation of Mr Douglas, of a piece of ground adjoining to his treasury and Cutcherry house in the fort of Dakka, and which I enclosed with a wall nearly eleven feet high, in length about 240 and in breadth about 200 feet. The area of this space, I conceive, will be sufficient for all the places that may be wanted for the mint.

The two principal houses of the dimensions required, will be covered in tomorrow, and by the 7<sup>th</sup> or 8<sup>th</sup> next month, the upper and lower rooms will be plastered, white washed and ready for erecting the mills and the different machinery.

Mr Douglas paid the money ordered by the Board of Revenue, being three thousand sicca rupees, which will all be expended in a few days as you'll see by the accompanying account detailed to the 22<sup>nd</sup> instant. As far as receipt could be taken for expenditure, I have done it, but for many of the small articles of expense, it was impossible. The remaining places that will be wanted are: one for keeping and reckoning the money in; one for assaying; one for refining; one for melting; one for weighing and filing it, besides a place for the working mechanics. All these can be erected at little expense against the wall enclosing the ground, except the first which must be a place of some strength and security. Glass will be wanted for the windows in the cutting and stamping rooms, and must be sent from Calcutta.

Mr Hughes, whom you proposed to be the working and superintending mechanic at the Dakka mint, may be sent up as soon as possible to erect the mills and fix the stamping presses etc, and along with him all the necessary articles you can furnish from the Calcutta mint or procure in Calcutta, as most of them, Viz: Iron, Lead etc, are very dear here. You will be so obliging as to make application to Lord Cornwallis for more money to be paid here, and to let me know if you wish for any particular dimension for any of the remaining places that are to be built. The great article of expense as you will see in the account, is chunam [a type of cement], for which formerly at Dakka, the price never exceeded 40 rupees per 100 maund. I was obliged to stop the works for some days as none could be got in Dakka, but I have engaged for 800 maunds deliverable by tomorrow or next day at 70 rupees per 100 maund.

In October 1790 the mint master proposed the following establishments for the mints at Patna and Dakka 34:

		Rs	As	Ps
Assay Office	A native assay master with two men to	100		
	attend the furnaces & one to make coppells			
Bullion Office	A head Banian with Moherers and Circars to	300		
	attend the several offices			
	A head weighman for receiving all bullion	80		
	and weighing out the silver to the refiners &			
	melters & to the plunchet office & receiving			
	& issuing the same			
	His assistant	40		
	Papers, ink etc	7	40	
	A native writer to copy accounts	50		
Melting Office	A head melter with 10 assistants & 2	100		
	Nearahs			
Plunchet Office	10 setts of Durops or people who cut the	400		
	blanks, form and adjust them			
Stamping Office	2 men to hold the dye	45		
	4 ditto to strike	36	8	
Engraver's Office	1 dye cutter	60		
	1 ditto	40		
Smith's shop	4 smiths to make & temper the stamps and	23		
	cut the refined silver			
Servants	1 Jemaldar & four peons	24		
	1 Durwan or porter	4		
	Sweeper	3	8	
Total		1313	10	

Proposed Establishment of the Patna & Dakka Mints

(From www.psindiancoins.com)

The table above shows 10 sets of duraps (men to produce blanks) in the planchet office, and 2 men holding the die and 4 men striking the die in the stamping office. This seems to imply that, at this stage, the mint master at Calcutta was still assuming that the subsidiary mints would, at least to start with, produce coins in the old manner, without machines. As will be seen, this did not happen.

George Davidson was confirmed as assay master at Dakka and Robert Blake at Patna. All the mints were to start operations as soon as possible producing 19 sun sicca rupees 'in the old mode' until the new machinery was working properly. London was informed of this in November 1790 35:

...We are happy to add upon this subject, that the new mints at Dakka and Patna are in great forwardness. Their establishments have been fixed. They remain under the charge of Assay Masters, whose services in promoting the business have been rewarded with small gratuities and who are now employed with settled salaries, under the immediate orders of the Mint Master at Calcutta.

#### 1791 (AH 1206/07) – Dakka begins to strike coins

However, there were still a few problems with the mints at Patna and Dakka and no mention of the new mint at Murshīdābād. In June 1791, the Calcutta mint master wrote 36:

I have to inform you that the Dakka mint is ready as far as respects the buildings and should the Honble the Governor General in Council chose to have it opened with the new collections, I will immediately send away *Mr* Hughes who can now be spared from the business of this mint [i.e. Calcutta] to put up the fly presses for striking. One is ready there, and another I can make and have ready to send up in a month.

The workmen I will also collect so as to be ready to send off the first of next month.

With respect to the Patna mint, it has sufficient building for carrying on the recoinage, tho' I fear the upper story of the house built by Captain Garstin will be of no use. The foundation has sunk and the walls opened so as to render it dangerous but the under story can be serviceable if the upper is taken down.

The fly presses we had made for the Patna mint we have taken for the Calcutta and shall as soon as the new press is finished for the Dakka mint put two in hand for the Patna, which I shall be able to finish before the collections in that province begin.

The Calcutta Board responded:

Agreed that the mint at Dakka, which is reported by the Mint Master to be ready as far as buildings, be opened with the collections of the new year from that country. That the Mint Master be authorized to send Mr Hughes to Dakka for the purpose he mentions to be employed under the orders of the Assay Master, Mr Davidson. Also that the Mint Master be directed to provide those workmen etc who cannot be provided at Dakka for the business of the mint, to be sent from hence without delay.

Agreed that the Board of Revenue be informed that a mint will be opened at Dakka for the purpose of recoining the money received in the collections of Dakka into sicca rupees of the 19 sun, and that they be directed to give orders to the collectors of Dakka, [Momensing?], Tipperah and Chittagong to send all rupees to the Dakka mint (except sicca) to be recoined.

With respect to the mint at Patna: Agreed that the Mint Master be instructed to write to Mr Blake, the Assay Master, to make a report for the Board's information relative to the buildings erected by Captain Garstin, and that the Mint Master be ordered to construct the fly presses required for the mint at Patna without delay.

This is all confirmed in a letter from Calcutta to London (August 1791) 37:

...The recoinage in the Dakka mint will commence with the new collections of the current year, the apparatus being there in readiness, and the necessary establishment engaged at the place or sent off when necessary from Calcutta...

...You will observe that the mint at Patna is not in so forward a state as that of Dakka, & that an accident which has happened to one of the buildings, may perhaps a little retard the business. The Mint Master informs us that no delay will be occasioned beyond the season when the Behar collections commence, for want of the necessary machinery, which he engages shall be in readiness by that period...

The Dakka mint actually started operations in September 1791 (see tables of mint output, below).

In August 1792, work finally started on identifying a site for the Murshīdābād mint and planning what would be needed there 38:

I was duly favored with your letter of the 21<sup>st</sup> ultimo informing me that the Mint Committee had directed you to desire me to report to them whether there are any buildings belonging to the Company in the city of Moorshedabad, in which a mint has been formerly established or which are calculated to answer that purpose.

In reply I beg leave to inform you that the ruins of a mint are still remaining at Homgbhoween near Mehaujumtooly in this city which has remained neglected for these 16 or 17 years. The spot I should imagine from its vicinity to the houses of the principal merchants of the place to be well calculated for the reestablishment of a mint, and some of the old materials might perhaps be used in making the new building. Excepting the above place I know of no buildings belonging to the Company in which a mint has been established, or is fit for that purpose in this city. For the information of the committee, I beg leave to forward a rough plan of the mint drawn by some of the officers who belonged to the establishment as it formerly stood, and to add that I understand many of the workmen formerly employed in the mint are still living.

# 1792/93 (AH 1207/09) – Patna and Murshīdābād begin Coinage

Pridmore states that Murshīdābād began operations in October/November 1792 and Patna at the end of February 1793. In fact, Murshīdābād started in November 1792 and Patna in January 1793 (see tables of mint output, below). However, Calcutta reported that all the mints were working by December 1792 39:

...It is with great satisfaction that we inform your Honble Court that the provincial mints at Dakka, Patna and Moorshedabad are now in employ. The superintendent at the mint in the last mentioned city has lately reported that he has completed the necessary arrangements, and opened the mint.

At the recommendation of the Mint Committee, we directed on the 6<sup>th</sup> instant, that the collectors of the districts of Rajashahy, Dingepore, Purnea and Bheerboom should be instructed to remit all rupees excepting siccas, to the collector of Moorshedabad, who is to send them to the Assay Master for coinage, together with all rupees (siccas excepted) that may be tendered at his treasury.

# **Die Production**

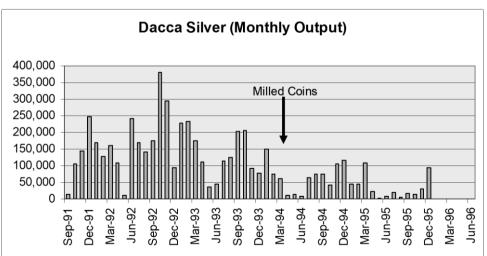
All the dies were produced at the Calcutta mint, and this is confirmed in a letter from the mint master in 1793 40:

Being about to despatch a considerable quantity of dyes to the mints at Moorshedabad, Patna and Dakka, I beg leave to represent the propriety of their going under a sufficient guard, and would request the favour of you to procure the necessary orders for that purpose. I imagine that two or three would do for the dispatch to Moorshedabad, who would proceed on to Patna, and two or three for the protection of the dyes going to Dakka.

and further confirmed by Mr Spalding a few years later 41:

At the time Government ordered the provincial mints to be established it was their intention to employ native die sinkers at each of the mints, which I perceived would be attended with an expense to Government of at least eight hundred rupees per month, including the native die sinkers then employed in the Calcutta mint. I recommended and undertook to get the dies sunk for the Calcutta and the three provincial mints in the European manner for the trifling sum of seventy five rupees per month, which was accordingly done, and an expense prevented to the Company of full seven hundred rupees per month, and that saving took place from the time the provincial mints were established untill they were abolished, a period of about six years, and even now the Company would have to pay several hundred rupees per month for die cutters but for my having introduced the European method of die sinking, as stated above for the trifling sum of seventy five rupees per month.

# Type of Rupee Initially Produced at Dakka



At first, the Dakka mint, at least, must have produced the 19 sun sicca dumps and it was not until 1794 that Dakka began producing milled coins. This is revealed in correspondence between Dakka and Calcutta. In December 1792 the Calcutta mint Master had asked for boys from the orphanage to operate the milling machines at Dakka 42:

We further request that your Lordship in Council will be pleased to permit us to authorize the Assay Master at Dakka to entertain an additional foreman and two filemen, and that you will also allow us to apply to the managers of the orphan society for two boys to be employed in milling the coin in the Dakka mint, and to

authorize the Assay Master at Dakka to provide for their food and clothing in a suitable manner, reporting the monthly expense which will be incurred for that purpose.

However, the orphan boys were never supplied to Dakka and instead a 'European' was employed for the milling process, because Davidson, the Dakka assay master, wrote to Calcutta in March 1794 43:

Having not had any accounts from you relative to the orphan boys for milling the coins, I suppose fit and proper ones were not to be got. If the Governor General in Council would permit me to employ a fit and proper European for executing the milling part, I could procure one at an equal or less expense than the orphan boys, & who would be sufficiently able to mill all the gold and silver coinage of the Dakka mint.

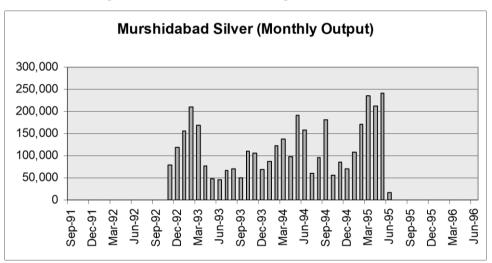
The flattening mill, cutters & all the machinery for milling gold or silver are and have been ready for some time, and the orphan boys only have delayed my using them.

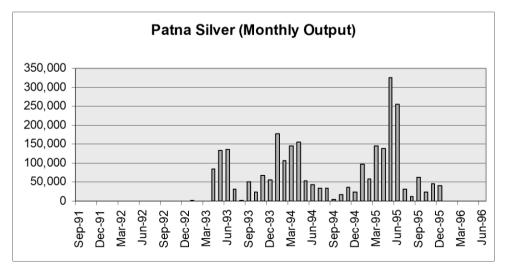
I would prefer the European I alluded to, or such another, to the boys for several reasons.

Thus, the assay master at Dakka quite clearly states that, whilst he has had the machinery ready for some time, he has not started using it, and in particular, has not used the milling machinery. This means that he had not started producing the new coins at that time (March 1794). He was given permission to employ a European and presumably started producing the new, milled coinage shortly after this.

# Type of Coins Initially Produced at Murshīdābād and Patna

The tables of the output of each mint are shown above and below. Dakka shows a marked reduction in output at about the time that milling was introduced, and it is interesting that this same pattern is not visible in the graphs for the other two mints. Assuming that the reduction in the Dakka graph is due to the introduction of milling, a reasonable assumption as the same effect was seen at Calcutta (see earlier section), and the fact that Patna and Murshīdābād began operations much later than Dakka, then it seems probable that these latter two mints introduced milling right from the start of coin production. This matter becomes important later in this section, when consideration is given to the secret marks assigned to the various mints.





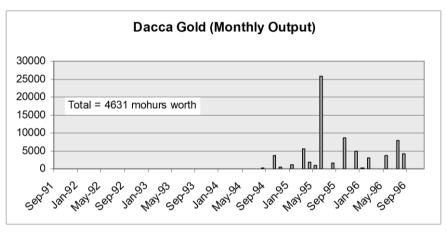
#### Patna becomes Fully Mechanised

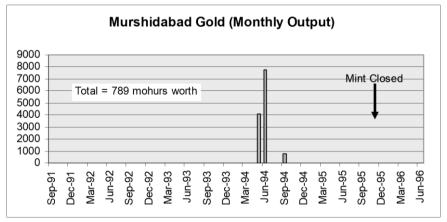
By the end of 1794, only Patna was using the fully mechanised process, although this was found to be expensive. The other mints (including Calcutta, see earlier section) were still producing the blanks by hand using workmen called duraps 44:

...On the 8<sup>th</sup> article or planchet office, I do not think any reduction would be expedient of the 11 sets of duraps proposed at Dakka and in the 10 sets at Moorshedabad, for though these artificers may sometimes be unemployed, they must at others be much hurried. But on a comparison with forming the blanks in the Patna mint, it shews that by using the flattening mill and cutting machines, the charge on that account, where the coinage has been less than at the other mints, exceeds that which is proposed at Dakka and Moorshedabad, above 50 per cent. But I would not recommend any reduction of the proposed charges on this account at the Patna mint until it may be fully ascertained by experience which of the two modes of forming the blanks promises the best coin, viz by the flattening mill and cutting machines at Patna, or by the duraps with the hammer as hitherto still practiced by each of the other mints.

#### Mint Output

The output of the three mints from the time that each of them opened, and until each of them closed, is reported in the records. The graphs show the value, in rupees, produced each month in each mint. Looking at the graphs for the gold coinage (p. 216), the output is shown in rupee value. The total output of each mint has been calculated in mohurs, and is shown on each graph. It is immediately clear that not many gold coins were struck by these three subsidiary mints. Dakka struck the most but, even there, only 4600 mohurs worth were struck during the whole period that the mint operated. The 4600 would have included half and quarter mohurs, but these are not listed separately in the records. Murshīdābād produced very few gold coins, and Patna only a few more.





	Patna Gold (Monthly Output)
10000 -	_
8000 -	Tatal = 1510 Mahura wash
6000 -	Total = 1549 Mohurs worth
4000 -	
2000 -	
0 -	
50900	් ඒද, වැ. පිදු එද, ඒද, වැ. පිදු එද, ඒද, වැ. පිදු එද, ඒද, වැ. පිදු එද, ඒද, වැ. පිදු වැ. හු,

# Attribution of the Coins to Mints



Type 2: Hijri date 1202 (4.11) Type 3: no Hijri date (4.18) Rupees of type 2 & 3 (see earlier section)

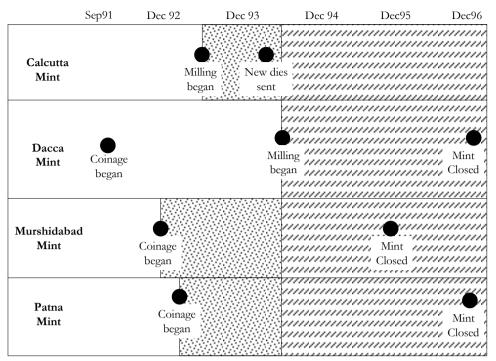
The coins of the different mints have secret, or privy, marks to identify them. For the rupees and mohurs, Pridmore identified these marks as a tiny dot in the centre of the three circles of dots found on the obverse of the coins 45:



Secret marks: Dot in right-hand circle

He assigned coins with no dot to Calcutta, coins with a tiny dot in the right-hand circle to Dakka (as shown above), those with the dot in the centre circle to Murshīdābād, and those with the dot in the left-hand circle, to Patna. He stated that this attribution was not confirmed, and was simply based on the dates that the mints started production: Calcutta first, then Dakka, Murshīdābād and Patna respectively. However, the flaw in this argument is that although the Dakka mint started production before the other subsidiary mints, it did not start striking <u>milled</u> coins until after Murshīdābād and Patna, and, in fact, after March 1794 (see discussion above). This subject therefore needs some more consideration.

The graphic below shows an overview of some of the key events affecting the four mints under consideration. Considering the type 2 rupee, i.e. with Hijri date: this type was issued from only three of the four mints and one of these was Calcutta. We know that the agreement to omit the Hijri date was arrived at in the middle of 1792 and we can assume that it took some time to produce new dies in sufficient numbers to send to all the mints. We also know that a major shipment of dies was sent to the three subsidiary mints in about December 1793. It seems reasonable to assume that these dies were the new ones without the Hijri date (type 3). The coins produced at Murshīdābād and Patna (and some at Calcutta) before this time were therefore presumably type 2 (shown as the dotted areas in the figure below).



Overview of key events

The three mints that produced the type 2 rupee were therefore Calcutta, Murshīdābād and Patna. After this, we can assume that all the mints produced the type 3 rupees (shown as the hashed areas in the figure above). This means that the secret mark not found on the type 2 coins must belong to Dakka i.e. dot in left-hand circle, not in the right-hand circle as concluded by Pridmore.





Patna

The new attribution of mint marks

Distinguishing between the other marks is not possible at present, but it seems reasonable to continue to follow Pridmore's attribution for Murshīdābād (i.e.) dot in centre circle, which leaves Patna with dot in right-hand circle.



Dot in centre circle Murshīdābād



Dot in left-hand circle Dakka The new attribution of mint marks

# **The Calcutta Mint Mark**

Pridmore attributed coins with a tiny extra dot above the two dots in the top line, to Calcutta. However this tiny dot also occurs on coins with the Patna mark and Murshīdābād mark, at least. Also, the dot does not occur on some coins with no dot in the centre of any of the three circles. In addition, the dot does not occur on some coins of later issues, when only Calcutta was in operation. It therefore seems safer to assume the Calcutta mint is identified simply by the absence of dots in the centre of the three circles. The significance of the tiny dot mark is uncertain, but it certainly seems to be the only mark that distinguishes the first Calcutta gold coins from the second type (see earlier section, Cat No. 4.1-4.8).



Patna coin with the tiny dot in the top line as well



Murshīdābād coin with the tiny dot in the top line as well

# Secret Marks on Smaller Denominations

Pridmore also identified different marks on the smaller denominations of coins, but no further comments on his attributions of these marks to the different mints are possible with the information currently available. The hidden dots on these smaller denominations appear in the three dot groups on the reverse around the beginning of the mint name.



Calcutta – dot in centre group



Dakka - dot in right group



Patna - dot in left group



Murshīdābād - no dot

# **Copper Coinage at Patna**

In 1794, Mr Blake the assay master at Patna wrote to the mint master at Calcutta discussing the shortage of copper coins, and informing him that he had consequently struck some copper coins as a trial 46:

I beg leave to represent to you an evil that exists at this place that in my opinion ought to be laid before Government. This is the great scarcity of copper coin which is at all times in great demand in this quarter, and the currency of it better established than in most other parts of the country. At present the dearth is such that only twelve annas or forty eight pice can be procured for a rupee. Whether this dearth proceeds from a real scarcity or monopoly I cannot readily find out, but in consequence of applications from all the principal merchants to the mint for a supply of pice, and at the request of the magistrate, I have coined a few sheets of copper into pice and have encouraged the propagation of a report that a large quantity of copper is coming from Calcutta for the coinage of pice here, with a view of opening the hoards if the scarcity proceeds from monopoly, but this has not had the desired effect.

Should you think proper to represent this business to the Governor General in Council, I am of opinion that one fly-press and two cutting machines to be employed at the leasure (sic) intervals of the other coinage, would very soon furnish a sufficient quantity of pice to reduce the price to 16 annas per rupee, [and] that I will with much pleasure undertake the business on account of Government

However, the Calcutta mint master replied instructing him not to strike copper coins and warning him that he would get into trouble if he continued:

In regard to what you say of copper pice, I am most fully convinced of the entire rectitude of your intention on that subject, but I must strenuously dissuade you against the shortest prosecution or repetition of the trial you mention to have made in regard to pice, either at the instance of principle merchants or any other sanction whatsoever that comes not duly authorised from the hand of Government.

I beg you to do me the justice to consider this admonition as proceeding from the justest principles of propriety and the sincerest desire to preserve you from censure, for which reason I cannot entertain a doubt

of your paying as much attention to it as if I had employed stronger terms in which to express myself on this occasion.

You may however rest assured that I shall make such use of the intimations you have given me on this article as may appear to be most conducive to public utility and in addition to the information with which you have forwarded me, I would request you to lose no time in stating the weight, intrinsic and nominal value, and place of coining of the copper pice current in your district; of how many sorts they may consist, and how many of each sort (if more than one) go current for the sicca rupee. I would also particularly desire you to apprise me what are the different prices of copper of each sort in the neighbourhood of your mint; how much of each sort you may be of opinion could be brought up from the publickly understood state of the markets; and which sort of each kind you would recommend in preference to others for the coinage of pice. Also of what weight each copper coin should be, which in circulation may represent the value of half an anna sicca, or six pye according to the English mode of account, and whether you think 32 or 64 to the rupee would form the most convenient and suitable copper coin for circulation.

In so doing you will doubtless have regard to the difference you would recommend between the intrinsic value, agreeably to the market price, and the nominal value in circulation, with such reasons as in any way may influence your judgement on the subject.

As I have no desire to conceal any matter that can in any wise be necessary to your information, I am to apprise you that Government have for some time past had in contemplation the subject of a copper coinage, but hitherto it has not been determined upon.

Your communications may therefore be highly useful in answer to the querees above proposed, but I need scarcely after this intimation on my part, urge the necessity of confining it to yourself alone, as the promulgation of such intention would tend to influence the price of copper, and enable individuals to take advantage of the moment. Hence I conceive it would be perhaps more politic rather to discourage rather than to encourage an expectation of the adoption of that measure.

In June 1794, Blake replied that he had only made a small trial run, and provided the mint master with information about the copper coins then in circulation 47:

...I am greatly obliged by your observations stated in the 7<sup>th</sup> and 8<sup>th</sup> para of your letter of the 8<sup>th</sup> instant. I beg to assure you that I have been particularly cautious in this transaction not to expose myself to censure by extending it beyond the limits of an experiment and this not exceeding ten maunds. I find that the pice coined by Mr Prinsep is held in most esteem here, musters of which I send you. There are half and quarter annas 32 & 64 per a rupee, and the only copper coin in circulation in this quarter coined under the sanction of Government. Their intrinsic value as a coin is seldom lower than 70 small or thirty five large for a rupee, and I find that 32 half annas or sixty four quarters weigh 38 sicca weight, or half a seer of the Patna weight. Hence a maund of copper will coin into eighty sicca rupees.

The present price of copper at this place is 44 to 45 sicca rupees per maund of 76 sicca weight per seer. The sort which I think the fittest for the copper coin is the sheets of the thickness of the half anna piece. Of this about 500 maunds can be procured here together with 500 maunds of the thickness of half an inch, which would require some labour to laminate into strips before it is cut into blanks.

I am of opinion that the copper coin being cut into blanks with the cutting machines and struck in a fly-press with a guide or register (in the manner the accompanying musters were struck) will be as great a check to the natives counterfeiting the copper coin as the milling is to the rupee.

The accompanying musters, 1, 2, 3, 4, pass current as single pice with a batta of one anna on the rupee worse than those coined by Mr Prinsep. The state of this coin is such as I doubt not will point out the necessity of its being reformed. From every information I can obtain, I find that four parts out of five of the copper coin in circulation in this quarter is of the kind muster 1, 2, 3, 4, and this time no more than 54 to 56 per a rupee in the country, but at Patna, where Mr Prinsep's new pice only are current, they are not to be procured at any rate.

As the mint master had predicted, the Calcutta Council were not at all happy that Blake had struck these copper coins without authorisation, and in reply they instructed the mint master accordingly:

The Board entirely disapprove of the conduct of Mr Blake in coining pice without previous application or authority and direct that the Mint Master be instructed to inform him if any pice should remain unissued by the Assay Master at Patna, that they be withheld from circulation.

However, Blake's action did provoke a review of the copper coinage, and lead to the production of a new coinage at Calcutta in 1795 (see earlier section)

The identity of the copper coins struck by Blake is not known. However, all the dies for the new milled coinage were prepared at Calcutta and, as far as we know, there were no die engravers at Patna. So, unless Blake employed a local craftsman to prepare dies, it seems likely that he would have used those that he had to hand, namely the 19 sun sicca dies. He refers to Prinsep's pice as being in circulation in Patna, so we might guess that he would choose a weight to match those coins, i.e. about 6-7g.

#### **Monghyr Mint**

In 1761 the Nawāb of Bengal, Mir Kasim Alī Khān, moved his capital from Murshīdābād to Monghyr. He built himself a palace and reorganised his army along European lines and ran the Government of Bengal from there in a way that appears to have been approved of by his subjects. However, he soon fell out with the British at Calcutta who had begun abusing their ability to avoid paying taxes and resented the fact that the Nawāb took steps to try to stop the practice. A British army was sent to Monghyr and captured the fort in October 1763 48. Thenceforth, the town became part of British India and, for many years, continued to contain an arsenal but no regular garrison.

There has been some debate about whether or not the British issued coins from the Monghyr mint after they captured the fort. Extremely rare mohurs and rupees exist dated 1176 ry 4 with the mint name Monghyr but no other coins are known from this mint. The Hijri year 1176 finished on the 11<sup>th</sup> of July 1763, before the British captured the place. These coins would, therefore, have been issued by the Nawāb from his mint at Monghyr. Only coins dated 1177 or later would have been issued by the British and none of these is known. The records held in the British Library have not yielded any evidence for the British issuing coins from Monghyr but at least one entry suggests that the mint was still open at the start of November 1763, although it could be referring to coins issued earlier. The letter is dated 1<sup>st</sup> November 1763, when the Calcutta mint master wrote 49:

... the strictest care has been ever had to keep the Calcutta rupee up to the same weight and fineness as what are coined at Moorshedabad and Mongheer...

and, in 1775, Monghyr rupees were still available in the bazaar 50:

...You will please further to inform the Board that the sicca rupees which are seen in the weekly state of the Treasury are Mongheer siccas...



Gold mohur dated 1176 RY 4, with mint name Monghyr

# Cuttack Mint

NB occupied by the British in 1803

The possibility of a pattern coin having been struck at Cuttack by a representative of the EIC was first reported by Thurston in 1893 51 but seems to have been subsequently largely overlooked, although it is discussed by Garg 52.

In May 1804, the Commissioner for Cuttack, George Harcourt, wrote to Calcutta about the lack of small value coin in the province. With his letter, he enclosed a specimen of a copper coin that he had had prepared by local craftsmen, and requested that the Calcutta mint might strike fifty thousand rupees worth of such a coin 53:

I request you will be pleased to make known to his Excellency the Most Noble the Governor General in Council that a considerable inconvenience is at present experienced in the province of Cuttack from the want of some current coin of small value. At this time cowries are the only currency in Cuttack, and they are extremely inconvenient to the merchants and inhabitants, and particularly so to the troops stationed in the province, and the pilgrims resorting to the temple at Juggernaut.

Should his Excellency the most Noble the Governor General be pleased to order a copper coinage for the use of the province of Cuttack, I take the liberty of submitting a coin, the standard value of which should be fixed with view of indemnifying Government in the expense of coinage, and which should also tend to retain it in the province.

With a view to ensure the ready reception of this coin, it is proposed that the face should bear the figure of Juggernaut and on the reverse the value of the coin might be denoted in the Persian and Oriah language together with the year of coinage.

From the want of proper artists in Cuttack, the enclosed specimen is badly executed. Should his Excellency be pleased to approve of the above suggestions, I have the honor to request that His Excellency will permit the coinage for the present to be executed in Calcutta, to the amount of fifty thousand rupees, which I have reason to hope will, for the present, answer every object expected to be derived from this arrangement.

Ordered that a copy of the above letter be transmitted to the Mint Committee and that they be directed to submit their sentiments respecting the measures which should be adopted for the purpose of establishing a copper currency in the province of Cuttack.

The letter was forwarded to the Mint Committee, who felt that they needed a number of questions answered before they could agree to undertake such a coinage 54. However, within a month, in June 1804, the

Accountant General was ordered to send as many pice as could be found in the Calcutta mint, to Cuttack 55. These were loaded aboard the ship "Scourge" and sent to Cuttack on 16<sup>th</sup> August 56. A further 30,000 rupees-worth of pice were sent in 1813 57.

The specimen referred to in the above extract has not been traced, although it may exist in a museum in India.

In 1817 it was agreed that Cuttack would have the same copper currency as the rest of Bengal 58. This was addressed by the more general Regulation XXV 1817.

#### **Tripura Mint**

Rhodes and Bose published a rupee apparently issued under the authority of the East India Company in 1761 59. A British force was sent to Tripura in February 1761, and obliged the king to grant the area of Chakla Rūshanābād to the Company. The rupee described by Rhodes and Bose (see catalogue) was probably issued as part of this action and is, presumably, a presentation piece.

#### **Garhwal Mint**

Rhodes published a copper takka apparently issued from a local mint in Garhwal 60. The coin is in the collection of the American Numismatic Society (ANS 86.449/1921.54.835). The following account is a brief summary of Rhodes' paper.

Following the war with Nepal, in 1815 Garhwal was divided between a native ruler and direct British control, and in 1816 the border was further clarified ensuring that, *inter alia*, the copper mines of Garhwal were within British jurisdiction. Copper coins had been produced when Garhwal had been under the rule of the Nepalese, but it had been thought that this activity had ceased when the British acquired control. However the coin published by Rhodes and shown in the catalogue suggests that some minting activity continued for a short while after the British conquest. The coin was probably produced in 1815.

# References

1 Bengal Public Consultations. IOR P/1/46, 9th January 1770, p. 38.

- 2 Murshidabad Letter Copy-Books of the Resident 1769-1770. Edited by Firminger W.K. (1919). Bengal Secretariat Press. Calcutta.
- 3 Bengal Public Consultations. IOR P/1/49, 16 September 1771, p. 443 also numbered 226. Letter from Patna to Calcutta dated 7<sup>th</sup> September 1771.
- 4 Bengal Public Consultations. IOR P/1/49, 16 September 1771, p. 443 also numbered 226. Letter from Calcutta to Patna dated 16<sup>th</sup> September 1771.
- 5 Bengal Public Consultations. IOR P/1/49, 18 October 1771, p. 547 also numbered 278. Letter from Patna to Calcutta dated 8<sup>th</sup> October 1771.
- 6 Bengal Public Consultations. IOR P/1/49, 29 October 1771, p. 607 also numbered 308. Letter from Herbert Harris (Calcutta mint master) to Government dated 23<sup>rd</sup> October 1771.
- 7 Bengal Public Consultations. IOR P/1/49, 2 December 1771, p. 666. Letter from Murshidabad to Calcutta dated 25 November 1771.
- 8 Bhargava KD (Ed) (1960), Fort William-India House Correspondence, Vol VI (1770-72), National Archives of India, p. 318. From Bengal to Court, dated 15<sup>th</sup> November 1771.
- 9 Bengal Public Consultations. IOR P/2/1, 18 May 1772, p. 271. General Barker's letter on this subject dated the 19<sup>th</sup> November 1771 which lay for consideration is now entered as follows.
- 10 Bengal Public Consultations. IOR P/2/1, 18 May 1772, p. 271. Letter from Patna to Calcutta dated 7th May 1772.
- 11 Bengal Public Consultations. IOR P/1/51, 31 March 1772, p. 543 also numbered 274. Letter from Mr Irwin, Superintendent of the mint at Murshidabad to Murshidabad Council, dated 20<sup>th</sup> March 1772 (on p 597 also numered 301).
- 12 Bengal Public Consultations. IOR P/2/4, 22 November 1773, p. 636. From Patna dated 21<sup>st</sup> October 1773.
- Bengal Public Consultations. IOR P/2/5, 10 January 1774, p. 115. Letter from Murshidabad to Calcutta.
- 13 Patwardhan RP (Ed) (1971), Fort William-India House Correspondence, Vol VII (1773-76), National Archives of India, p. 209. From Bengal to Court, dated 1<sup>st</sup> March 1773.
- 14 Bengal Public Consultations. IOR P/2/6, 8 August 1774, p. 328. Letter to Murshidabad.
- 15 Bengal Public Consultations. IOR P/2/6, 22 August 1774, p. 357. Letter from Murshidabad to Calcutta dated 20<sup>th</sup> August 1774.
- 16 Bengal Public Consultations. IOL P/2/6, 19 January 1775. Letter from W Keating (Superintendent of the mint at Murshidabad) to Calcutta, dated 25<sup>th</sup> November 1774.
- 17 Bengal Public Consultations. IOL P/2/9, 4 May 1775, p. 53. Extract of a letter from Patna to Calcutta received 4<sup>th</sup> May 1775.
- 18 Bengal Public Consultations. IOL P/2/10, 19 June 1775, p. 303. Letter from the mint master, Charles Lloyd, to Calcutta, dated 16<sup>th</sup> June 1775. Letter from Patna to Calcutta dated 18<sup>th</sup> May 1775.
- 19 Patwardhan RP (Ed) (1971), Fort William-India House Correspondence, Vol VII (1773-76), National Archives of India, p. 357. From Bengal to Court, dated 3<sup>rd</sup> August 1775.
- 20 Bengal Public Consultations. IOL P/2/15, 19 August 1776, p. 936. Charges General of the Mint at Moorshedabad.
- 21 Bengal Public Consultations. IOL P/2/18, 7 April 1777, p. 735.
- 22 Hira Lal Gupta (Ed) (1981), Fort William-India House Correspondence, Vol VIII (1777-81), National Archives of India, p. 344. From Bengal to Court, dated 9<sup>th</sup> May 1777.
- 23 Hira Lal Gupta (Ed) (1981), Fort William-India House Correspondence, Vol VIII (1777-81), National Archives of India,

p. 354. From Bengal to Court, dated 21<sup>st</sup> Novemebr 1777.

24 Bengal Public Consultations. IOL P/2/53, 29th July 1782, p. 548. Letter from Mr Becher at Dakka dated 22nd July 1782.

25 Bengal Public Consultations. IOL P/2/55, 16<sup>th</sup> September 1782, p. 13. Letter from Mr Becher (Superintendent of the Mint) at Dakka to Calcutta dated 12<sup>th</sup> September 1782.

- 26 Bengal Public Consultations. IOL P/2/55, 7th October 1782, p. 331.
- 27 Bengal Public Consultations. IOL P/2/55, 28<sup>th</sup> October 1782, p. 535. Letter from Mr Becher (Superintendent of the Mint) at Dakka to Calcutta dated 10<sup>th</sup> October 1782.
- 28 Saletore BA (Ed) (1959), Fort William-India House Correspondence, Vol IX (1782-85), National Archives of India, p. 327. From Bengal to Court, dated 7<sup>th</sup> December 1782.
- 29 Bengal Public Consultations. IOL P/3/51, 3 February 1790, p. 26. Letter from Lieut William Golding to Calcutta dated 25<sup>th</sup> January 1790.
- 30 Bengal Public Consultations. IOL P/3/51, 31 March 1790, near end of volume. Letter from the mint master (Herbert Harris) to Calcutta dated 31<sup>st</sup> March 1790.
- 31 Stevens PJE (2007), JONS 190, pp. 37-43.
- 32 Bengal Public Consultations. IOL P/3/52, 5 May 1790, p. 487. Letter from the mint master, Herbert Harris, to Calcutta, dated 5<sup>th</sup> May 1790.
- 33 Bengal Public Consultations. IOL P/3/53, 30 July 1790, p. 675. Letter from Davidson to Harris dated 24th July.
- 34 Bengal Public Consultations. IOL P/3/54, 1 October 1790, p. 653. Letter from Herbert Harris (mint master) to Calcutta, dated 1<sup>st</sup> October 1790.
- 35 Banerjee IB (Ed) (1974), Fort William-India House Correspondence, Vol XI (1789-92), National Archives of India, p. 363. From Bengal to Court, dated 6<sup>th</sup> November 1790.
- 36 Bengal Public Consultations. IOL p/4/3. 1<sup>st</sup> June 1791, p. 384. Letter from Herbert Harris (mint master) to Calcutta, dated 1<sup>st</sup> June 1791.
- 37 Banerjee IB (Ed) (1974), Fort William-India House Correspondence, Vol XI (1789-92), National Archives of India, p. 417. From Bengal to Court, dated 10<sup>th</sup> August 1791.
- 38 Bengal Public Consultations. IOL P/4/14, 6<sup>th</sup> August 1792, p. 57. Letter from the Magistrate at Murshidabad to the Mint Committee, dated 1<sup>st</sup> August 1792.
- 39 Banerjee IB (Ed) (1974), Fort William-India House Correspondence, Vol XI (1789-92), National Archives of India, p. 562 From Bengal to Court, dated 14<sup>th</sup> December 1792.
- 40 Bengal Public Consultations. IOL P/4/24, 1<sup>st</sup> November 1793, p. 44. Letter from the mint master to Calcutta, dated 29<sup>th</sup> October 1793.
- 41 Bengal Revenue Public Consultations (Opium etc). P/89/34. 26<sup>th</sup> February 1801, No. 2. Letter from P Spalding (foreman of the mint) dated 16<sup>th</sup> January 1801.
- 42 Bengal Public Consultations. IOL P/4/16, 17<sup>th</sup> December 1792, p. 449. Letter from the Mint Committee to Calcutta dated 6<sup>th</sup> December 1792.
- 43 Bengal Public Consultations. IOL P/4/27, 3<sup>rd</sup> March 1794, p. 363. Letter from George Davidson (Assay Master at Dakka) to James Miller, dated 22<sup>nd</sup> February 1794.
- 44 Bengal Public Consultations. IOL P/4/31, 8th December 1794, p. 49.
- 45 Pridmore F, (1963), Notes on Colonial Coins, A study of mint marks the Bengal Presidency mints of the period 1792-1797, SNC, LXXI, pp. 50-51.
- 46 Bengal Public Consultations. IOL P/4/28, 12<sup>th</sup> May 1794, p. 871. Extract of a letter from the Assay Master at Patna, dated 30<sup>th</sup> April 1794.
- 47 Bengal Public Consultations. IOL P/4/29, 2<sup>nd</sup> June 1794, p83. p. 109. Letter from Blake at Patna to James Miller, dated 15<sup>th</sup> May 1794.
- 48 Bengal Public Consultations. IOR P/1/36, 17th October 1763, pp. 314/315. Letter from Major Adams to the President at Calcutta, dated 11th October 1763.
- 49 Bengal Public Consultations. IOR P/1/36, p. 389. 21st November 1763. Letter from Anselm Beaumont (mint master) to Bengal Council) dated 21st November 1763.
- 50 Bengal Consultations. IOL P/2/10, 15 June 1775, p. 282. Letter from the Sub-Treasurer.
- 51 Thurston E (1893), Note on the History of the East India Company Coinage from 1753 to 1835, Journal of the Asiatic Society of Bengal, vol LXII, part 1, No. 1, 1893.
- 52 Garg (2010), Draft of PhD thesis.
- 53 Bengal Revenue Consultations (Opium etc). P/89/35. 10<sup>th</sup> May 1804, No. 2. Letter from George Harcourt (Commissioner for Cuttack), dated 8<sup>th</sup> May 1804.
- Also from Sanjay Garg: One such piece of information is about a proposal mooted by the Commissioner of Cuttack in 1804 for establishing a copper coinage for that province. He says in his letter that the proposed coin may bear the figure of Jaggannath on the obv. and the value in Persian and Oriya on the rev. What is even more interesting is that he is said to have got a specimen executed and forwarded for approval of the Governor General.
- 54 Bengal Revenue Consultations (Opium etc). P/89/35. 17<sup>th</sup> May 1804, No. 1. Letter from the Mint Committee to Government, dated 16<sup>th</sup> May 1804.

We have the honor to acknowledge the receipt of Mr secretary Dowdeswell's Letter of the 10<sup>th</sup> instant enclosing copy of a letter from the First Commissioner in Cuttack respecting the establishment of a copper currency in that province and directing us to report our sentiments thereon.

To enable us to submit the desired report, we request Your Excellency in Council will be pleased to direct us to be furnished with information on the following points:

1<sup>st</sup>, staement of the various species of rupees current in the province of Cuttack accompanied with specimens of not less than ten rupees of each description.

 $2^{nd}$ , In what species of rupee is the revenue of the province generally realized at the public treasury, and what rupee most prevalent in currency.

 $3^{rd}$ , The rate of batta at which the various species of rupees are equalized to that in which the public rupee is generally paid and the public disbursements charged.

4<sup>th</sup>, in the event of a copper coinage being established similar to the specimens transmitted to us, what proportion does the commissioner propose such pice shall bear to the rupee in which the revenue of the province is realized and the public disbursement made, and what mode is intended to be pursued for the introduction of the proposed copper currency into circulation.

On receipt of the foregoing information, we shall the honor of submitting to your Excellency in Council, our sentiment on the proposed measure.

Ordered that a copy of the above letter be transmitted to the 1<sup>st</sup> Commissioner in Cuttuck and that he be directed to furnish the necessary information on the different points stated in the letter from the Committee.

55 Bengal Revenue Consultations (Opium etc). P/89/35. 28<sup>th</sup> June 1804, No. 1. Letter to the Accountant General dated 23<sup>rd</sup> June 1804.

Considerable inconvenience being considered from the want of a copper currency in the province of Cuttack, I am directed to acquaint you that His Excellency the Most Noble the Governor General in Council has been pleased to desire that you will take the necessary measures for supplying the Commissioners with as large a supply of pice as can be immediately furnished from the mint at Calcutta, reporting the amount for the information of Government.

You are desired to inform the Commissioners of the relative value of the pice to silver in Calcutta, leaving it to them to determine the rate at which the former should be issued, on a consideration of the state of the silver currency in that province, until more accurate information can be obtained with respect to that point.

- 56 Bengal Revenue Consultations (Opium etc). P/89/35. 16<sup>th</sup> August 1804, No. 1. Letter from sub-treasurer dated 9<sup>th</sup> August 1804.
- 57 Bengal Public Consultations. P/8/14. 11<sup>th</sup> February 1813. No. 39. Letter from the Accountant General to Calcutta Government, dated 9<sup>th</sup> January 1813.

With reference to your letter of the 21<sup>st</sup> January 1812, I have now the honour to submit copy of a letter from the present Collector of Cuttack explanatory of the causes of the present depreciation of the couries in that district, and as the suggestions contained in the 8<sup>th</sup> and 9<sup>th</sup> paragraphs of his letter appear to me to be extremely proper, I beg leave to suggest that the Mint Master at the Presidency may be directed to remit the sum of thirty thousand sicca rupees in pice to Cuttack to enable the Collector to disburse them in the purchase of couries for the use of the temple as in the payment of such other demands upon his treasury as may appear to him to be most advantageous for the public service.

If the pice could be sent to Cuttack on one of the pilot schooners the expense of carriage would be saved to Government.

Bengal Public Consultations. P/8/14. 26<sup>th</sup> February 1813. No. 32. Letter from Davidson (Calcutta mint master) dated 23<sup>rd</sup> February 1813.

Stated that the Rs 30,000 worth of pice for Cuttack were ready

58 Bengal Mint Committee Consultations. P/162/70. No 45. Letter from the Accountant General to Calcutta Government, dated 26<sup>th</sup> September 1817.

...On all accounts it seems desirable that a copper currency should be established in Cuttack as in the other districts of the Lower Provinces. The value of Cowries in account is not elsewhere regulated by authority and the measure suggested by me on the ground explained above would certainly, if adopted, have formed an exception, and might have tended to keep up an inconvenient distinction in respect of currency between Cuttuck and the other districts of the Lower Provinces.

With regard to the copper currency now circulating by authority of Government in the Lower Provinces, it appears to me desirable to extend it to Cuttuck, and to give it the sanction of the law which it still requires throughout those provinces. I beg leave to suggest therefore that the Mint Committee may be instructed to prepare a regulation for that purpose.

This last suggestion is agreed and the Mint Committee instructed accordingly

59 Rhodes NG & Bose SK (2002), The Coinage of Tripura. Kolkata.

60 Rhodes NG (2001), A Garhwal takka struck in the name of the East India Company, ONS Newsletter, 166, pp. 17-18. Rhodes NG (2003), A Note on the copper mint in Garhwal, ONS Newsletter 177, p. 20.