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REPORT

ON

**An Enquiry into Labour Conditions in the
Brassware Industry of Moradabad**

by

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Report of an enquiry into Labour Conditions in the Brassware Industry of Moradabad made by Mr. R. D. Pant, Labour Investigator, Labour Office, United Provinces, Cawnpore.

Moradabad, a district town with a population of 143,414 according to 1941 census, is situated on the right bank of the river Ramganga. It is served by the E. I. and O. & T. Railways and is an important railway junction. It is also connected with distant places by roads. Several industries, for example cotton ginning, spinning and weaving, *ghee* and *gur* making are flourishing, but the most important is the Brassware Industry, the *ka klanas* of which may be found in every corner of the city. One significant fact is that Moradabad does not manufacture sacrificial vessels (such as are manufactured in Benares for example), but domestic and artistic wares. This is only natural, as Moradabad is not a place of pilgrimage and the earliest patrons of the industry must have been the Muslim rulers and chiefs. This obviously leads to the question of the origin of the industry.

2. It is said that about 150 years back the industry was started by one Imam Bux (great grandfather of Hafiz Sajjad Husain, an eminent living *karkhanadar* and dealer in brasswares), who came to Moradabad from Lucknow. The industry was started as an imitation of a Bidar Work—a typical example of Indian Art—the home of which was Bidar (South India) and was later also carried on in Lucknow. It consists of silver inlaid into hard black wares of zinc and other grey metals similar to steel. This work of art—white floriated lines of silver in the grey surface of metal—is no doubt matchless in beauty and durability, but it is also too costly, as it was in those days too, for an ordinary consumer. Imam Bux had an opportunity to see the original Bidar work. He also visited Jaipur and witnessed the decorations done on *farsies* there. He thus received an inspiration to start the industry at Moradabad, and finding the original Bidar work too costly, he manufactured brass utensils, invented the process of tin-polishing or *qalai*, for which Moradabad is really famous—with pure tin (*ranga*) so as to expose the brass in golden floriated lines on a white surface. Thus unlike Bidar work the floriation here is golden and the surfaces white. The articles manufactured soon found favour with the ruling princes, chiefs, and common people on account of the artistic excellence, durability of *qalai*, and cheapness. Moradabad was easily a particularly suitable place for the development of this type of industry. *Thatheras*, the hereditary brass makers in India, residing in large number in the district easily took up to the manufacture of brasswares by process of beating and hammering. The moulding of cannons for use of ruler's armies led, it is said, people to mould vessels out of molten brass. The special quality of Moradabad clay, which does not crack or trickle on heating, was no less responsible for giving impetus to the industry. Two reasons are advanced for tinning; firstly, to imitate the Bidar work by making the surface white, and secondly to make brass and copperwares

acceptable to Muslims who detest naked brass and copper on hygienic grounds. While the industry was in infancy the work was mainly done to order. Caravans from Egypt and other western countries on their way back from India gave orders to Moradabad artisans to whiten and foliate designs on their *alams*, used, on the occasion of *Muharram* festival of the Muslims. Sindhi merchants, who are found in all the ports of the near East, were the first people who introduced the Moradabad wares outside India on a considerable scale. Notable among them were Messrs. Powell Brothers, Dhannamal Chailaram, D. L. Dass Mulchand, Horechand Chailaram, and Chailaram Gianchand. Thus there was a demand for Bicsuit Box, Tea and Coffee trays, and powder box from the English people, *hasdan*, *sikfchi*, *pitari*, *agardan*, etc. from Arab and Egypt, and *thali*, *lota* and *gilas* in the country itself. In this way the industry passed on from its to-order stage to cottage stage. In the Wembley Exhibition, 1926, and Philadelphia Exhibition, 1927, Moradabad brasswares were exhibited and were introduced in the American markets. *Since then America has been one of the biggest foreign markets for Moradabad brasswares:*

3. There are about 250 dealers in brasswares in Moradabad, a list of whom is given at the end of the report. The dealer also calls himself a manufacturer inasmuch as he finances the industry and coordinates the different processes of manufacture. Different processes of manufacture of an article may be undertaken by one *karkhana* and a few independent artisans, such as manufacture of *lota*, *gilas*, tea sets, *hukka*, spoons and forks, etc. The actual fabrication of these articles is undertaken in a *karkhana* while the polishing (*galai*) and finishing (*kathai*) is done by the individual artisans including *parda* women and children. On the other hand there are certain other articles which pass through the hands of different individual artisans only during the different processes of manufacture. Such articles consist of *thali*, *golchi*, powder pot, *paimana*, flower vases, etc. etc. It is estimated that this industry engages about 13,000 people, consisting of artisans, workers in *karkhanas*, women and children working at home, cartman and host of others. Except a few big *karkhanadars*, whose number is small and who manufacture articles on their own initiative, all the artisans and other *karkhanadars* manufacture things on receiving orders from the dealer, who generally gives raw material for fabrication. It is obvious, therefore, that artisan or the small *karkhanadar* has no voice in his dealings with the dealer or the so called manufacturer (but in fact a mere coordinator of different processes of manufacture). The latter wholly dictates his own terms.

4. The brassware industry of Moradabad has been classed as a cottage industry by the Industries Re-organization Committee, United Provinces. The work is generally carried on by the artisan working in his home with his whole family, including the women and children, each working according to his or her capacity, the women working only at their leisure and convenience. In most of the *karkhanas*, big or small,—the number of big *karkhanas* is small—the *karkhanadar* or the owner of the *karkhana* is also one of the workers. It still remains a cottage industry, with the difference that here instead of different artisans working at different places many workers assemble to work in a *karkhana*. The growth of small *karkhanas* is itself a very interesting study. It happens that an artisan in the course of time acquires dexterity in one particular process, finds that the work is too heavy for him or his family alone to cope with, and asks other artisans to share

his work at his own place. Gradually he may find it profitable to under-^{take} other processes of manufacture as well for which some more artisan^s may come to work at his premises. The original artisan, now a small *karkhanadar*, employs the outsider on remuneration which the latter would have earned as an independent artisan, making allowance for the incidence of tools which the *karkhanadar* provides (most of them being primitive, simple and locally manufactured), and for saving the botheration of the worker of finding work for him as an independent artisan. Obviously it is for this reason that the earnings of a *karkhanadar* mostly comprise of his wages as worker, his remuneration as a *karkhanadar* being comparatively small.

5. No elaborate machinery is used in any of the processes except in electroplating and finishing by lathe, which are operated by electric power. This sort of finishing after polishing is done in the case of *lota* and *gilas* only.

6. Brass is an alloy of copper and zinc in the ratio of 2:1 or 3:2. Brass alloy, however, is not manufactured locally. It is imported either in the form of brass sheets, or *tora* (old worn out brasswares of all description). A variety of vessels are manufactured at Moradabad. Firstly and by far the largest in quantity are the vessels manufactured out of *tora*, which are manufactured by the process of casting; and, secondly, out of brass sheets manufactured by the process of beating and hammering. Of these varieties of vessels, *lota*, *gilas*, *golchi*, flower vases, powder pots, *hukka*, spoons and forks, *paimanas*, etc. etc. are made by casting; while *thali*, *thal*, *parat*, *tashtari*, etc. etc. are manufactured by beating and hammering process. E. P. N. S. wares or *safed mal* (white metal) are another variety manufactured out of German silver sheets (by the process of beating and hammering), and *gulli*, an alloy of cupro-nickel scrap and zinc in the ratio of 3:1, by casting. This branch of industry specialises in luxury and table wares, for example, tea sets, flower vase, perfumery cases, butter dish, *gulab pash*, *changer*, *khasdan*, *aftaba*, spoon and fork. *Kalsa* or *gagraq* is manufactured out of brass sheets by beating process. But its mouth piece is made by casting. There are certain articles which are imported from other towns, tinned or nickel plated at Moradabad and sold as Moradabad white-metal wares. Some of them not whitened, but simply polished, are sold as gold polished (*sunehra*-polish) wares. Such articles comprise *katori*, tiffin-carrier, *bhagona*, *katordan*, *thali*, *tashtari*, *pandan*, *rakabi*, etc. etc., which cannot be cast with the help of casting and moulding appliances of Moradabad. These articles are manufactured from die-presses mostly at Poona, Ahmedabad, Rewari, Bombay, from where they are imported to Moradabad. Similar and other articles are also imported from Delhi, Farrukhabad, Benares, Jaipur, and Jagadhari also. Artistic wares form yet another variety. Engraving is done on such articles. *Pandan*, powder pot, tray, *thali*, flower vase, cigarette case, ash-tray, and perfumery case are some of them.

Processes of manufacture

7. To understand fully the problem of workers' wage rate or his earning which is, so to say, the pivot on which the allied questions of working time, conditions of work, average working days in a month, standard of living, etc. etc. depend, it is necessary that a brief but thorough

description of different processes of manufacture should be given. During manufacture, an article undergoes the following processes:

I—(1) Casting (*dhalai*) by (a) *para* casting, or (b) *darza* casting; or (2) shape making by beating process.

II—Repair of defective castings (*jhalai*) done on vessels manufactured by casting process only.

III—Filing *ragrai*.

IV—Scraping (*Chhilai*)—(a) by hand, (b) by lathe.

V—Polishing : (a) hand-tinning or *qalai*, (b) electroplating.

VI—Engraving: (a) *sada* or *nok*, (b) *siah kalam*, (c) *sumba*, etc.

I—Moulding (*Dhalai*) or shaping (*thukai*)

8. There are some articles which are manufactured by the process of casting, which again is done in two ways, viz., (a) *Para* casting, and (b) *Darza* casting. The raw material used for articles manufactured by casting is *tora* (old, worn out brasswares, shavings and scraps of brass). Others are manufactured by the beating process. The raw material used here is brass sheet, or *chakka* brass which is the war time substitute for brass sheet not available now.

9. (1) (a) *Para Casting*—*Lota* and *gilas*, which are the two articles manufactured by far in the largest quantity in Moradabad, are manufactured by *para* casting. The manufacture of *lota* and *gilas* is carried on exclusively in *karkhanas*. The mould is evolved through a number of stages each of which has its own recognised name and importance.

10. The mould is made of clay found near tanks or the river bank. It is dark brownish in colour. Various ingredients like *munj*, *ban*, *bhusa* are mixed in the clay to strengthen it. Each mould contains two portions—the inner core called *tir* and the outer shell called *purat*. The inner core is first made on the inside of a block vessel or sample as they call it, and when dried, taken out. The outer shell is made on the outer side of the sample, and when dry, is cut into two. The outer side of the inner core and the inner side of the outer shell are then given a finish by the plaster of *pindol mitti*, a sort of fine whitish clay. This is done to ensure the smoothness of the two surfaces between which the molten metal is to run. The inner core is then inserted inside the hollow of the outer shell already cut into two. The two parts of the outer shell are joined up at the top leaving a hollow space between the two structures, both the surfaces of which are smooth and finely coated with *pindol*. At the bottom of this structure, now known as *para*, is affixed, with clay, a piece called *tikli*, with a curved hole in it through which the molten metal passes inside the hollow space between the *tir* and *purat*. A *chalni*, or an earthen sieve, with a number of holes in it is kept over the *tikli* of the mould. An earthen crucible known as *kuthali* (and made of the same material as the mould), which contains raw material (eight parts of *tora* and one part of zinc), is then kept over the *tikli* and solidly joined to the mould with a thick casting of clay. The combination of *para* and *kuthali*, after it is thoroughly dry, is put into a baking oven (*bhatti*) with *kuthali* downwards. The baking oven, built of bricks with a thick coating of mud, is either square or round, with a diameter, if round, otherwise length of 4 to 6 feet. A number of moulds—the number varying according to the size of the article manufactured—can be put into the baking

oven at one time. This baking of a number of *paras* at a time is known as *pur*. Thus it is said that so many *gilases* number such and such or *lotas* number such and such can be had in one *pur*. The baking oven is 3 feet below the surface of the ground and projects to about 2 feet above. *Sal* fire wood is used in it. One maund of firewood is consumed in one *pur*. When the *paras* have been heated for some time, the *bhattiwa'a* (furnace man) tests the state of metal by shaking the moulds with the help of big *sandasi* (a pair of tongs), and when he judges that the raw material has reached a proper stage of fusion, he takes out the mould from the furnace and inverts its position so that the *kuthali* is now upwards and the *para* downwards. The molten metal thus runs in the *para*, through the earthen sieve to prevent any impurities running into the *para*. As the whole thing gets cold outside, the metal solidifies within the *para* into the desired shape. The *para* is then broken and the vessel comes out somewhat greenish in colour. The baked clay is then removed from the inner and outer surfaces of the vessel.

11. Four different sorts of workers are required in the process of *para* casting, viz. (1) *para* maker, who makes the *tir* and *purat*; (2) *taiyari wala*, who gives the finishing by the plaster of *pindol mitti* and joins the inner and outer structure; and (3) *bhattiwala*, who joins *kuthali* to the *para* and bakes the mould in *bhatti* (baking oven). Occasionally there may be a boy with each of the workers to help the latter. He is a sort of paid or unpaid apprentice, and, if paid, is paid by the worker out of his earnings. The fourth is *mitti safai wala* who breaks the *para* and removes the baked clay out of the vessel.

12. (b) *Darza Casting*—Except *lota* and *gilas*, all other articles that are manufactured by the method of casting are made by *darza* casting. This process is found prevalent in nearly all the metal-ware manufacturing centres of India. This is comparatively a simpler affair, and fewer men are required here than in *para* casting. The *darza* consists of one flat dish having raised border of iron and another iron rim which fits over the raised border of the former. Into the flat dish is filled what the artisan calls *masala* which is a mixture of used lubricant and black clay from the potter's furnace or even black soot and ash from the ordinary household hearth. This *masala* is filled up to the brim, levelled by the palm of the hand and then covered with a little powdered wood-ash. Over this is placed the 'sample' of the ware which is to be prepared. Over the sample is again thrown the same *masala* and then the other part of the *darza*—viz. the outer rim—is put over the *masala* to cover the whole flat dish. The *masala* is again levelled with fingers and palm. The outer rim of the *darza* is taken out of the inner dish with such dexterity that the *masala* which was thrown second time over the sample comes up with the outer rim and leaves the sample on the *masala* of the flat dish. The sample is taken off and a hollow appears in *masala* in each of the two parts of the *darza*. The upper rim is then placed over the *masala* of the lower dish such that the impression of both the hollows coincide with each other and make one hollow of the shape of the sample. In the meantime the boy worker known as *galaiya* puts the raw material in a crucible known as *gharia*—a small globular inkpot-like thing—and heats up the crucible in the fire worked by wheeled bellows. *Sal* charcoal is used in this process. *Gharia* is prepared by mixing *Delhi-ki-mitti* (porcelain) and *kali-mitti*, a special kind of clay. When the raw material in the *gharia* reaches fusion, the worker (and not the *galaiya* boy) holding the crucible

with an iron *sandasi* (pair of tongs) pours the molten metal into the mouth of *darza* which has a device by which the molten metal passes into the hollow created in the *masala* by removing the sample. After a few minutes the metal solidifies and desired vessel is obtained. The *masala* can be used again. This type of casting is resorted to in the manufacture of tea set, spoon, fork, *golchi*, flower vase, powder pot, *paimana*, etc. Eight parts of *tora* and one part of zinc for brasswares, and *gulli* for *safed mal* (E.P.N.S. wares) are used as raw material.

13. Two workers are required in *darza* casting, viz. (1) *Galiaya* (generally a boy worker) who heats the raw material in the *gharia*, and (2) *dhalaiya* who does the rest of the work.

14. The main difference in the two types of casting is that in *para* casting the mould as well as the raw material are both heated together, while in *darza* casting, only raw material is heated and poured into the mould outside the furnace. *Darza* casting is simpler and less expensive than *para* casting and can be carried on by independent artisans in their premises. The same *masala* in *darza* casting can be used again and again, whereas the clay once made into *para* and baked in the furnace is useless for any subsequent use.

15. (2) *Shape making by beating process (thukai)*—It is a very common way of manufacturing wares in India. Before the war, beating from the native cast plates had become extinct, and that from foreign sheets of brass (for brasswares) and German silver (for white metal) was in vogue. Things have now changed since the war began. Foreign sheets are now practically non-available owing to the import difficulties. Country-made substitute for brass sheets now used in *chakka* manufactured and imported mostly from Jagadhari (Punjab). The process is very simple but requires dexterity and professional skill. Brass sheets are cut according to the size and shape of the article by means of chisel (*chheni*) and hammer (*hathora*) or with a pair of rough scissors (*gainchi*). It is then passed on to the operatives at the anvils to beat into the required shape. The workman, holding the sheet in a slanting position on an iron slab, which has a groove in it, hammers them with a mallet, round the edge, till a side is raised. It is then further hammered and the edge is filed. The whole of the above process can be undertaken by one worker only. Vessels like *thali*, *thal*, *parat*, *tashtari*, tray, tea sets, *kalsa*, etc. are made in this manner. This process is generally carried on by artisans and rarely in *karkhanas*.

II—*Jhalai* (The repair of the defective castings)

16. *Jhalai* is not needed in articles made by the beating process. It sometimes happens that when the mould is broken the casting is found defective. For instance, the metal may not have properly penetrated into the hollow, or holes may be caused by the air not having been able to escape properly as the metal was run in. Such articles are passed on to *jhalaiya*, to repair the defect in the casting. The artisan cuts a patch (*chakti*) of the shape and size of the defect from new brass sheet, and fixes it on the defect. He then beats it with his mallet and sets it right on his fire worked by bellows. The defect thus disappears. As only the defective and not all articles require *jhalai*, the *jhalaiya* in this case is not a regular worker in the *karkhana* but an independent artisan who works at his own premises where the different *karkhanadars* send their defective articles for repair. In the case of some vessels, *kalsa*, flower pots, tea sets for example

two or more component parts, made as separate castings are soldered together to make the complete vessel. The work of soldering is also done by the *jhalaiya*.

III—Ragarai (Filing)

17. This is done in case of some vessels only. After the baked clay has been removed from the vessel in *para* casting it is passed on to the filer who files off the inequalities of the surface and its greenish colour.

IV—Chhilai (scraping)

18. Scraping is an essential process in the manufacture of all sorts of vessels, whether made by the process of casting or beating, whether brass-wares or E.P.N.S. wares. Scraping may be done either by hand or by lathe. Such articles as *lota*, *gilas*, *nigali*, *thali* and other round shaped vessels which can be worked on a lathe are scraped by lathe. Others, such as tea sets, spoon, fork, powder pots, *golchi*, etc. which cannot be worked on lathe are scraped by hand. The lathe is made of wood and consists of a heavy roller, thicker at one end and tapering somewhat at the other. Two workers, the *chhilaiya* and the *khinchaiya* work on the lathe. The *chhilaiya* heats the vessel and affixes it by means of lac to the thin end of the roller. When the vessel gets firmly joined to the roller, the *khinchaiya* commences pulling the strap backwards and forwards, so that the roller and so also the vessel commence revolving. The *chhilaiya* then scraps the revolving vessel by applying *randa*, or chisel, to it, thus giving a finish to the ware. Under his skilful handling the vessel assumes a fine shining appearance. Scraping by hand is a simpler affair and is mostly undertaken by women and children at home during their spare time.

V—Polishing (qalai)

19. After fabrication by the above processes the wares may either be polished, or engraved and lacquered, or both. A polished article is, however, not lacquered but simply engraved if so desired. Polishing may be done in two ways, viz. (a) Hand tinning (*Hath ki qalai*) and finishing (*kathai*), or (b) electroplating and polishing.

20. (a) *Hand tinning (hath ki qalai) and finishing (kathai)*.—It is really this branch of the industry that has, more than any other, made Moradabad so famous as the White-metal Town. It is a matter of profound sorrow that the quality and durability of Moradabad *qalai*, which may be said to be the back bone of the brassware industry here has very considerably deteriorated with the advent of electroplating which is much cheaper but not so lasting. On account of the competition with electroplating and consequent cry for cheapness it was found impossible to carry on the costly *hath ki qalai* maintaining the highest standard of quality and durability. Thus, in place of pure tin (*ranga*)—which only was previously used as polishing agent and which, so to say, was THE secret of Moradabad *qalai*--one part of tin (*ranga*) and three parts of lead came to be used. Hence the present deterioration in the quality of Moradabad *qalai*. All this had already happened in the pre-war days when electroplating came to be introduced and fast expanded.

21. Hand tinning or *hath ki qalai* is a very interesting process and presents an example of the excellence of Indian indigenous system. The *kalaiagar* or the tinner first heats the vessel on a hearth worked by the bellows.

When it is hot, he applies to the surface of the vessel a piece prepared out of the mixture of lead (3 parts) and tin (1 part). This piece melts just when it touches the hot vessel. On this melted coating, is sprinkled sal-ammoniac or *nausadar*, and with the help of a cotton rug the artisan revolves the liquid material round the outer side of the vessel, which assumes at once a whitish appearance. He then takes a small stick to one end of which cotton wool is tied and holding it from the other hand, puts it into the hollow of the vessel; and the vessel becomes white inside too, as he again applies the tin and lead piece and rubs it with the cotton wool. All this is done with such dexterity and quickness that the visitor cannot help paying tributes to the artisan and his industry. After washing which is done to remove sal-ammoniac, the vessel is passed on to *tapaiwala*, who heats it in an oven. The heating (*tapai*) is a very important factor in *hath ki qalai*. By this the coating of lead and tin permeates into the pores of the brass and therefore does not give way at hard rubbing in the house of the user. It gives to the vessel *pakki qalai*. The vessel when taken out of the oven becomes grey instead of white. It is then passed on for finishing (*kathai*).

22. *Kathai* may be done with hand or with machine run by electric motor. If quickness of finish and cheapness is needed, machine finishing is resorted to. But finishing by hand or *hath ki kathi* is much superior. Here again one marks the excellence of the indigenous system. First, to clean the vessel, a powder called *manuri* dissolved in water is rubbed on the surface of the vessel. The *manuri* is made of burnt fragments of some old crucible and does not involve any cost. Then the vessel is polished with *kurand ka masala*, which is a cheap native polish. *Kurand* is a stone which is hollowed to contain ordinary mustard oil. This oil is rubbed with another piece of stone again and again till it becomes white in colour. This is known as *kurand ka masala*. The vessel, if oval, rectangular or globular, is rubbed on with the blanket and *kharbar* cloth with hand; but if sufficiently thick, flat and large, e.g., *thal*, is rubbed with feet. The man standing over the blanket or *kharbar*, as it is placed over the vessel, and, holding the wall with his hand, swings on the vessel right and left till the grey vessel becomes white and glittering. Last of all the vessel is given a finish with ashes of burnt wood.

23. Only such globular articles as *lota*, *gilas*, *katori*, can be given a finish (*kathai*) by lathe worked by an electric motor. The vessel is inserted on one end of the iron lathe over which is tied a piece of blanket or *kharbar* cloth. As the switch is put on, the lathe commences revolving and the worker rubs the outer surface of the vessel with a piece of cloth. Similarly the inner surface is also worked. The grey vessel thus becomes white.

24. (b) *Electroplating and polishing*—Before the vessel is electroplated, it comes to the polisher for cleaning of the surface, or what is termed as '*jila uthana*'. This is done by a revolving iron rod worked by an electric motor. To one end of the rod is attached a round bough. The worker applies lustre, a foreign powder, to the bough and presses the vessel against the bough till the vessel attains glitter, or *jila*. The article may then either be nickel-plated or silver plated. Before actual plating the vessel is washed with water and chalk if it is to be nickel-plated. There are big tanks or vats—separate for nickel and silver plating—filled with water and nickel salt if nickel plating is desired. Nickel enodes are hung dipped into this tank. For silver plating, there are two tanks, one having copper enodes and the other silver ones dipped into water. Over all these tanks in the centre

passes a brass rod to which the electric current passes. Thus, if nickel plating is desired, the vessel is dipped into the nickel tank. An article for good silver plating is first introduced in copper tank and then in silver tank, while for ordinary silver plating it is sufficient to dip the article in silver tank only. The article is then taken out and washed with chalk powder and water. It then again goes to the polisher, this time for refining. He applies "Peerless" or "Rose-bar"—a foreign substance—over the bough and repeats the former operations. The vessel thus becomes bright and shining. Certain vessels are not plated. They are simply polished and glitter like gold, which is known as "*sunahra* polish."

25. It may, however, be noted that electroplating and polishing effects only the surface of the metal and the lustre does not permeate into the pores. The polish is not so durable as that done by hand polishing. However, electroplating is very cheap and obviously on account of the craze for cheapness quality is not so much sought for. Electroplating works have considerably increased in number during the recent years. Some of them are also registered factories—the only registered factories in the whole of the brassware industry of Moradabad—and some evade the operation of factory laws by usual tactics.

26. The one alarming feature is the competition which the *hath ki galai* is facing with electroplating. Thus, that branch of industry which was a special feature of Moradabad is in the danger of being ousted. Already the hand tinning (*hath ki kalai*) has received a great set-back with the diminishing demand and deterioration in quality. Measures should be adopted to protect the artisan (*galaiagar*), and his art (*hath ki galai*) acquired through generations.

27. Four different varieties of workers are employed in electroplating work, viz., (1) polisher, who polishes the article in the lathe, (2) plater, who works on the nickel, copper and silver tanks, (3) *khariyawala*, who washes the articles with chalk powder and water, and (4) *bandhanewala*, who helps the plater.

VI—Engraving (*nakkashi* and *khudai*) and lacquering

28. Engraving is the work that requires the highest skill of an artist. It is really a thing of beauty—a piece of art. There are two styles of work, viz., the *sada* and the *siah qalam* engraving. *Sada* engraving is called *nakkashi* and engraving for *siah qalam* is known as *khudai*. *Nakkashi* is done on tinned vessels, whereas *khudai* is done on unpolished brasswares.

29. In *nakkashi* light and pointed indentations like stars in the sky, representing the figure of the design that is engraved, are made.

30. *Khudai* is a pre-requisite for wares meant for lacquering. In *khudai* patterns are cut such that the portion of the brass other than that forming the shape of the pattern is chiselled out and the pattern is exhibited in relief. The artisan doing this work is known as *ulchaiya*. The depressions are then filled with lacquer and the pattern glitters in golden brass. Thus the difference between *nakkashi* and *khudai* is that in *nakkashi* the indentations represent the pattern whereas in *khudai* the depressions represent other than the pattern.

31. The implements used by the engraver are *nok*, a small hammer, wooden tripod stand and working iron (in case of *nakkashi*), and *kalam*,

pair of compasses, pencil, *thapki* (wooden hammer), tripod stand and *zira*. Various kinds of engraving are: *nakkashi*, *nok*, *khudai*, *sumba*, *mina*, *bedar*, *marori*, etc.

32. *Rang-bharai* (Lacquering)—After *khudai* by the *ulchaiya*, the dealer passes on the vessel to *rang-bharaiya*, or lacquerer. The vessel, after being thoroughly cleaned, is heated on a small *angethi*, or earthen hearth. Then the artisan fills the depressions of vessel with thick thin coloured lac-pencils, the lac melting due to the warmth of the vessel. The colour is levelled and unnecessary lacquer removed out of the vessel with the help of a tool named *kaiya*, which is also heated. The colours used are blue, green, red, violet, white and black. Wares for household use are not lacquered. Only luxury wares are lacquered, e.g. flower pots, bowls, smoking sets, trays, lamp-stands, perfumery cases, etc. The art of lacquering has also won a name, particularly in the Canadian National Exhibition, Toronto in 1935.

33. The brief description of various processes of manufacture enables one to form an idea of the important features of the industry, the role of the artisan, paid worker, *karkhanadars* and lastly the dealer, and the share which each gets or should get out of the profits of the industry. The above description is also necessary in any attempt to ascertain the conditions of work inside the *karkhanas* and the artisans' premises.

34. From the above description of the manufacturing processes it is also seen that following categories of artisans and workers are engaged in the Brassware Industry of Moradabad :

- (1) *Parawala* (Para maker) ;
- (2) *Taiyariwala* ;
- (3) *Bhattiwala* ;
- (4) *Mitti safai-wala* ;
- (5) *Dhalaiya* ;
- (6) *Galaiya* ;
- (7) Shape-maker (in beating and hammering process or *thukai*).
- (8) *Ghalaiya* (repairer of the defective castings).
- (9) *Ragariya* (filer) ;
- (10) *Chhilaiya* (scraper) on the lathe ;
- (11) *Khinchaiya* (puller of the lathe strap) ;
- (12) *Hath ka chhilaiya* (hand scraper), a work usually done by women.
- (13) *Qalaigar* ;
- (14) *Machine kathaiwala* (finishing by machine) ;
- (15) *Hath kathaiwala* (hand finishing) also a work done usually by women.
- (16) *Tapaiwala* ;
- (17) Polisher in electroplating;
- (18) Plater in electroplating ;
- (19) *Khariyawala* in electroplating ;
- (20) *Bandhanewala* in electroplating ;

- (21) *Nakkashiwala* or engraver ;
 (22) *Khudaiwala* or *ulchaiya* ;
 (23) *Rang-bharaiya* (Lacquerer) ;
 (24) *Niariya* or the worker who collects the brass scrapings and filings.
 (25) *Kuthali*—manufacturer, who prepares earthen *kuthali* for *para*-casting. This work is also done by women.

35. In addition, there are other categories of workers who are indirectly engaged in the industry, for example, cartman, who carries cart load of clay to the *para* manufacturers ; coolie who carries loads of wares from the dealer's shop to the artisan's premises and *vice versa* ; card-board box makers and makers of wooden stands for keeping sport cups and flower vases. But as they are neither engaged as workers by the dealer or *kar-khanedar*, nor do they, as independent artisans, carry on a process directly connected with the manufacture of brasswares, they should not be included in the above list of workers and artisans.

36. The type of work done by each worker or artisan has already been discussed in the description of manufacturing processes.

Scale of weight

37. The scale of weight at Moradabad is different from the standard weight. One seer (local) is equivalent to 100 tolas, or $1\frac{1}{4}$ seers (standard). Similarly a maund or a chatak is also $1\frac{1}{4}$ times the corresponding standard weight. During enquiry, the figures were only available in terms of local scale of weight. The conversion of these figures in terms of standard weight would have given odd and cumbersome figures. All weights in this report, except where otherwise specified have, therefore, been given in terms of local scale of weight.

Organizations and finance

38. The dominating position in the industry is occupied by the dealer who finances the industry and carries away the lion's share in the profits. He finances the purchase of raw materials, controls the design and markets the product, while the work of actual manufacturing is done either by the artisans each having his dealings direct with the dealer, or the workers through a *karkhanadar*, big or small. The whole thing works like this. The dealer asks an artisan (or a *karkhanadar* for articles which are manufactured in *karkhanas*) to manufacture articles that he (the dealer) requires and gives raw material for fabrication. The artisan after operating within the scope of manufacturing processes undertaken by him, passes on his finished product to the dealer. The dealer then passes on the articles to other artisans for further operations, it coming back to the dealer each time after the completion of any one operation. Thus, after the article has passed through different artisans each time through the dealer, it becomes ready for the market, and finally comes back to the dealer. Similar is the case with articles manufactured through the *karkhanadar* with this difference only that here more than one operations (but not all) are undertaken by different workers through a *karkhanadar* in one *karkhana*. An artisan provides his own tools; but in a *karkhana* they are supplied by the *karkhanadar*.

39. *Batta*—The *karkhanedar* who originally undertakes the fabrication of the articles exchanges his finished product in terms of *batta*, and manufacturing charges per article. That is to say, the remuneration of the *karkhanadar*, out of which he pays the labour and establishment charges, includes the cost of the finished product calculated at a fixed rate per seer and the manufacturing charges per article, minus, the cost of the raw material provided by the dealer. The difference between the costs of finished product and the raw material required for fabrication is known as *batta*.

40. Two illustrations of *gilas* and *thali* would explain the whole thing better :

41. *Gilas* no. 3—*Gilas* is manufactured in *para* casting *karkhanas*. Only casting, filing and scraping is done in the *karkhana*. After this the finished product is made over to the dealer who gets it polished (*qalai*) by the *qalaigar*, finished by the *kathaiwala*, or also engraved by the engraver. For 100 *gilases* no. 3, the dealer gives, 29 seers 5 chhataks, of *tora* (old worn out brasswares). The finished product, namely 100 *gilases* would normally weigh 23 seers 7 chhataks. The cost of raw material at present is calculated at the rate of Rs.3-3 per seer, and that of finished product at Rs.4-12 to Rs.5 per seer. The difference between the cost of the finished product and raw material is known as *karkhanadar's batta*. In addition to his *batta*, the *karkhanadar* would also get annas 3 per *gilas* as manufacturing charges. This latter charge always remains constant. Only the rate of the finished product and hence the *batta* varies with variation in the price of raw material and other economic forces. The increase or decrease in wages is also covered by the variation in *batta*. *Batta* system is prevalent in cases of articles manufactured in *karkhanas* only.

42. *Thali* no. 9—*Thali* is manufactured by the process of beating and hammering. *Batta* system is not prevalent here. For manufacturing 9 *thalis* the dealer gives 6 seers of brass sheets (or 6 seers of *chakka* which is now the wartime substitute for brass sheet) to the artisan (shape maker) and gives Rs.2 as labour charges. The finished product, i.e., 9 *thalis*, is then made over to the dealer who then gives the article to scraper for scraping, *qalaigar* for polishing and *kathaiwala* for finishing, or else to engraver for engraving. The article is then ready for market.

43. *Karkhanadar*.—Most of the *karkhanadars* manufacture goods on receiving orders and raw materials, or price thereof, from the dealer. Their financial position is not strong and they depend on the dealer for carrying on their work. Each instalment of articles must first be disposed of in order to enable a *karkhanadar* to undertake the manufacture of a subsequent one. He is therefore unable to safeguard himself adequately against varying economic forces that make or mar an industry, and falls an easy prey to the devices of the dealer. The *karkhanadar* does not own a shop where he could sell his wares ; nor does the dealer own a *karkhana*. Both are thus inter-dependent. But the *karkhanadar*, or an independent artisan for that sake, under monetary stringency is indirectly bound to accept prices offered by the dealer. Not only does a dealer make a *karkhanadar*, a *qalaigar* or an engraver compete with the other, but he also sometimes cuts down the amount due by him on pretence of inferior quality or low workmanship. The *karkhanadar* or artisan who cannot afford to lose his financier, customer, and all-in-all, has but to accept whatever is given to him. However, a few big *karkhanadars*, who possess quite large *karkhanas*

are wealthy people. They manufacture goods on their own initiative and with their own raw material, and dispose it of on their own terms and at a time favourable to them. But their number is small. Otherwise a majority of them get a marginal profit and are no better than labourers. In fact a *karkhanadar* who is also a worker in his *karkhana*, earns more as a worker than as a *karkhanadar*. *Karkhanadar* manufacturing different articles have now formed separate associations to safeguard their interests. Thus there are associations of *para* casting *karkhanadars*, spoon and fork manufacturers, etc.etc. It may be hoped that their conditions will now improve. The dealers also have an association of their own.

Industry and the War

44. War has given a fillip to the industry as a whole. The demand for spoons and forks by the military is quite heavy, and the production of these articles has increased very considerably. There are a number of big dealers in Moradabad who are Government and Military suppliers. They get orders direct from the Supply Department and other agencies for the use of military. They get the articles manufactured as usual and also get them ready made from other dealers who are not military contractors. No other articles manufactured in Moradabad are in demand from the military, except cruet stand (*namak dani*) for which there is a small demand.

45. The presence of a large number of American Troops in India has also, it is said, created a large demand for Moradabad art-wares. As already stated elsewhere Moradabad art-wares had particularly found favour with the Americans. Even such articles as small *farsis* (used by women for smoking *hukka*), have been purchased in large quantities by Americans as a "souvenir" of India.

46. Yet another factor for the expansion of the industry is said to be the increased demand from the Punjab. The Punjab has always been the biggest buyer of Moradabad brasswares in India. The purchasing power of an average resident of the Punjab has now considerably increased owing to the recruitment for war. Hence an increase in demand from Punjab.

47. The figures of import of brass by rail in Moradabad for different years are as follows (in standard maund) :

1938-39 (pre-war period)	..	..	17,880 maunds.
1939-40 (war period)	..	..	21,300 „
1940-41 ditto	..	..	24,350 „
1941-42 ditto	..	..	27,180 „
1942-43 ditto	..	..	29,860 „

It will be observed that the increase in 1942-43 over the pre-war period of 1938-39 is 67 per cent.

48. Things, however, have recently changed for the worse. The industry is now suffering from the usual wartime handicaps of transport difficulties and non-availability of essential raw materials. Booking restrictions have increased. Zinc, which is said to be the back-bone of brass industry is not available easily. Zinc is one of the two components in the brass alloy. It is used in the manufacture of articles out of *tora*. The condition regarding non-availability of zinc is deteriorating daily.

The quota fixed by the Government under non-Ferrous Metals Control Order is said to be entirely insufficient for the requirements of the industry. Very small quantity of it is available in black market and that too for fancy prices. Many *karkhanas* have to remain closed for a number of days in a month for want of zinc. It is not known whether this is only a temporary feature or is it going to stay.

Wages

49. Broadly speaking wage rates are determined by the traditions and customs for such standardised articles as *lota*, *gilas*, *thali*, spoon, fork, etc., which have more or less standard sizes and quality. Otherwise the dealer or the *karkhanadar*, as the case may be, solely determines the wage rates, the other party, namely the worker or the artisan, having practically no voice. Wage rates in the industry of the West are mostly based upon union rates, accepted both by the employers and the employees, trade agreements, awards by arbitration or conciliation boards, or, in countries which have Trade Boards Acts for the fixation of wages in unorganised industries where association of workmen is weak, upon the decisions of Trade Boards. In India, however, none of these methods of wage fixation obtains even in large scale industries, not to speak of the small ones. Usually the governing factors, which the employer takes into account in wage fixation are demand for and supply of the type of labour required, the chances of the worker's getting work elsewhere in other industrial centres as alternative, personal efficiency, and the current rates in the locality where the concern is situated. How far do these factors affect the determination of wages rates in the industry is to be seen.

50. Of the different categories of workers (and also artisans), a vast majority is skilled, and the rest semi-skilled. It appears that the demand for and the supply of the skilled and semi-skilled workers is fairly evenly balanced : fairly, becomes it has certainly been felt that the expansion of the industry at Moradabad has not exactly kept pace with the growth of population during the last decade. All the workers in the industry belong to Moradabad city and a few suburban villages. No labour is drawn even from the other parts of the district itself. Owing to the facts that the brassware industry as localised in Moradabad is unique in nature and that the worker does not like to go to the other centres of industry (Benares, Mirzapur and Farrukhabad in United Provinces) in search of better prospects, so long as he is assured of even a comparatively lower wage in his own native place, the factor of the worker's chance of getting employment elsewhere does not therefore operate in the interest of the workers. Piece rates of wages are prevalent in most of the processes of manufacture. The factor of personnel efficiency is automatically implied in case of piece rate wages. Boys working as *galaiya* in *para* casting are employed on fixed daily wages. They are generally apprentices. In engraving and lacquer work, no standardization as regards quality and artistic excellence is possible. Here each work is judged by the dealer who alone determines wages for it, taking into account the labour of the worker in executing the work and also the probable price which it would fetch in the market. Here again the artisan has no voice in the fixation of wages. As a matter of fact the dealer here has a greater scope for exercising his individual discretion in absence of any standard factors for fixation of wages. Wages are almost the same for the same class of work in different

karkhanas. Thus, though piece rate wages are different for *lota* and *gilas* or for *lotas* of different sizes or *gilases* of different sizes, they are so adjusted and proportioned to the daily output of a worker as to enable a *parawala*, *taiyariwala*, *bhattiwala*, or *chhilaiya* in *lota karkhana* to earn the same daily wages as the corresponding worker in a *gilas karkhana*. A *nakkashi wala* (engraver) engraving a simple *nok-work* may finish five vessels in a day, and another engraver of same grade of skill but engraving a more elaborate *nok-work* may do only two vessels a day, but their wages according to the work done by each would be such that the daily earnings of both would be almost the same. The basis of calculation of wage rates for a particular type of work has been so chalked out that the average daily earnings of the labourers in their grade of skill tend to be the same.

51. *Periods of wage payment and period elapsing before payment*—Period of payment is very important as it makes the amount of wages greater or less by indirect methods. Whatever the nominal amount may be, the frequency of time of payment is a matter of concern to the labourer. The longer he must wait for his wages the greater is the extent of his need for credit, and, accordingly, the higher will be his cost of living and the lower his real wages. The advantages of fewer pay days are obvious to the employer. His cost of book keeping is less and his required circulating capital will be less. Wages are paid weekly in all the *karkhanas* except in electroplating works where they are paid monthly. Artisan working independently such as *qalaigar*, *kathaiwala*, engraver, lacquerer or *thali-maker* may get his wages on completion of an instalment of work given to him. Thus a dealer may give raw material to a *thali-maker* for fabrication specifying the period during which the work is to be completed. The artisan would receive his wages on piece rate on completion of the work. The question of period of wage payment does not therefore arise in such cases. As regards period elapsing before payment, it is difficult to generalise as the diversity of practice is greater. Friday is generally observed as a weekly holiday in most of the *karkhanas* as all the workers, artisans and *karkhanadars* except the *kalsa*-manufacturers are Muslims. Ordinarily wages for the work done during the week ending Thursday would be payable on any day between the following Friday and Monday, any one of which being observed as a pay day in different *karkhanas*. But strictly speaking this does not present the correct picture. Owing to the practice of taking advances, universally prevalent in the Moradabad Brassware Industry as also in other small scale and cottage industries in the United Provinces, the worker is always indebted to the *karkhanadar*. For various reasons, a worker may not be able to put up work sufficient to enable him to earn a living wage in a week. He may thus be obliged to take loan from the *karkhanadar* off and on, to be adjusted from his weekly earnings at convenient times. The case of artisan is still more complicated. He may receive some payment in advance from the dealer and the balance on completion of job. Sometimes further advances are made while the work is still in progress. In some cases such advances take the form of interest bearing loans, the account being continued over a long period.

52. *Standardisation of wages*—Standardisation of wages exists to an appreciable extent in Brassware Industry at Moradabad. By this statement

it is not to be inferred that the standard wages as existing today are also the reasonable wages. That is entirely a different question. What is implied by the above statement is simply that the wage-rate for the particular manufacturing process of an article is almost the same in different *karkhanas*. It may also be added further that for fabrication of a particular article, say *thali* no. 9, or for *qalai* of, say, 100 spoons, an artisan would get wages at almost the same rate at a time from the different dealers. This sort of standardisation of wages is quite an old feature of the Industry ; and this is only too obvious. Manufacturing of brass-wares at Moradabad has been a highly specialised art, confined to some particular families only residing in Moradabad. The nature of work also requires the highest amount of specialised skill. The skilled labour could not obviously be had from any and every source. The element of competition among the artisans was naturally absent. (Unfortunately an unhealthy type of competition *now* exists among the workers, particularly among certain types of workers notably engravers and lacquerers the demand for whose work has considerably decreased during the last ten years or so.) A uniformity of wages was thus necessary in the interest of dealers and *karkhanadars* themselves, as also to induce the workers to work. Hence the standardisation of wages as found today. All this, however, is applicable to manufacture of articles of ordinary use only, where the standard of quality or size can be determined, and not to the work of art done on luxury and table wares, e.g., engraving, lacquering, manufacture of costly tea sets of novel designs, etc. The price of such articles is determined not only by the amount of labour put in by the worker and the raw material provided by the dealer, but also by the novelty of design, artistic excellence, workmanship and so on, for which no well defined standard can possibly be fixed.

53. *Deductions*—The problem of deduction from wages involves, (a) deductions in respect of fines, (b) deductions as payment for damages, (c) deductions for benefits, (d) deductions for charitable purposes.

54. Fines are presumably imposed for disciplinary reasons. The practice of such deductions in respect of fines is not obtainable in the industry. As a matter of fact that the question of disciplinary action does not arise at all. An independent artisan working in his own house at his own time is, by the very nature of his relations with the dealer, not an employee. Even the relations between a *karkhanadar* and his worker are not those of an employer and employee in the strictest sense. Usually both of them belong to approximately the same status. (This point has been fully dealt with while tracing the growth of *karkhanas*.) The worker in a *karkhana* is perfectly at liberty to start his work at his own time, work for as many hours and finish his work at his convenience. He can even absent himself without previous information, or the permission of his *karkhanadar*. The question of subordinate and superior to the extent of maintaining discipline does not exist.

55. Deductions as payment for damages may be for bad or negligent work and injury to raw materials. In *para* casting, a *para* may sometimes crack in the oven and the raw material wasted. The *bhattiwala* of course does not get wages for the cracked *para*, but apart from this no other deductions from his wages is made to make good the loss of *karkhanadar's* raw material. This is only fair as the loss is entirely beyond

the control of the worker. For defective castings also, which need *jhalai*, no deduction is made and the *karkhanadar* bears the extra cost of *jhalai*. The position is, however, different where the dealer and the artisan are the two parties. Here the damages during manufacture are not regarded as a part of dealer's risk. The dealer gives the raw material to the artisan for fabrication and takes back the finished goods after satisfying himself that each individual article is in good condition. Damages during manufacture (which are comparatively less frequent than in *para* and *darza* castings in the *karkhanas*) are entirely borne by the artisan. It is humanly impossible to do perfect work, and no matter how good an artisan may be at his work, faults must occur at times. Such faults are parts of entrepreneur's risk and should be dealt with as such.

56. No beneficial measures are undertaken either by dealers or *karkhanadars*; hence any deduction on this account is out of question. Deductions for charitable purposes, more or less compulsory, are very common in the industry. Both the *karkhanadars* and the dealers make such deductions which are used for maintenance of mosques, temples, *dharmashalas* and for other charitable purposes. No one can object to such a deduction on principle, provided it is voluntary. Otherwise, if compulsory, such a deduction is all the more objectionable, for unlike other deductions, it is neither imposed for any fault on the part of worker nor is it used for his benefit.

57. *Minimum wage*—Is it necessary that a minimum wage should be prescribed in the industry? Fixation of minimum wage is an attempt to equalise the power of employer and employee in making the wage bargain. It has been generally recognized that minimum standards for safety and sanitation, maximum length of working hours and working days, and certain conditions of wage payment, should be fixed. Work may be done under safe and sanitary conditions for hours not too long, and payment of wages may be prompt and regular; but if the amount received is too small to secure the necessities of life, the health, welfare and efficiency of the worker are menaced. Hence the need for the fixation of the minimum wage, particularly in industries that one may suspect to be 'sweated'. A community of well organized workers may itself take its own care to some extent and fight its case for a living wage. But in the Brassware Industry of Moradabad the workers, completely unorganized, have no organization to name. They are employed on low wages (particularly in these war days of high prices) and are apparently unable to make any effective efforts to improve their conditions. At present there is no machinery for fixation of wages; and in the absence of trade union of the workers there are no trade agreement or union rates which have been accepted both by the employers and the employees; the bargaining power of worker is moreover weak; and the cumulative result of all these various factors is that the dealer is entirely at liberty to fix any rates he likes. If the unorganized workers are to be helped towards an equality in bargaining power with the dealer, certain standards must be set below which the wages may not be depressed, in other words, minimum wage must be fixed.

58. *Bonus*—There is no system of payment of bonus to the workers in the industry. In fact it is hardly possible to find a cottage or small scale industry which has a system of bonus. Bonus is paid to workers for regular attendance. It is therefore a sort of inducement to the worker to be regular in their work, and may check frequent absenteeism—a feature of

the industry which, more than any thing else, has hampered the growth of the industry on right lines.

59. *Daily wages*—Let us now examine the daily earnings of different categories of workers and artisans. In working out the daily wages a working day of 10 hours, being an average, has been taken into account, unless otherwise stated. Of course, a 10-hour working day is not a hard and fast rule, the worker working for as many hours, more or less, according to his sweet will and the amount of work available. In all types of work, wages of a man of average skill have been considered, the nature of work being such that the professional skill of different workers with sufficient experience approximates to the average skill. Thus one *parawala*, *taiyari-wala*, *chhilaiya*, *dhalaiya* or *qalaigar* would turn out almost as much work with a little variation as any other, provided both have sufficient experience. Things are, however, slightly different in engraving and lacquering. Here the nature of work is such that the individual capacity gets a wider field for display of skill. Engraving and lacquering are works of art; and obviously mere experience cannot go to make a successful artist. An elaborate engraving work takes more time than an ordinary one. But the wage rates for the work are so proportioned to the daily output that the daily earnings of the two types of artisans would tend to be the same :

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
	Rs. a. p.	Rs. a. p.	
Engraver— <i>Nok</i> work (ordinary work in 15 <i>gilases</i> in 8 hours at Re.0-1-6 per <i>gilas</i>).	1 6 6	0 11 3	100
Engraver— <i>Nok</i> work (more elaborate work in 10 <i>gilases</i> in 8 hours at Rs.0-2-3 per <i>gilas</i>).	1 6 6	0 11 3	100
Engraver— <i>Nakkashi</i> (fine <i>nakkashi</i> work on <i>pandan</i> lids)	1 8 0	1 0 0	50

60. Obviously the demand for *nakkashi* on *pandan* lids is decreasing. The artisans do not get sufficient work. Almost similar conditions obtain in *siah kalam* work as well :

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
	Rs. a. p.	Rs. a. p.	
<i>Ulchaiya</i> —(<i>Khudai</i> work on lids of perfumery cases)	1 6 6	0 15 0	50
<i>Ulchaiya</i> —(<i>Khudai</i> work on trays)	1 12 0	0 14 0	100
Engraver—(<i>Sumba</i> work)	1 0 0	0 8 0	100

61. An engraver may get work direct from the dealer or through a middleman, himself and engraver, who distributes the work among his colleagues and himself. Out of the daily earnings of an engraver 6 pies per rupee are deducted by the dealer for charitable purposes, and 1 anna per

rupee by the middleman, if there is one, to cover the expenses on *ral* which is used in the work, and his commission.

62. The work of lacquering (*rang bharai*) is also done by women, besides men, to a small extent:

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
	Rs. a. p.	Rs. a. p.	
<i>Rang bharaiya</i> —(Working for 8 hours)	1 0 0 to 1 8 0	0 10 0 to 0 12 0	60 to 100

63. "The manufacture of engraved and lacquered brassware still continues to be the speciality of the Moradabad Industry. Moradabad Industry used to cater for overseas market also, but this trade is said to be declining. The quality of brass and other raw materials, used as well as the craftsmanship have gone down considerably. Owing to the constant price cutting competition, quality goes on deteriorating." (Report of the Industries Re-organization Committee, 1934).

64. The wages of other categories of workers and artisans are given below :

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
	Rs. a. p.	Rs. a. p.	
<i>Paimana manufacturers—darza casting</i>			
<i>Dhalaiya</i>	1 6 0	0 11 0	100
<i>Galaiya</i>	0 4 0	0 2 0	100
<i>Khinchaiya-cum-chhilaiya</i>	1 8 0	0 12 0	100
<i>Gilas manufacturers—(para casting) gilās no. 3.</i>			
<i>Para maker</i>	1 8 0	0 14 0	71.4
<i>Taiyariwala</i>	1 10 0	0 15 0	73.3
<i>Bhattiwala</i>	1 8 0	0 12 0	100
<i>Mitti-safai</i>	0 15 0	0 10 0	50
<i>Ragaraiya</i>	1 8 0	0 12 0	100
<i>Chhilaiya</i>	1 11 0	0 13 6	100
<i>Khinchaiya</i>	1 8 0	0 12 0	100
<i>Niariya</i>	1 0 0	0 8 0	100

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
	Rs. a. p.	Rs. a. p.	
<i>Lota manufacturers—(para casting) Lota no. 6</i>			
<i>Para maker</i>	1 8 0	0 14 0	71·4
<i>Taiyariwala</i>	1 10 0	0 15 0	73·3
<i>Bhattiwala</i>	1 8 0	0 12 0	100
<i>Mitti-safai</i>	0 15 0	0 10 0	50
<i>Ragaraiya</i>	1 8 0	0 12 0	100
<i>Chhilaiya</i>	2 4 0	1 2 0	100
<i>Khinchaiya</i>	1 2 0	0 9 0	100
<i>Thali makers—(beating and hammering process) Thali no. 9</i>			
<i>Shape-makers</i>	1 14 0	0 13 6	122·2
<i>Chhilaiya</i>	1 14 0	0 12 6	140
<i>Powder pot manufacturers—(darza casting) Pot no. 3</i>			
<i>Dhalaiya (36 pots)</i>	1 5 0	0 9 9	115·4
<i>Chhilaiya (24 pots)</i>	1 8 0	0 12 0	100
<i>Galaiya</i>	0 4 0	0 2 6	60
<i>Tea set manufacturers—(darza) Hafiz Sajjad Husain's karkhana</i>			
<i>Dhalaiya</i>	2 0 0	1 0 0	100
	to	to	
	3 0 0	1 8 0	
<i>Ragaraiya</i>	1 8 0	0 12 0	100
<i>Chhilaiya</i>	1 8 0	0 12 0	100
<i>Jhalaiya</i>	1 8 0	0 12 0	100
<i>Kalsa manufacturers (Kalsa no 10)</i>			
<i>Shape-maker</i>	1 12 0	0 14 0	100
<i>Chhilaiya</i>	1 12 0	0 14 0	100
<i>Electroplating works (monthly wages)</i>			
<i>Plater</i>	50 0 0	30 0 0	66·7
<i>Polisher</i>	25 0 0	15 0 0	66·7
<i>Khariyawala</i>	8 0 0	4 0 0	100
<i>Bandhanewala</i>	15 0 0	8 0 0	57·5

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
<i>Golchi manufacturers—Darza (Golchi no. 1)</i>			
<i>Dhalaiya</i> (66 <i>golchis</i>)	1 8 0	1 0 0	50
<i>Galaiya</i>	0 12 0	0 6 0	100
<i>Ragariya</i> (90 <i>golchis</i>)	1 8 0	1 0 0	50
* <i>Kathaiwala</i> (1 woman working 4 hours a day) ..	0 6 0	0 3 7½	65·5
<i>Spoon manufacturers</i>			
<i>Dhalaiya</i>	1 8 0	1 0 0	50
<i>Galaiya</i>	0 12 0	0 6 0	100
<i>Ragariya</i>	1 8 0	1 0 0	50
<i>Dhabba-chhilaiya</i>	0 12 0	0 6 0	100
Stamper	1 8 0	0 15 0	60
<i>Qalaiyar</i> (<i>Hath ki qalai</i>)	1 12 0	1 0 0	75
<i>Tapaiya</i>	1 4 0	0 11 6	73·9
<i>Flower pot manufacturers—Darza (Flower pot no. 7)</i>			
<i>Dhalaiya</i> (24 pots)	1 2 0	0 12 0	50
<i>Galaiya</i>	0 4 0	0 2 0	100
<i>Chhilaiya</i> (4 dozen pots)	1 8 0	0 12 0	100·7
* <i>Jhalaiya</i> (4 dozen pots)	1 4 0	0 12 0	66·

*Wages for 100 *golchis* are Rs.2-6-0 (current) and Re.1 pre-war. From this should be subtracted the cost of raw material and incidence of tools.

	Pearless	Kerosene oil	Used Kambal	Tools	Total
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Current	0 10 0	0 1 0	0 2 0	0 1 0	0 14 0
Pre-war	0 0 8	0 0 5	0 0 4	0 0 1	0 1 6

Thus the real wages for 100 *golchis* are Rs.1-8-0 current and Re.0-14-6 pre-war.

**Jhalaiya* here is not a casual worker, repairing the defective castings, but a regular one soldering two parts of the flower pot each of which is a separate casting. He is paid at Re.0-8-0, per dozen now and Re.0-4-0 per dozen in pre-war days. But he uses his own raw material (brass, tin, zinc, borax) and tools and pays Rs.0-6-0 per day to *Galaiya* (boy apprentice). (Annas 3 in pre-war period). Deducting Re.0-6-0 per day as cost of raw material and incidence of tools (1 anna per day in pre-war days) for 4 doz. articles the real wages come to what is shown in the table.

Artisan	Daily earnings		Increase per cent.
	Current	Pre-war	
Miscellaneous	Rs. a. p.	Rs. a. p.	
<i>Jhalaiya</i>	1 5 0	0 11 6	82.6
*Spoon scraper—25 spoons (a woman working 3½ hours)	0 3 0	0 1 9	71.4
<i>Kathaiwala</i> — <i>Gilas</i> no. 3 (by machinery run by electric motor) 9 hours' work.	1 4 0	0 10 0	100
<i>Kuthali</i> -maker (a woman working 8 hours a day) ..	0 4 0	0 2 9	45.5

65. *Para* casting is invariably done in big *karkhanas* (of *lota* and *gilas*) employing 20 to 25 workers. All men working here (*para-wala*, *taiyari-wala*, *bhattiwala*, *mittisafaiwala*, *ragaraiya*, *chhilaiya*, *khinchaiya*) come under the category of "worker" employed by the *karkhanadar*. Usually the *karkhanadar* himself is also a worker in one of the categories.

66. *Karkhanas* carrying on *darza* casting are comparatively much smaller, employing 2 to 8 workers including the *karkhanadar* himself. In smaller *karkhanas* the artisan is himself the chief worker (*dhalaiya*), with a boy apprentice as his assistant (*galaiya*). The third man, the *khinchaiya-cum-chhilaiya* is usually an independent artisan in small *karkhanas* and a paid worker in bigger ones. What generally happens is that different members of the family carry on different processes of manufacture in *darza* casting, with only a few outsiders in some cases. *Galaiya* in *darza* casting is usually a boy apprentice. In the beginning when the work done by him is entirely unskilled, his wages are 4 annas a day only. Gradually he picks up more and more work, and his wages are also increased accordingly.

67. A *jhalaiya*, usually works as an independent artisan. The nature on his work is twofold. Firstly, he repairs defective castings. For this he is paid Re.0-1-6 for small defect and Re. 0-2-0 for bigger defect; (half this rate in pre-war days). Working in this way he earns Re.1-5-0 in a day. In some of the vessels (*e.g.*, in flower pots, tea sets, *kalsa*, etc.) two or more parts as separate castings are joined together. The work of soldering here is also done by the *jhalaiya*, who works, so to say, as a regular worker in this case (working still as an independent artisan). A *jhalaiya* uses his own tools and raw material. In the latter capacity, he may earn as much as Re.1-8-0.

68. *Kuthali* (the earthen crucible used in *para* casting) is made by widows and other women who have no other means of livelihood. Three hundred *kuthalis* are sold for one rupee, out of which Re.0-4-0 may be deducted as cost of raw material (paddy stalk, *tun* and clay) and incidence of breakage. A woman, working 8 hours a day, can make out 100 *Kuthalis*. Her daily earnings thus come to Re. 0-4-0 per working day of 8 hours.

69. Manufacture of *kalsa* or *gagra* deserves a particular mention. This work is exclusively done by a few Hindu *thathera* families of Moradabad city. *Kalsas* are mainly in demand during Hindu marriage season. Work

*Wages in cash for scraping 100 spoons are Re.0-5-0 (current) and Re.0-4-0 (pre-war) plus 5 chh. of scrapings the price of which is Re.0-7-6 (current) and Rs.0-3-0 (pre-war).

is accelerated a month or two before the marriage season, which may be said to be a busy season for the *kalsa* industry. Demand is lowest—almost to nil—during the four months of the rainy season (June to September). During this period, *kalsas* are manufactured to cope with the heavy demand of the busy season; but the manufacturers, for the sake of ready money, sell them to dealers for lower price. During the eight months of the year, the daily wages of a worker, on an average, come to Re.1-12-0. As regards the slack period, the daily earning may be half or even less on account of paucity of work, and reduced rates of wages.

70. Scraping of spoons, forks, etc. by women at home is also a thing deserving particular mention. The current rate of wages paid in cash is Re.0-5-0 for scraping 100 spoons while in pre-war period it was Re. 0-4-0 per 100 spoons. Together with the wages in cash, a worker also gets the scraped material which is 5 chh. in 100 spoons, worth Re.0-7-6 now and Re.0-3-6 in pre-war days. A woman working for 3½ hours can scrape 25 spoons. Her total wages in a day would therefore be as follows:

Artisan	Daily wages		Increase per cent.
	Current	Pre-war	
Spoon-scraper (a woman working for 3½ hours—25 spoons)	Rs. a. p. 0 3 0	Rs. a. p. 0 1 9	71.4

Cost of manufacture

71. The cost of manufacture may be presented in two ways, viz., (1) *karkhanadar's* cost of manufacture, and (2) dealer's cost of manufacture.

72. A *karkhanedar's* cost of manufacture does not include all the expenses incurred in the manufacture of an article finally ready for the market. In fact a *karkhanadar's* cost of manufacture is not a cost of manufacture as such, but only the cost of one or more processes of manufacture. A dealer's cost of manufacture, on the other hand, would not separately show the incidence of cost of tools, establishment charges, etc. of the *karkhanadar* or the artisan, as they are included in the latter's remunerations. Otherwise there are obvious advantages in selecting the dealer's cost of manufacture. For articles manufactured by the independent artisans, dealer's cost of manufacture is the only possible alternative. As it is equally important to know the margin of profit of both the dealer and the *karkhanadar*, the cost of production of each will be taken into account:

Items	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
<i>Dealer's cost of manufacture of 100 gilas no. 3.</i>	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
<i>Weight—Raw Material—29srs. 5chh.</i>					
<i>Weight—Finished goods—23 srs.</i>					
<i>7chh.—Cost of 100 gilases ..</i>	4 12 0	111 5 3	0 4 0	5 13 9	1,800
	per sr.		per sr.		
<i>Manufacturing charges ..</i>	0 3 0	18 12 0	0 3 0	18 12 0	Nil.
	per gilas		per gilas		

Items	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
<i>Dealer's cost of manufacture of 100 gilases no. 3—(concl'd.)</i>	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Polishing 100 <i>gilases</i> ..	4 2 0 per 100	4 2 0	1 5 0 per 100	1 5 0	214·3
<i>Kathai</i> 100 <i>gilases</i> ..	3 0 0 per 100	3 0 0	1 4 0 per 100	1 4 0	140
Total cost 100 <i>gilases</i> ..	..	137 3 3	..	27 2 9	404·9
Selling price ..	1 6 6 per <i>gilas</i>	140 10 0	0 4 6 per <i>gilas</i>	28 2 0	400
Dealer's profit ..	..	3 6 9	..	0 15 3	..
<i>Dealer's cost of manufacture of 100 lotas no. 6. Weight of 100 lotas—38 srs. 8 chh. Weight of the raw material (tora)—48 srs. 2 chh.</i>					
Cost of 100 <i>lotas</i> ..	4 12 0 per sr.	182 14 0	0 4 0 per sr.	9 10 0	1,800
Manufacturing charges ..	0 6 0 per <i>lota</i>	37 8 0	0 6 0 per <i>lota</i>	37 8 0	Nil
Polishing 100 <i>lotas</i> ..	6 14 0 per 100 <i>lotas.</i>	6 14 0	2 3 0 per 100 <i>lotas</i>	2 3 0	214·3
<i>Kathai</i> 100 <i>lotas</i> ..	4 0 0 per 100	4 0 0	2 0 0 per 100	2 0 0	100
Total cost ..	..	231 4 0	..	51 5 0	350·7
Selling price ..	2 7 0 per <i>lota</i>	243 12 0	0 8 6 per <i>lota</i>	53 2 0	358·8
Dealer's margin ..	..	12 8 0	..	1 13 0	..
<i>Dealer's cost of manufacture of 9 Thalís no. 9.</i>					
Brass sheet 6 srs. ..	..	N.A.	0 14·0 per sr.	5 4 0	..
<i>Chakka</i> 6 srs. ..	4 0 0 per sr.	24 0 0	..	Not used	..
Polishing and finishing 9 <i>thalís</i> ..	..	2 12 0	..	0 14 0	214·3
Shaping charges 9 <i>thalís</i> ..	..	2 0 0	..	0 14 0	128·6
Scraping charges 9 <i>thalís</i> ..	..	2 0 0	..	0 14 0	128·6
Total ..	..	30 12 0	..	7 14 0	..
Minus the cost of scrapings and cuttings.	$\frac{1}{2}$ sr. at Rs.3 pr sr.	2 4 0	$\frac{1}{2}$ sr. at 8 annas per sr.	0 4 0	..
Dealer's cost of production ..	..	28 8 0	..	7 10 0	273·8
Selling price, 9 <i>thalís</i> ..	5 srs. at Rs.6-12 per sr.	33 12 0	5 $\frac{1}{2}$ srs. at Re.1-8 per sr.	7 14 0	328·6
Dealer's margin ..	..	5 4 0	..	0 4 0	..

Items	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
<i>Karkhanadar's cost of manufacture of 100 Golchis no. 1.</i>					
<i>Weight 100 Golchis = 21 srs.</i>					
<i>Raw material used = 25 srs. 8 chh.</i>					
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Oil for masala .. ..	..	1 4 0	..	0 4 9	321.1
String and Ghariya .. ..	..	0 1 0	..	0 0 3	300
Aluminium 1/5 sr. .. ..	..	0 13 0	..	0 1 3	966.7
Charcoal 20 srs. (sal)	3 2 0 per md.	1 9 0	0 8 0 per md.	0 4 0	525
Incidence of cost of files .. ..	..	0 2 9	..	0 0 6	450
Incidence of repairs of files .. ..	..	0 2 0	..	0 1 0	100
Incidence of darza moulds, chakkar and other tools. .. ..	..	0 1 0	..	0 0 3	300
House rent, etc. .. ..	..	0 2 0	..	0 2 0	Nil.
Wages to Dhalaiya	per 100	2 4 0	per 100	1 8 0	50
Wages to Galaiya	Do.	0 12 0	Do.	0 6 0	100
Wages to Chhilaiya	Do.	2 4 0	Do.	1 8 0	50
Total .. ..	..	9 6 9	..	4 4 0	..
Raw material lost in the process of heating 2½ srs.	3 3 0 per sr.	7 15 6	0 8 0 per sr.	1 4 0	..
Loss on account of filings—2 srs. of filings.	Filing sold at 3 srs. per rupee.	5 11 9	..	0 15 0	..
<i>Karkhanadar's cost of manufacture of 100 Golchis.</i>	..	23 2 0	..	6 7 0	222.8
<i>Karkhanadar's Batta.</i>	1 4 0 per sr.	26 4 0	..	..	..
<i>Karkhanadar's margin of profit on 100 Golchis.</i>	..	3 2 0	..	..	..

Items	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
<i>Karkhanadar's cost of manufacture of 100 gilases no. 3.</i>					
<i>Weight of the finished product—</i>					
<i>23 srs. 7 chh.</i>					
<i>Weight of the raw material (Tora)—</i>					
<i>29 srs. 5 chh.</i>					
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Tora 29 srs. 5 chh.	3 3 0	93 7 0	0 8 0	14 10 6	537.5
	per sr.		per sr.		
Zinc 3 srs. 10 chh.	4 6 0	15 13 9	0 5 3	1 3 0	1233.3
	per sr.		per sr.		
Cost of 100 <i>Kuthalis</i> . . . . .	..	0 6 0	..	0 3 0	100
Clay	1 2 0	0 3 9	0 6 0	0 1 3	200
	per cart of 8 mds.		per cart of 8 mds.		
Tun	0 2 0	0 3 0	0 1 4	0 2 0	50
	per sr.		per sr.		
Oil	1 4 0	0 3 0	0 6 6	0 1 3	207.7
	per sr.		per sr.		
Pindol	1 0 0	0 1 0	0 2 0	0 0 2	700
	per md.		per md.		
Bhusa	4 0 0	0 4 0	0 8 0	0 0 6	700
	per md.		per md.		
Firewood 3 mds. (<i>sal</i>)	1 4 0	3 12 0	0 8 0	1 8 0	150
	per md. (control)		per md.		
Borax $\frac{1}{2}$ sr.	2 0 0	0 8 0	0 5 0	0 1 3	540
	per sr.		per sr.		
Lead $\frac{1}{2}$ sr.	2 8 0	0 10 0	0 5 0	0 1 3	700
	per sr.		per sr.		
Kamp . . . . .	..	0 1 0	..	0 0 3	300
Water carrier . . . . .	..	0 1 0	..	0 0 6	100
Incidence of cost and repairs of tools. . . . .	..	0 3 0	..	0 1 3	540
House rent . . . . .	..	0 1 0	..	0 1 0	Nil.
Tobacco $\frac{1}{2}$ sr.	0 10 0	0 5 0	0 4 0	0 2 0	150
	per sr.		per sr.		
Total cost excluding wages . . . . .	..	116 7 6	..	18 5 2	535.6
<i>Wages</i>					
Parawala	Per 100	1 14 0	Per 100	1 1 6	71.4
Taiyariwala	Do.	2 0 6	Do.	1 2 9	73.3
Bhattiwala	Do.	1 4 0	Do.	0 10 0	100

Items	Current		Pre-war		Increase per cent
	Rate	Price	Rate	Price	
<i>Wages—(concl'd.)</i>					
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
<i>Mitti safaiwala</i>	Per 100	0 3 0	Per 100	0 2 0	50
<i>Ragaraiya</i>	Do.	1 0 0	Do.	0 8 0	100
<i>Chhilaiya</i>	Do.	2 8 0	Do.	1 4 0	100
<i>Khinchaiya</i>	Do.	2 4 0	Do.	1 2 0	100
Total Wages .. ..	..	11 1 6	..	5 14 3	88.3
<i>Karkhanadar's</i> total cost of production.	..	127 9 0	..	24 3 5	426.8
<i>Karkhanadar's</i> selling price ..	..	130 1 3	..	24 9 9	428.6
<i>Karkhanadar's</i> margin of profit ..	..	2 8 3	..	0 6 4	..
<i>Dealer's cost of manufacture of 100 brass spoons.</i>					
<i>Weight of the finished product—1 sr. 9 chh.</i>					
<i>Weight of the raw material—2 srs.</i>					
Raw material 2 srs.	₹ 3 0 per sr.	6 6 0	0 8 0 per sr.	1 0 0	537.5
<i>Batta</i> (remunerations for <i>Dhalai</i> and <i>Ragarai</i>).	1 8 0 per sr.	2 5 6	0 12 0 per sr.	1 2 9	50
Stamping and finishing ..	Per 100	0 2 3	Per 100	0 1 3	80
<i>Kalai</i> (<i>hath ki</i>)	Do.	0 12 0	Do.	0 6 0	100
<i>Kathai</i>	Do.	0 14 0	Do.	0 7 0	100
<i>Chhilai</i>	Do.	0 5 0	Do.	0 4 0	25
Packing etc.	Do.	0 10 0	Do.	0 2 6	300
Dealer's cost of manufacture	..	11 6 9	..	3 7 6	229.3
Selling price	0 2 0 per spoon	12 8 0	0 0 7½ per spoon	3 14 6	220
Dealer's margin of profit ..	..	1 1 3	..	0 7 0	..

Hours of Work

73. The reduction of hours of work has been organised—labour's chief remedy for unemployment. Excessive hours of work break down health. Reduction in working hours means increase in efficiency and output per hour. This is all the more so in small scale and cottage industries where speed depends mainly on human factor and not machine. Unfortunately, in the Brassware Industry of Moradabad the worker himself is anxious to put in excessive hours of work to increase his daily earnings

on piece rate. During busy season—a month before *Divali* (a Hindu festival on which it is customary among Hindus to buy brasswares) and at the approach of the marriage season, the worker over exerts his muscles to handle as many vessels in a day, regardless of the fact that this practice in the long run means deterioration of efficiency, as also the daily output. Longer hours do not mean the greater output in the long run. As a matter of fact the Law of Diminishing Returns operates nowhere more strikingly than in regard to hours of labour. Due to over-exertion a worker may find himself too exhausted to carry on the work next day. A reduction of hours increases hourly output and decreases absence and accidents per hour. In fact long hours of work are certainly chiefly responsible for the frequent absenteeism in the Brassware Industry of Moradabad.

74. The report of the Royal Commission of Labour mentions that “allowing a half holiday on Friday, the normal weekly working time is 65 hours, i.e., 10 hours a day”. The average working time is still 10 hours a day ranging between 6.00 a.m. and 6.00 p.m., except in electroplating works ; but Friday is now observed as a full weekly holiday instead of half. There is a no fixed time of rest. The worker or the artisan is free to take rest whenever he likes. Usually he snatches some time from his working hours to take his mid-day meals at the working place. In electroplating works, some of which are also registered factories, the working time is from 9.00 a.m. to 7.00 p.m. with an hour’s rest from 1.00 p.m. to 2.00 p.m., i.e., 9 hours. For women workers, aside their weaker physique, the “long day” is especially onerous because of the double burden of domestic duties and wage work. Fortunately most of the women artisans in the industry work as “part-timers” at home for 2 to 4 hours whenever they are free from the domestic duties. But there are also women who have no other source of livelihood and who have, therefore, to work for “full time”, i.e., 8 hours a day. Making of *Kuthali* is usually done by such women.

75. Though it is the health danger of long hours which is most often emphasised, the lack of leisure for family life, for recreation, for all requirements of citizenship, is no less an evil. Tired and exhausted after 10 to 12 hours of continuous strenuous labour, the worker comes home a picture of misery. He must go to work again on the next day, and the intervening rest period is not sufficient for him to recover from the excessive fatigue. Neither does he find time nor is he in a mood to enjoy the family or social life.

76. *Average working days in a month*—As already stated, frequent absenteeism is a regular feature of the industry. The nature of work (notably in *Karkhanas* of *Darza* and *Para* casting) is such that even if one category of worker is absent many others become idle with him. Long hours and strenuous nature of work are also responsible for reduced number of working days in a month. Recently there has been a paucity of work owing to the shortage of essential raw materials, notably zinc. This, however, is only a war-time feature, and it may be hoped that this is only of a temporary nature. Friday is observed as a weekly holiday as all the workers and *karkhanadars* are Muslims, except *kalsa*-manufacturers who are Hindu *thatheras* and who observe *Ekadashi* (the eleventh day of a fortnight in Hindu calendar) as holiday. All important Muslim festivals, for example *Id*, *Moharrum*, *Shab-i-Barat*, etc. are observed as holidays. Taking all these factors into account, it may be safely asserted with accuracy that the average number of working days in a month is 20. No holiday

or leave is granted with pay. In fact as piece rate wages are prevalent, the question of holidays or leave with pay does not arise.

77. *Overtime*—Overtime is paid to workers in electroplating works according to factory laws. Otherwise, in other branches of the industry, the system of payment of overtime does not exist, simply because there are no fixed hours of work.

Working conditions

78. Safety and health in work places are of vital importance, particularly when an individual labourer working in a *karkhana*, cannot control the physical conditions under which he works. The problem, though not so serious as found in factories operated by power, is yet not so simple as might be expected in a cottage industry.

79. Electroplating works are operated by electric power. Factory laws operate in some of them. Some of the conditions here call for a serious consideration. The luster, the pearless powder and the material with which bough is prepared—all these, just when the vessel is pressed against the moving bough, cut out in pieces and are inhaled by the polisher. Evidently this must affect his lungs and consequently his health. The labourers turn blue and black when they finish their day's work. At the close of the day they clean themselves. Again in plating work the plater seldom uses the leather or rubber gloves while dipping his hands into the tank containing acidic substances. It is noted that the hands of most of the electroplaters have become bad. This may be cited as an instance of "occupational disease". Belting, shafting and gearing are left unguarded.

80. A *karkhana* carrying on *para* casting presents an uninviting appearance. The walls are sooty black with cobwebs in corners and ceiling. Heaps of clay used for making moulds and broken pieces of used moulds remain lying in the premises. The place of work is generally a portion of the house occupied by the *karkhanadar* for residential purposes. The floor is invariably *kachcha* and the roof is tiled. Either there is no latrine in the house, or if there is one, it is not available to the workers as it is meant for the use of the *Karkhanadar* and his family. Generally the *karkhanas* have no waterpipe connection. A provision for drinking water is generally made in *karkhanas*. Workers are also provided tobacco for smoking during working time by the *karkhanadar*. The work of the *bhattiwala*, who works on the oven to heat the *paras*, is really an ordeal during the hot months.

81. *Darza* casting *karkhanas* are comparatively cleaner—but only a bit—inasmuch as it is a smaller place and there are no heaps of clay and broken pieces of used moulds. Otherwise the general standards of sanitation, cleanliness, and repair of buildings and other working conditions are almost identical. Here too the labourer working on the furnace finds his work very trying during summer. A *Darza* casting *karkhana* may either be a small room, or a tiled verandah or even an open space. Hot wind, dust, and dirt may find a free access to such a place of work.

82. "Life without industry is guilt, and industry without art is brutality,.....but beautiful art can only be produced by people who have beautiful things about them and leisure to look at them," so says Ruskin. Judged from this standard an engraver or lacquerer is certainly handicapped. Still the conditions under which he works may, compared with the conditions obtaining elsewhere, be said to be ideal. Here the work is done

under circumstances so different from those in *karkhanas* and power operated electroplating works. There is none of the noise, vibration, stuffiness, and clay heaps, and nothing to rack the nerves or fatigue the mind. With only a few handy tools the artisan sits on his work at a place which he finds most convenient either in his own house or in a shop. The nature of work itself is light and pleasant, but requires the highest degree of skill and efficiency.

Advance system and indebtedness

83. Before employment, the worker gets an interest free advance sum of money from the *karkhanadar*. The amount varies from Rs.50 to Rs.400 according to the nature of work and efficiency of the worker. The payment of advance is made by the *karkhanadar* to ensure the services of a worker in his *karkhana*. So long as a sum is outstanding, the worker cannot leave the job and join elsewhere. It is understood that the re-payment of the money taken in advance would take the form of instalments to be deducted from the labourer's weekly or monthly earnings. Nothing, like this, however, takes place. The worker cannot afford any deduction from his marginal earnings. Nor is the *karkhanadar* himself too keen to recover his money, as he finds that to keep the worker bound by the condition of advance is more in his interest than the recovery of advance itself. On the other hand, the worker may sometimes require further loans on account of illness or social ceremonies. The vicious spiral expands and the indebtedness of the worker goes on mounting. Once a debtor he is always a debtor. If sometimes another *karkhanadar* wishes to have the services of a worker already employed in a *karkhana* on advance money, he must first repay to the first employer the amount still outstanding against the worker, and also pay a further advance to the worker. Petty *karkhanadars*, in their turn as also the artisans having dealings direct with the dealer, get advances from the dealer.

84. The advance system is a curse for the brassware industry at Moradabad as also for so many other cottage and small scale industries. It is chiefly responsible for the high amount of indebtedness prevalent among people engaged in the industry. The money-lender is usually the dealer himself, who thus financially dominates the whole industry, and squeezes out all the profits for himself leaving the other more important parties, namely the *karkhanadar*, worker and artisan in a misery and a hand-to-mouth living. The average labourer's mentality is such that indebtedness tends to be chronic, and to be regarded in the nature of things. He has innate capacity for getting into debts and remaining in it.

Women and minors

85. More and more women and children are coming to be employed in the industry. This is due to the fact that the worker increasingly feels the necessity of supplementing his income. The fillip given to the manufacture of spoon and fork owing to the war orders is also one of the reasons, as the work of scraping and finishing (*kathai*) of spoons and forks is mostly done by women. Other works done by women are the making of *kuthalis* for *para* casting, lacquering (to a small extent), and scraping and finishing of certain other articles. The nature of their work is generally light and not taxing. Woman labour works entirely as independent artisan at home. They work during their spare time and are helped by the children as well. Their normal working time is 2 to 4 hours. Women who have no source of livelihood, such as widows, work whole time, i.e., for 8 hours a day.

86. Children, when not sufficiently grown up, help their parents in their work at home. In almost all *karkhanas* some minors are found working as *Galaiya* (in *Darza* Casting), or helping generally a *bhattiwala* or *taiyariwala* (in *para* casting), or the shape maker (in the process of beating and hammering). Children are also seen working as engravers and *Ulchaiyas*. Adolescents work as full-fledged workers in many capacities.

Standard of living

87. Standard of living is more often than not conditioned by the size of a family and its income. Thus the comparative study of the standard of living of an average family in some of the cities is afforded by the following table:

	Bombay	Ahm da- bad	Sholapur	Madras	Cawnpore
Average size of the family ..	3.7	4.05	4.57	6.03	3.15
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Average income	50 1 7	46 5 0	39 14 10	37 5 11	24 1 5

88. Unfortunately similar figures for an average family of workers in the Brassware Industry of Mordabad are not available. But it can be asserted that the conditions here are worse than in any of the above cities. Most of the workers, artisans and petty *karkhanadars* lead a hand-to-mouth living. They have ill-ventilated *kachcha* house with tiled roofs. Many houses have no latrine; and in some cases there are common latrines. Many *karkhanadars* and a few workers also own their own houses. Sanitation, cleanliness and drainage are far from satisfactory. Savings are unknown to the labourers and the indebtedness is high. They have extravagant habits, and care little for the future. If a worker has ready money, he would rather spend it on cinema, or costly garments, or even social evils like prostitution and drink, rather than save it for the need that may arise in future. A portion of income of a labourer is also swallowed up in gambling, kite flying, bird fights and repayment of debts if possible. The workers and most of the *karkhanadars* are illiterate. Education of the young ones is sadly neglected.

89. Increase in wages has been in no proportion to the increase in the general level of prices. The increase in the prices of some of the more important commodities is as follows:

Wheat ..	233%	Mustard oil ..	200%	Kerosene oil ..	100%
Rice ..	433%	Potato ..	150%	Tobacco ..	150%
<i>Dal Urd</i> ..	256%	Onion* ..	700%	<i>Pan</i> ..	300%
<i>Ghee</i> ..	200%	Mutton ..	200%	<i>Supari</i> ..	400%
Sugar ..	60%	Salt ..	20%	<i>Dhobi</i> ..	100%
<i>Gur</i> ..	133%	Firewood ..	250%	Barber ..	100%

*Increase only seasonal.

90. Out of 18 commodities, 16 show an increase of more than 100 per cent., ten of which again registering more than 200 per cent. But the

increase in wages has been from 50 per cent. to 100 per cent. Ordinarily there has been no material increase in house rent. An increase in house rent may occur only when an old tenant vacates and a new one occupies the house. This seldom happens in the case of labourer or *karkhanadar*, as entire labour engaged in the Brassware Industry is local and not migratory in character. Hence the house rent has almost remained stationary.

Dismissal

91. It seldom happens that a worker may have to be dismissed from a *karkhana*. In fact efficient workers are always in demand. Dismissal can take place only on disciplinary grounds, or as retrenchment on account of paucity of work. As already stated elsewhere, the relations between the workers and *karkhanadars* are such that the question of observing discipline in a *karkhana* does not arise at all. Class antagonism between a *karkhanadar* and his worker is almost absent. Hence there are no chances of dismissal on this account. Nor does the paucity of work ever results in the retrenchment of the working hands in a *karkhana*. If there is less work in a *karkhana* each worker gets less to do. Even if at any time there is no work, the *karkhana* may have to remain closed. Dismissal of workers does not exist as a problem in the industry.

Trade Union

92. It is rather surprising that a community of 13,000 labourers in the industry, all concentrated in one city, has no association worth the name. There are a few associations of the *karkhanadars* to safeguard their interest against the dealer. The dealers also have an association of their own. But the workers and the artisans, who need the safeguarding of their interests the most, are without any trade union. Unions of the workers and artisans based on profession are urgently needed in the industry. That is to say separate unions should be formed for different categories of workers. Thus there should be unions of *siah qalam* workers, *para* casting workers, *qalaigars*, engravers, *thali*-manufacturers, electroplating workers and so on. The remedy for the unhealthy type of competition that has come to stay among such artisans as *qalaigars*, engravers, lacquerers, etc., lies in the formation of such unions.

Welfare Work

93. Welfare work is unknown in the industry. The term "welfare" is used to cover a number of activities and institutions for promoting the well-being of the workers. The complex problems of industrial labour, whether in large scale or small scale or cottage industries, are such that a scheme of welfare work is almost indispensable. The object and scope of welfare work are many sided. In the first place is the recreational side of it which has free cinema, radio, dramatic clubs, music parties, etc. in its programme. An idle mind is said to be the devil's workshop; and consequently it is a matter of concern to an employer or the state to see how the time of the wage earner outside his working hours is spent. A recreational welfare programme affords the best engagement of workers' leisure and acts as a diversion from such social evils as drink, prostitution, and gambling, or the idle entertainments as bird fight, etc. Other welfare activities consist in the provision of free medical aid, maternity and child welfare activities, day and night schools, athletic clubs, libraries and reading rooms, suitable

dwelling, and improvement of sanitation, comfort and safety of the workers. The cumulative effect of all these welfare activities is the increase in the efficiency of the labour, and fewer class conflicts.

94. Welfare work may be undertaken by employers, public and semi-public bodies like municipality, private organizations and the Government. None of these agencies has ever so far undertaken the welfare work for the workers in the industry. It is beyond doubt of paramount importance that a community of 20,000 workers with women and children also in its fold must be provided with such ordinary amenities as free medical aid, maternity and child welfare scheme, and recreation, i.e., in short an elaborate welfare programme.

Industrial Education

95. As already stated elsewhere, children, when regarded sufficiently grown up to learn work, begin working with their elders and relatives working as independent artisans or wage earners in a *karkhana*. This is no doubt good inasmuch as the taught learns his work more easily in a familiar and homely surrounding, and the hereditary skill is passed on to the coming generations. But this system has also its own disadvantages. The development of the industry on modern line is seriously hampered. New ideas do not come to be introduced, and only old, hackneyed things are repeated. Consequently the industry fails to cater for the new and changing taste. This is also one of the reasons for the decline in the demand for the engraving and *siah qalam* work. The method of training in a *karkhana* is also not systematic and scientific. The "S. S. Khatri School of Commerce and Industry" at Moradabad imparts free training. The course here includes, among others, the electroplating and *siah qalam*. The advantages of training in school over apprenticeship in a *karkhana* are that here a boy goes through all the processes of brassware manufacture, learns the manufacturing of greater number and kinds of wares with scientific method, and comes across new designs and ideas. But few of the local artisans, *karkhanadars* and workers care to send their children to the school, as every artisan's house or a *karkhana* is itself a school where, side by side with training, the boy is also a helping hand and bread winner. It was for these reasons that another industrial school started by the Moradabad Municipality in 1922 had to be closed down.

APPENDIX I

Prices of Raw Materials

Raw material	Quantity	Price		Increase
		Current	Pre-war	
		Rs. a. p.	Rs. a. p.	Per cent.
<i>Tora</i> (Bharat)	Per seer ..	3 3 0	0 8 0	537·5
Zinc	Per maund ..	175 0 0	13 0 0	1246
Tin	Per seer ..	32 0 0	4 0 0	700
Lead	Do. ..	2 8 0	0 5 0	700
Borax.	Do. ..	2 0 0	0 5 0	540
Brass sheets (practically out of market).	Do. ..	7 8 0	0 14 0	757·1
<i>Chakka</i>	Do. ..	4 0 0	0 12 0 (not used).	333·3
Cupro nickel scrap (Government supply).	Per cwt. ..	75 0 0	not available.	
(Open market).	Per maund ..	120 0 0		
Copper	Per seer ..	8 0 0	0 14 0	814·3
German silver sheet	Do. ..	not available	3 0 0	
<i>Ral</i> (lac)	Do. ..	2 0 0	0 5 0	540
Clay	Per cart of 8 maunds	1 2 0	0 6 0	200
Oil	Per seer ..	1 4 0	0 6 6	207·7
<i>Pindol</i>	Per maund ..	1 0 0	0 2 0	700
<i>Bhusa</i>	Do. ..	4 0 0	0 8 0	700
Firewood (<i>sal</i>) (control)	Do. ..	1 4 0	0 8 0	150
<i>Tun</i>	Per seer ..	0 2 0	0 1 4	50
Charcoal	Per maund ..	3 2 0 (control)	0 8 0	525
Delhi clay	Per seer ..	0 4 0	0 0 9	433·3
Black clay	Do. ..	1 4 0	0 2 6	700
Aluminium	Do. ..	4 0 0	0 6 0	966·7
Used lubricant	Do. ..	7 0 0	1 8 0	367
String		0 5 0	0 1 0	400
<i>Kharbar</i>	Per lb. ..	8 0 0 (Not used now)	0 14 0	814
Drill in place of <i>kharbar</i>	Do. ..	1 8 0	(Not used)	

Raw material	Quantity	Price		Increase Per cent
		Current Rs. a. p.	Pre-war Rs. a. p.	
Lustre .. { Foreign ..	Per bar ..	5 0 0	0 8 0	900
.. { Desi ..	Do. ..	1 0 0	Not available	
Fearless	Per packet of 2 lbs.	18 0 0	1 6 0	1209.1
Lal bar .. { Foreign ..	Per bar ..	11 0 0	1 6 0	600
.. { Desi ..	Do. ..	2 0 0	Not available	..
Kerosene oil	Per bottle ..	0 4 6	0 1 9	57.1
Used blankets	Per seer ..	2 0 0	0 5 4	500
Potassium C ynide	Per lb. ..	6 0 0	2 6 0	52.6

APPENDIX 2

Daily earning

Artisan	Daily earnings		Increase
	Current	Pre-war	
1	2	3	4
<i>Paimana manufacturers (darza)</i>			
	Rs. a. p.	Rs. a. p.	Per cent.
<i>Dhalaiya</i>	1 6 0	0 11 0	100
<i>Galaiya</i>	0 4 0	0 2 0	100
<i>Khinchaiya-cum-chhilaiya</i>	1 8 0	0 12 0	100
<i>Gilas manufacturers—(Para casting) Gilas no. 3</i>			
<i>Para maker</i>	1 8 0	0 14 0	71.4
<i>Taiyariwala</i>	1 10 0	0 15 0	73.3
<i>Bhattiwala</i>	1 8 0	0 12 0	100
<i>Mitti-safai</i>	0 15 0	0 10 0	50
<i>Ragaraiya</i>	1 8 0	0 12 0	100
<i>Chhilaiya</i>	1 11 0	0 13 6	100
<i>Khinchaiya</i>	1 8 0	0 12 0	100
<i>Niariya</i>	1 0 0	0 8 0	100
<i>Lota manufacturers—(Para casting) Lota no. 6</i>			
<i>Para maker</i>	1 8 0	0 14 0	71.4
<i>Taiyariwala</i>	1 10 0	0 15 0	73.3
<i>Bhattiwala</i>	1 8 0	0 12 0	100
<i>Mittisafai</i>	0 15 0	0 10 0	50
<i>Ragaraiya</i>	1 8 0	0 12 0	100
<i>Chhilaiya</i>	2 4 0	1 2 0	100
<i>Khinchaiya</i>	1 2 0	0 9 0	100
<i>Thali makers (Beating and hammering process) Thali no. 9</i>			
<i>Shape-maker</i>	1 14 0	0 13 6	122.2
<i>Chhilaiya</i>	1 14 0	0 12 6	140
<i>Powder Pot manufacturers (Darza casting) Pot no. 3</i>			
<i>Dhalaiya (36 pots)</i>	1 5 0	0 9 9	115.4
<i>Chhilaiya (24 pots)</i>	1 8 0	0 12 0	100
<i>Galaiya</i>	0 4 0	0 2 6	60

Daily earning—(contd.)

Artisan	Daily earning		Increase
	Current	Pre-war	
1	2	3	4
	Rs. a. p.	Rs. a. p.	per cent.
<i>Tea Set Manufacturers (Darza) Hafiz Sajjad Husain's Karkhana</i>			
<i>Dhalaiya</i>	2 0 0	1 0 0	100
	to	to	
<i>Ragaraiya</i>	3 0 0	1 8 0	100
	1 8 0	0 12 0	
<i>Chhilaiya</i>	1 8 0	0 12 0	100
<i>Jhalaiya</i>	1 8 0	0 12 0	100
<i>Kalsa Manufacturers (Kalsa no. 10)</i>			
Shape-maker	1 12 0	0 14 0	100
<i>Chhilaiya</i>	1 12 0	0 14 0	100
<i>Electroplating works (Monthly wages)</i>			
Plater	50 0 0	30 0 0	66.7
Polisher	25 0 0	15 0 0	66.7
<i>Khariyawala</i>	8 0 0	4 0 0	100
<i>Bandhawala</i>	15 0 0	8 0 0	87
<i>Spoon Manufacturers</i>			
<i>Dhalaiya</i>	1 8 0	1 0 0	50
<i>Galaiya</i>	0 12 0	0 6 0	100
<i>Ragaraiya</i>	1 8 0	1 0 0	50
<i>Dhabba-chhilaiya</i>	0 12 0	0 6 0	100
<i>Stamper</i>	1 8 0	0 15 0	60
<i>Kalaiyar (Hath ki Qalai)</i>	1 12 0	1 0 0	75
<i>Tapaiya</i>	1 4 0	0 11 6	73.2
<i>Golchi Manufacturers—Darza (Golchi no. 1)</i>			
<i>Dhalaiya (66 Golchis)</i>	1 8 0	1 0 0	50
<i>Galaiya</i>	0 12 0	0 6 0	100
<i>Ragaraiya (90 Golchis)</i>	1 8 0	1 0 0	50
* <i>Kathaiwala (1 woman working 4 hours a day)</i>	0 6 0	0 3 7½	65.5

*Wages for 100 Golchis are Rs.2-6 (current) and Re.1 (pre-war). From this should be subtracted the cost of raw material and incidence of tools.

	Peerless	Kerosene oil	Used Kambal	Tools	Total
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Current	0 10 0	0 1 0	0 2 0	0 1 0	0 14 0
Pre-war	0 0 8	0 0 5	0 0 4	0 0 1	0 1 6

Thus the real wages for 100 Golchis are Re.1-8 current and Re.0-14-6 pre-war.

Daily earning—(contd.)

Artisan	Daily earnings		Increase
	Current	Pre-war	
1	2	3	4
	Rs. a. p.	Rs. a. p.	per cent.
<i>Flower Pot Manufacturers—Darza (Flower Pot no. 7)</i>			
<i>Dhalaiya</i> (24 pots)	1 2 0	0 12 0	50
<i>Galaiya</i>	0 4 0	0 2 0	100
<i>Chhilaiya</i> (4 dozen pots)	1 8 0	0 12 0	100
* <i>Jhalaiya</i> (4 dozen pots)	1 4 0	0 12 0	66.7
<i>Miscellaneous</i>			
<i>Jhalaiya</i>	1 5 0	0 11 6	82.6
*Spoon-scraper—25 spoons (a woman working 3½ hours)	0 3 0	0 1 9	71.4
<i>Kathaiwala—Gilas</i> no. 3 (by machinery run by electric motor) 9 hours work.	1 4 0	0 10 0	100
<i>Kuthali-maker</i> (a woman working 8 hours a day)	0 4 0	0 2 9	45.5
Engraver— <i>Nok</i> work (ordinary work in 15 <i>gilases</i> in 8 hours at Re.0-1-6 per <i>gilas</i>).	1 6 6	0 11 3	100
Engraver— <i>Nok</i> work (more elaborate work in 10 <i>gilases</i> in 8 hours at Re.0-2-3 per <i>gilas</i>).	1 6 6	0 11 3	100
Engraver— <i>Nakkashi</i> (fine <i>Nakkashi</i> work on <i>pandan</i> lids)	1 8 0	1 0 0	50
<i>Ulchaiya</i> (<i>Khudai</i> work on lids of perfumery cases) ..	1 6 6	0 15 0	50
<i>Ulchaiya</i> (<i>Khudai</i> work on trays)	1 12 0	0 14 0	100
Engraver (<i>Sumba</i> work)	1 0 0	0 8 0	100
<i>Rang Bharaiya</i> (Working for 8 hours)	1 0 0 to 1 8 0	0 10 0 to 0 12 0	60 to 100

**Jhalaiya* here is not a casual worker, repairing the defective castings, but a regular one, soldering two parts of the flower pot each of which is a separate casting. He is paid at 3 annas per dozen now and 4 annas per dozen in pre-war days. But he uses his own raw material (brass, tin, zinc, borax) and tools and pays 6 annas per day to *Galaiya* (boy apprentice)—(3 annas in pre-war days). Deducting 6 annas per day as cost of raw material and incidence tools (1 anna per day in pre-war days) for 4 dozen articles the real wages come to what is shown in the table.

Wages in cash for scraping 100 spoons are 5 annas (current) and 4 annas (pre-war) plus 5 chh. of scrapings, the price of which is 7 annas 6 pies (current) and 3 annas (pre-war).

APPENDIX 3
Cost of manufacture

Item	Current		Pre-war		Increase
	Rate	Price	Rate	Price	
1	2	3	4	5	6
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	per cent.
<i>Dealer's cost of manufacture of 100 gilases no. 3. Weight :—Raw material 29 seers 5 chhataks ; finished goods 23 seers 7 chhataks.</i>					
Cost of 100 gilases	4 12 0	111 5 3	0 4 0	5 13 9	1,800
Manufacturing charges	0 3 0 per gilasa.	18 12 0	0 3 0 per gilasa.	18 12 0	Nil.
Polishing 100 gilases	4 2 0 per 100	4 2 0	1 5 0 per 100	1 5 0	214.3
Kathai 100 gilases	3 0 0 per 100	3 0 0	1 4 0 per 100	1 4 0	140
Total cost of 100 gilases .. .. .	..	137 3 3	..	27 2 9	404.9
Selling price	1 6 6 per gilasa.	140 10 0	0 4 6 per gilasa.	28 2 0	400
Dealer's profit .. .. .	..	3 6 9	..	0 15 3	..
<i>Dealer's cost of manufacture of 100 lotas no. 6. Weight of 100 lotas—38 seers 8 chhataks ; Raw material (tora)—48 seers 2 chhataks.</i>					
Cost of 100 lotas	4 12 0 per seer.	182 14 0	0 4 0 per seer.	9 10 0	1,800
Manufacturing charges	0 6 0 per lota.	37 8 0	0 6 0 per lota.	37 8 0	Nil
Polishing 100 lotas	6 14 0 per 100 lotas.	6 14 0	2 3 0 per 100 lotas.	2 3 0	214.3
Kathai 100 lotas	4 0 0 per 100	4 0 0	2 0 0 per 100	2 0 0	100
Total cost .. .. .	..	231 4 0	..	51 5 0	350.7
Selling price	2 7 0 per lota.	243 12 0	0 8 6 per lota.	53 2 0	358.8
Dealer's margin .. .. .	..	12 8 0	..	1 13 0	

Cost of manufacture—(contd.)

Item	Current		Pre-war		Increase
	Rate	Price	Rate	Price	
1	2	3	4	5	6
<i>Dealer's cost of manufacture of 9 thalis no. 9</i>	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Per cent.
Brass sheet 6 seers	Not available.	..	0 14 0	5 4 0	..
Chakka 6 seer	4 0 0 per seer.	24 0 0	..	Not used	..
Polishing and finishing 9 thalis ..	..	2 12 0	..	0 14 0	214·3
Shaping charges 9 thalis .. ..	..	2 0 0	..	0 14 0	128·6
Scraping charges 9 thalis .. ..	..	2 0 0	..	0 14 0	128·6
Total .. ..	..	30 12 0	..	7 14 0	..
Minus the cost of scrapings and cuttings.	½ seers at 3 0 0 per seer.	2 4 0	1/2 seer 0 8 0 per seer.	0 4 0	..
Dealer's cost of production .. ..	..	28 8 0	..	7 10 0	273·8
Selling price 9 thalis	5 seers at 6 12 0 per seer.	33 12 0	5½ seers at 1 8 0 per seer.	7 14 0	328·6
Dealer's margin .. ..	..	5 4 0	..	0 4 0	..
<i>Dealer's cost of manufacture of 100 brass spoons. Weight of the finished product—1 seer 9 chhataks. Raw material—2 seers.</i>					
Raw material 2 seers.. ..	3 3 0 per seer.	6 6 0	0 8 0 per seer.	1 0 0	537·5
Batta (remunerations for dhalai and ragarai).	1 8 0 per seer.	2 5 6	0 12 0 per seer.	1 2 9	50
Stamping and finishing	per 100	0 2 3	per 100	0 1 3	80
Qalai (hath ki) .. ..	.. ..	0 12 0	.. ..	0 6 0	100
Rathai .. ..	.. ..	0 14 0	.. ..	0 7 0	100
Chhilai .. ..	.. ..	0 5 0	.. ..	0 4 0	25
Packing, etc. .. ..	.. ..	0 10 0	.. ..	0 2 6	300
Dealer's cost of manufacture .. ..	..	11 6 9	..	3 7 6	229·3
Selling price	0 2 0 per spoon.	12 8 0	0 0 7½ per spoon.	3 14 6	220
Dealer's margin of profit .. ..	..	1 1 3	..	0 7 0	..

Cost of manufacture—(contd.)

Item	Current		Pre-war		Increase
	Rate	Price	Rate	Price	per cent.
(1)	(2)	(3)	(4)	(5)	(6)
<i>Karkhanadar's cost of manufacture of 100 Golchis No. 1. Weight: 100 Golchis—21 srs. Raw material used—25 srs. 8 chh.</i>		Rs. a. p.		Rs. a. p.	Per cent.
Oil for masala ..		1 4 0		0 4 9	321.1
String and Ghariya ..		0 1 0		0 0 3	300
Aluminium 1/5 sr. ..		0 13 0		0 1 3	966.7
Charcoal 20 srs. (sal) ..	3 2 0 per md.	1 9 0	0 8 0 per md.	0 4 0	525
Incidence of cost of files		0 2 9		0 0 6	450
Incidence of repairs of files.		0 2 0		0 1 0	100
Incidence of darza moulds, chakkar and other tools.		0 1 0		0 0 3	300
House rent, etc. ..		0 2 0		0 2 0	Nil
Wages to Dhalaiya ..	Per 100 ..	2 4 0	per 100	1 8 0	50
Wages to Galaiya ..	Do. ..	0 12 0	Do. ..	0 6 0	100
Wages to Chhilaiya ..	Do. ..	2 4 0	Do. ..	1 8 0	50
Total ..		9 6 9		4 4 0	
Raw material lost in the process of heating (2½ srs).	3 3 0 per sr.	7 15 6	0 8 0 per sr.	1 4 0	
Loss on account of filings, 2 srs. of filings.	Filing sold at 3 srs. per Re.	5 11 9		0 15 0	
<i>Karkhanadar's cost of manufacture of 100 Golchis.</i>		23 2 0		6 7 0	222.8
<i>Karkhanadar's batta</i> ..	1 4 0 per sr.	26 4 0			
<i>Karkhandar's margin of profit on 100 Golchis.</i>		3 2 0			

Cost of manufacture—(contd.)

Item	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
(1)	(2)	(3)	(4)	(5)	(6)
<i>Karkhanadar's cost of manufacture of 100 gilasas No. 3. Weight of the finished product—23 srs. 7 chh. Raw material (tora)—29 srs. 5 chhs.</i>	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Tora 29 srs. 5 chh ..	3 3 0	93 7 0	0 8 0	14 10 6	537·5
Zinc 3 srs. 10 chh. ..	per sr. 4 6 0	15 13 9	per sr. 0 5 3	1 3 0	1233·3
Cost of 100 <i>Kuthalis</i>	per sr.	0 6 0	per sr.	0 3 0	100
Clay	1 2 0 per cart of 8 mds.	0 3 9	0 6 0 per cart of 8 mds.	0 1 3	200
<i>Tun</i>	0 2 0 per sr.	0 3 0	0 1 4 per sr.	0 2 0	50
Oil	1 4 0 per sr.	0 3 0	0 6 6 per sr.	0 1 3	207·7
<i>Pindol</i>	1 0 0 per md.	0 1 0	0 2 0 per md.	0 0 2	700
<i>Bhusa</i>	4 0 0 per md.	0 4 0	0 8 0 per md.	0 0 6	700
Firewood 3 mds. (<i>sal</i>)	1 4 0 per md. (control).	3 12 0	0 8 0 per md.	1 8 0	150
Borax $\frac{1}{2}$ sr. ..	2 0 0 per sr.	0 8 0	0 5 0 per sr.	0 1 3	540
Lead $\frac{1}{2}$ sr. ..	2 8 0 per sr.	0 10 0	0 5 0 per sr.	0 1 3	700
<i>Kamp</i>		0 1 0		0 0 3	300
Water carrier ..		0 1 0		0 0 6	100
Incidence of cost and repairs of tools.		0 8 0		0 1 3	540
House rent ..		0 1 0		0 1 0	Nil.
Tobacco $\frac{1}{2}$ sr. ..	0 10 0 per sr.	0 5 0	0 4 0 per sr.	0 2 0	150
Total cost excluding wages.		116 7 6		18 5 2	535·6

Cost of manufacture—(contd.)

Item	Current		Pre-war		Increase
	Rate	Price	Rate	Price	per cent.
(1)	(2)	(3)	(4)	(5)	(6)
Wages.		Rs. s. p.		Rs. s. p.	
<i>Parawala</i> ..	Per 100	1 14 0	Per 100	1 1 6	71.4
<i>Taiyari wala</i> ..	Do. ..	2 0 6	Do. ..	1 2 9	73.3
<i>Bhatti-wala</i> ..	Do. ..	1 4 0	Do. ..	0 10 0	100
<i>Mittisafaiwala</i> ..	Do. ..	0 3 0	Do. ..	0 2 0	50
<i>Ragaraiya</i> ..	Do. ..	1 0 0	Do. ..	0 8 0	100
<i>Chhilaiya</i> ..	Do. ..	2 8 0	Do. ..	1 4 0	100
<i>Khinchaiya</i> ..	Do. ..	2 4 0	Do. ..	1 2 0	100
Total wages ..		11 1 6		5 14 3	88.3
<i>Karkhanadar's total cost of production.</i>		127 9 0		24 3 5	426.8
<i>Karkhanadar's selling price</i>		130 1 3		24 9 9	428.6
<i>Karkhanadar's profit</i> ..		2 8 3		0 6 4	
<i>Karkhanadar's cost of manufacture of 12 Powder Pots No. 3.</i>					
<i>Tora</i> 3 srs. ..	3 3 0	9 9 0	0 8 0	1 8 0	537.5
<i>Zinc</i> 2 chh. ..	per sr. 4 6 0	0 9 0	per sr. 0 5 3	0 0 9	1233.3
<i>Incidence of tools</i> ..	per sr.	0 1 0	per sr.	0 0 3	300
<i>House rent</i> ..		0 0 6		0 0 6	Nil.
<i>Dhalaiya</i> ..		0 7 0		0 3 3	115.4
<i>Galaiya</i> ..		0 2 0		0 1 3	60
<i>Chhilaiya</i> ..		0 12 0		0 6 0	100
<i>Jhalaiya</i> (2 out of 12 pots need jhalai).		0 3 6		0 1 9	100
Cost of manufacture		11 12 0		2 5 9	398
Selling price ..	1 1 0 per pot.	12 12 0			
Profit ..		1 0 0			

Cost of manufacture—(concl'd.)

Item	Current		Pre-war		Increase per cent.
	Rate	Price	Rate	Price	
(1)	(2)	(3)	(4)	(5)	(6)
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
<i>Karkhanadar's cost of manufacture of 12 Paimanas No. 2. Weight of the finished product—15 chh. The raw materials—1 sr. 4½ chh.</i>					
*Tora 1 sr. 2 chh ..	3 3 0 per sr.	3 9 6	0 8 0 per sr.	0 9 0	537.5
*Zinc 2½ chh. ..	4 6 0 per sr.	0 11 0	0 5 3 per sr.	0 0 9	1233.3
Incidence of tools ..		0 1 0		0 0 3	300
Oil 1½ chh. ..		0 0 9		0 0 3	200
House rent ..		0 0 3		0 0 3	Nil
Jhalai (2 out of 12 pots)		0 3 0		0 1 6	100
Dhalaiya ..		0 7 6		0 3 9	100
Galaiya ..		0 1 6		0 0 9	100
Chhilaiya ..		0 9 0		0 4 6	100
Total ..		5 11 6		1 5 0	335.7
Selling price ..		6 6 0			
Profit ..		0 10 6			

*In all, 2½ chh. of Zinc and 1 sr. 5½ chh. of Tora are used. 3½ chh. of Tora are saved and can be used again. 5½ chh. are wasted.

APPENDIX 4

Retail prices of certain Commodities

Item	Basis of quotation	Current price	Pre-war price	Increase
1	2	3	4	5
		Rs. a. p.	R. a. p.	per cent.
Wheat	1sr. ..	0 5 4	0 1 7	233.3
Gram	" ..	0 4 0	0 1 5.4	175
Barley	" ..	0 2 11	0 1 2	154.5
Milk	" ..	0 6 6	0 2 8	143.8
Ghee	" ..	4 0 0	1 5 4	200
Sugar	" ..	0 8 6.4	0 5 4	60
Gur	" ..	0 2 8	0 1 0	133.3
Rice (Dalbadal)	" ..	0 10 8	0 2 0	433.3
Dal Urdi (Kali)	" ..	0 7 1.3	0 2 0	255.6
Dal Arhar	" ..	0 6 4.8	0 2 0	220
Dal Mung	" ..	0 7 1.3	0 2 8	166.7
Salt	" ..	0 1 7.2	0 1 4	20
Chillies	" ..	1 4 0	0 4 0	400
Mustard oil	" ..	1 0 0	0 5 4	200
Tea (Brooke Bond)	½ lb. ..	0 5 0	0 2 6	100
Potato	1 sr. ..	0 2 6	0 1 0	150
*Onion	" ..	1 0 0	0 2 0	700
Mutton	" ..	1 8 0	0 8 0	200
Fish	" ..	1 0 0	0 4 0	300
Jalebi	" ..	1 4 0	0 6 0	233.3
Barfi	" ..	1 4 0	0 8 0	150
Firewood (sal)	1 md. ..	2 0 0	0 9 1.7	250
Kerosene oil	1 bottle ..	0 4 6	0 2 3	100
Match box	1 doz. ..	0 9 0	0 1 6	500
Tobacco for chilam	1 sr. ..	0 10 0	0 4 0	150
Supari (Manakchandi)	" ..	2 8 0	0 8 0	400
*Pan (Desi)	200 ..	1 8 0	0 6 0	300
Dhobi	Adult dhobi	0 1 0	0 0 6	100
Barber	Shave ..	0 1 0	0 0 6	100

*Increase only seasonal.

APPENDIX 5

List of dealers in Brassware at Moradabad

1. Mohammad Ahmad Husain.
2. Mohammad Illias Abdul Qayum.
3. Mohammad Shaifuddin Raisuddin.
4. Saadat Husain Inayat Husain.
5. Haji Mohammad Wahid.
6. General Supply Stores.
7. Abrar Ahmad.
8. Mohammad Shuja Ullah Khan.
9. Mohammad Yahia & Sons.
10. Rafi & Sons.
11. Kaji Kalan Bros.
12. Mohammad Qasim & Co.
13. Haji Abdul Jalil.
14. Wazir Uddin Mohammad Sabir.
15. Gift House.
16. Mahbub & Sons.
17. Altaful Rahman.
18. Mohammad Zaid and Mohammad Nasir.
19. Obedur Rahman.
20. Fazlur Illahi.
21. Cheapest House.
22. Salah Uddin Hamid Uddin.
23. Mohammad Farid Uddin.
24. Tijarti Fund.
25. Crown & Co.
26. Naushai Ali.
27. Himalaya Cutlery Works.
28. Manzoor & Sons.
29. Nisar Ahmad Khan.
30. Sheikh Mustafa Uddin.
31. Abdul Karim Abdul Aziz.
32. Subhan Illahi.
33. Adul Latif.
34. Abdul Salam.
35. Manzoor & Co.
36. Mohammad Zakaria Mohammad Yahia.
37. Indian Metal House.
38. Imperial Spoon House.
39. Abdul Abid.
40. Allah Ali.
41. Mohammad Shafiq.
42. Ram Chandra & Co.
43. Haji Abdul Khaliq.
44. Mohammad Mohsin & Co.
45. U. P. Art Emporium.
46. Abdul Rahim & Co.
47. Mohammad Wahid & Co.
48. Shyam Lal Raghubir Saran.
49. Universal Trading Co.
50. Amar Nath Agarwala.
51. Ram Saran Das Autar Kishan.
52. Raja Ram Radhey Shyam.
53. Nand Kishore Murari Lal.
54. Raghubir Saran Gopi Ballabh.
55. Bishambar Nath Jagan Nath.
56. Panna Lal Babu Ram.
57. Ralience Metal Works.
58. Lala Nand Kishore.
59. Lala Panna Lal.
60. Sukhan Lal Basi Ram.
61. H. Shankar & Co.
62. B. R. Gupta & Sons.
63. Jagan Nath Ram Prasad.
64. Abdul Wajid Abdul Rashid.
65. Qazi Mohammad Ismail.
66. Mohammad Wasi Mohammad Yousuf.
67. Haji Mohammad Akhtar.
68. Ram Chandra Lakshman Prasad.
69. Haji Nur Ilahi.
70. Haji Irshad Illahi.
71. Mohammad Aziz.
72. Abid Arikh.
73. Hafiz Bros.
74. Mehar Ilahi Rahman Ilahi.
75. Mohammad Jan Suleman.
76. Haji Abdul Salam.
77. English Warehouse.
78. Mushtaq Husain Ishaq Husain.
79. Anwar & Co.
80. Chanda & Sons.
81. Mohammad Yunis Mohammad Sabir.
82. Hafiz Qadir.
83. Isabhai Daud Ji.
84. Comrade & Co.
85. Munshi Ismail & Sons.
86. Abdul Latif & Sons.
87. Jamil & Co.
88. Sharif & Co.
89. Royal Spoon Works.
90. Ahmad Jan Mohammad Jan.
91. Din Ilahi & Sons.
92. Ishrar Ahmad Khan.

93. Irphan & Co.
94. Mohammad Yasin.
95. Kanti Prasad Om Prakash.
96. Furqan Illahi.
97. Mohammad Hafiz.
98. Ram Kirti Saran & Bros.
99. Slam Illahi.
100. Mohammad Fazil.
101. Nannumal Chiranji Lal.
102. Latif & Co.
103. Jafarullah Nazarullah.
104. Mohammad Mashuque Mohammad Faruq.
105. Mohammad Irashad.
106. Haji Mohammad Jan Mohammad Daud.
107. Marghub Illahi.
108. Haji Abdul Malik.
109. Arif & Co.
110. Abdul Rahman & Co.
111. Fazil Bhai & Co.
112. Murari Lal Raghunath Saran.
113. Bhukan Saran Amarnath.
114. Damodar Das Radha Kishan.
115. Lala Madho Ram Agarwal.
116. Kesho Saran Om Prakash.
117. Binda Prasad Brij Basi Lal.
118. Puran Prasad Kailash Chandra.
119. Ram Sarup Pitamber Saran.
120. Lala Ram Kirti Saran.
121. Lala Shanti Prasad & Sons.
122. Rama Nand Radhe Ram.
123. Bulaqi Das Shanti Prasad.
124. C. L. Gupta & Sons.
125. Piarey Lal Shanti Prasad.
126. Bannu Lal Bharat Saran.
127. Panna Lal Shanti Saran.
128. Jagannath Raghubir Saran.
129. Baldeo Singh & Sons.
130. Ramkirti Saran.
131. Bharat Metal Works.
132. Piare Lal Ram Swarup.
133. Ganeshi Lal Jwala Prasad.
134. Gupta & Co.
135. Prince Metal Works.
136. Rameshwar Saran.
137. Debi Saran & Sons.
138. Babu Ram Ratan Lal.
139. Pandit Banwari Lal.
140. Gulzari Mal Suraj Mal.
141. Chadammi Lal Ram Murti Saran.
142. Bhukan Saran Raja Ram.
143. Raghu Nandan Prasad.
144. Bhukan Das Brij Gopal.
145. Mishri Lal Bishambar Nath.
146. Ram Saran Das Agarwal.
147. Ganga Ram Lalman Das.
148. Lalman Das Om Prakash.
149. Badri Lal Juggi Lal.
150. Harkaran Das Ram Saran.
151. Ram Saran Ram Chandra.
152. Misri Lal Girdhari Lal.
153. Bansi Dhar Bankey Lal.
154. Radhe Lal Torawala.
155. Pandit Madho Ram.
156. Rameshwari Das Babu Ram.
157. Changu Mal Radhe Shyam.
158. Bhukan Saran Das.
159. Banarsi Das Parshotam Das.
160. Popular Trading Co.
161. Agarwal Mfg. Co.
162. Raja Ram Parshotam Das.
163. Kedar Nath Shyam Lal.
164. Baldeo Prasad Krishna Kumar.
165. Ramsaran Das.
166. Bannu Lal Ram Nath.
167. Banshi Dhar Kashi Ram.
168. Lalman Das Ram Bharose Lal.
169. Raja & Co.
170. Agrawal Metal Works.
171. Jagan Nath Pyare Lal.
172. Dharam Kirti Saran.
173. Ratan Lal Sri Bhagwan.
174. Radhey Lal Banke Lal.
175. Pandit Bishambhar Nath.
176. Mohan Lal Gopal Das.
177. Gopal Das Chote Lal.
178. Ram Raghubir.
179. Satya Prakash & Sons.
180. Ratan Lal Om Prakash.
181. Bisheshwar Saran & Sons.
182. Mohan Lal Chhote Lal.
183. Jagan Nath Ram Saran Das.
184. Radhe Lal Gopi Nath.
185. Girdhari Lal Satya Prakash.
186. Pali Ram Sadhu Ram.
187. Shanti Prasad Ram Saran.
188. Sohan Lal Mohan Lal.
189. Girdhari Lal Lalita Prasad.
190. Ratan Lal Har Gulal.

APPENDIX 6

Hindustani terms in the report and their English equivalents

- Aftaba* : a kind of vessel.
Agardan : ditto.
Alam : a religious emblem used in the Muslim festival of Moharram.
Angethi : hearth.
Ban : a hemp-like thing used in netting the cots. *
Barfi : a kind of Indian sweets.
Bandhanewala : a worker in Electroplating.
Batta : *karkhanadar's* commission.
Bidar : a kind of engraving work.
Bhagona : a kind of vessel.
Bhatti : oven.
Bhattiwala : worker working on oven.
Bhusa : straw.
Changer : a kind of vessel.
Chakka : native cast brass sheet.
Chakkar : Wheel for working bellows in a furnace.
Chakti : patch.
Chalni : sieve.
Chhilai : scraping.
Chhilaiya : scraper.
Chheni : chisel.
Chilam : an earthen vessel for containing tobacco for smoking.
Dal Arhar : one of the varieties of pulse.
Dalbadal : a kind of rice.
Dal Mung : one of the varieties of pulses,
Dal Urd : Ditto.
Darza : an iron mould.
Darza casting : casting through the iron mould.
Delhi ki mitti : porcelain.
Dhabba Chhilaiya : a worker in spoon manufacture.
Dhalai : casting.
Dhalaiya : one who casts.
Dhobi : washerman.
Diwali : Hindu festival of light.
Ekadashi : eleventh day of a fortnight in Hindu calendar.
Farsi : a vessel used for smoking *kukka*.
Gagra : a metal jar.
Galaiya : a worker who melts the raw material in *darza* casting.
Gharia : an earthen vessel in which the raw material in *darza* casting is molten.
Ghee ; clarified butter.
Gilas : a common household vessel (tumbler.)
Golchi : curry-spoon.
Gulabpash : rose sprinkle.
Gulli : an alloy of cupro-nickel scrap and zinc used for making E. P. N. S. wares.
Gur : unrefined sugar,
Hath ka chhilaiya : hand scraper.
Hath kathaiwala : worker who does hand finishing.
Hath ki qalai : hand tinning.
Hath ki kathai : hand finishing.
Hathora : hammer.
Hukka : an Indian tobacco pipe for smoking through water.
Id : a Muslim festival.
Jalebi : a kind of Indian sweets.
Jhalai : repair of the defects in defective casting.
Jhalaiya : a worker who repairs the defective casting.
Jila : glitter.
Jila uthana : to clean a vessel and make it shine.
Kaiya : a tool used in lacquering.
Kalai : tin polishing.
Kalaigar : tin polisher.
Kalam : an instrument for making relief work in a vessel.
Kali mitti : a kind of clay.
Kalsa : same as "Gagra".
Kambal : rough blanket.
Karkhana : workshop.
Karkhanadar : owner of the workshop.
Katordan : a kind of vessel.
Katori : ditto.
Kathai : finishing after polishing.
Kharbar : a kind of cloth used in finishing after polishing.
Khariyawala : a worker in electroplating.

- Khasdan* : a kind of vessel.
- Khinchai* : pulling of the strap in a lathe for scraping.
- Khinchaiya* : worker who pulls strap.
- Khudai* : process of making relief work in a vessel.
- Khudaiwala* : a worker who makes relief work in a vessel.
- Kurand* : a kind of native stone powder used for giving lustre.
- Kurand ka masala* : a preparation of oil and kurand stone powder, used for giving lustre.
- Kuthali* : an earthen crucible which contains raw material in a para mould.
- Lota* : a common household vessel in India.
- Machine kathaiwala* ; a kathaiwala working on a lathe operated by electric motor.
- Manakchandi* : a kind of betelnut.
- Manuri* : a powder of burnt crucible.
- Marori* : a kind of engraving work.
- Masala* : a mixture of black soot and oil used in Darza casting.
- Mina* : a kind of engraving work.
- Mitti* : clay.
- Mitti safaiwala* : a worker in para casting.
- Muharram* : a Muslim festival.
- Munj* : same as "Ban".
- Nakkashi* : a kind of engraving work.
- Nakkashiwala* : engraver.
- Namakdani* : cruet stand.
- Nausadar* : sal ammoniac.
- Niariya* : a worker who collects brass scrapings and filings.
- Nok* : a pointed instrument for engraving.
- Paimana* : a vessel for drinking wine.
- Pakki kalai* : fast tin polishing.
- Pan* : betel leaves.
- Pandan* : a vessel for pan or betel leaves.
- Para* : an earthen mould.
- Para casting* : a process of casting in which an earthen mould is used.
- Parawala* : a worker who makes earthen moulds.
- Parat* : a big flat round vessel.
- Pindol* : a kind of whitish smooth clay.
- Pitari* : a kind of vessel.
- Pur* : baking of a number of paras in an oven at a time.
- Purat* : the inner core in a para mould.
- Qainchi* : a pair of scissors.
- Qalai* : same as "Kalai".
- Qalaigar* : same as "Kalaigar".
- Ragarai* : filing.
- Ragaraiya* : filer.
- Rakabi* : a metal dish.
- Ral* : lac.
- Randa* : chisel.
- Ranga* : tin.
- Rangbharai* : lacquering.
- Rangbharaiya* : lacquerer.
- Sada* : ordinary.
- Safedmal* : white metal or E. P. N. S. ware.
- Sal* : a kind of firewood obtained from sal tree.
- Sandasi* : a pair of tongs.
- Shab-i-barat* : a Muslim festival.
- Siahqalam* : relief work on an unpolished vessel for lacquering.
- Sumba* : a kind of engraving work.
- Sunakra Polish* : gold polished.
- Supari* : betelnut.
- Taiyariwala* : a worker in paracasting who joins the Tir and Purat.
- Tapai* : heating after tin polishing.
- Tapaiwala* : a worker who heats the vessel after tin polishing.
- Tashtari* : tray.
- Thal* : a bigger *thali*.
- Thali* : a flat vessel of very common use in Indian households.
- Thapki* : a wooden hammer.
- Thathera* : a caste of brassmakers among Hindus.
- Thukai* : process of beating and hammering.
- Tir* : the outer shell in a para mould.
- Tola* : 1/80th of a seer (standard).
- Tora* : old worn out brasswares of all descriptions.
- Tun* : a kind of straw.
- Ulchai* : same as "Khudai".
- Ulchaiya* : same as "Khudaiwala".
- Zira* : an instrument which has a device for keeping a vessel, meant for *khudai* work, fixed and tight.