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CENSUS OF INDIA, 1961

VOLUME XI

MYSORE

PART VII-B
HANDICRAFT SURVEY MONOGRAPHS

Editor

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of the Indian Administrative Service,
Superintendent of Census Operations in Mysore

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CENSUS OF INDIA 1961

VOLUME XI—MYSORE

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MAHARASHTRA STATE

BIJAPUR

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HANDICRAFTS SURVEY MONOGRAPHS ON :

1. Bidriware of Bidar
2. Pottery of Mysore
3. Carpets of Navalgund
4. Silk Weaving of Kollegal
5. Silver Jewellery

Field investigation, draft and photographs	.. ..	**Sri S. Ramachandran,** B.Sc., *Senior Technical Assistant (Handicrafts Survey).*
Supervision and Guidance	.. ..	**Sri K. Balasubramanyam,** I.A.S., *Superintendent of Census Operations in Mysore.*

FOREWORD

One of the first steps to be taken in the first Five Year Plan, was the establishment of six Boards for the promotion of handicrafts, village and small industries : (1) The Khadi and Village Industries Board; (2) The All-India Handicrafts Board; (3) The All India Handloom Board; (4) The Central Silk Board ; (5) The Coir Board; and (6) The Small Industries Board.

The rapid expansion of the activities of these Boards which concentrated not only on production and techniques, but also on organisation, extension, credit, marketing, and export, consolidated and enlarged the position that the household industries sector had so long enjoyed in the nation's economic life. It was this fact that forced itself upon the preparations for the 1961 Census and demanded that household industry should be separately investigated for a proper accounting of the nation's manpower, resources and its specific contribution to the national income. The 1961 Census therefore asked a special series of questions in household industry input of family and hired labour, and the periods over which household industry is conducted. It was felt, however, that an enumeration of the total number of establishments and their industrial classification would be incomplete without a proper description of what they produce and how they produce. It was important to make an assessment of the limits of rigidity within which traditional skill operates. This could be obtained by studying the caste, occupational, social and economic stratifications, the limitations of credit and marketing facilities, the dominance of custom over contract, the persistence of traditional tools and design forms, the physical limitation of transport, communication and mobility, the inability to adopt new lines or adapt to changing circumstances. It was important also to make an assessment of the limits of flexibility that traditional skill is capable of because the transformation of traditional skills to modern skills is easier said than done and a thorough study may well reveal that it is perhaps cheaper from the social point of view to develop industrial skills from scratch than to try to graft traditional skill on alien soil. A rather tragic case of failure to make what would on the face of it seem a minor adjustment cast its heavy shadow on the nation when it was discovered that goldsmiths used to working on 22 carat gold all their lives felt sadly helpless when asked to work on 14-carat, so narrow and unadaptable were the limits of their skill and proficiency and so rudimentary the tools and equipment with which they and their forefathers had worked. This fiscal accident revealed that tools are even more important than skills.

An early opportunity was therefore taken in February 1960 to suggest to State Census Superintendents, that the Census provided a unique opportunity for conducting and documenting a survey of this kind. As such a survey was quite outside the usual terms of reference of Census work it was thought prudent cautiously to feel one's way with the thin end of the wedge of what would, it was hoped, prove to be an exciting pursuit. It was therefore considered the wiser course to wait until the State Census Offices felt so interested that they would no longer take the inquiry as an imposition but rather want to do it on their own and ask for the necessary staff and equipment. This office, too, in its turn, could make use of the interval to organise and elaborate the design of inquiry in order to feed the appetite that work in progress would serve to whet. Because it was a labour of love, (sought to be unobtrusively thrust on one's colleagues and because the inquiry itself was so vast that normally it would demand in any country as big a set-up, if separately established, as the Census organisation itself and that over a much longer period and because it was almost a pioneer venture, nothing like it having been undertaken since the 1880's it was decided to move towards a build-up by stages, to let the inquiry unfold itself only as fast as my colleagues chose to ask for more.

Thus, in the first circular of 18th February 1960, it was suggested that the inquiry might be conducted through the agency of the Development Department, the State Director of Industries, the Director of Tribal Welfare, the Registrar of Co-operative Societies, and other organisations concerned with the promotion of

household industry. A draft questionnaire containing 30 questions in three parts was recommended for canvassing. It was suggested that information on this questionnaire, village by village and area by area, might either be obtained through the regular departmental channels of the State Government, or through the newly set up Census organisation, or through the hierarchy of the newly-created Panchayets. Stress was laid on the need of photographic documentation and illustration of designs, shapes and forms not only by photographs but with the help of line drawings or sketches together with a full description of the materials used.

Almost the whole of 1960 and the first half of 1961 were spent in organising and taking the census count, although several States even during this period had not allowed the grass to grow under their feet but made exploratory studies and decided in their minds how the inquiry should be organised. A series of regional conferences held in Trivandrum, Darjeeling and Srinagar in May and June 1961 revealed much enthusiasm among State Superintendents to proceed with the survey, but the need of separate staff and equipment was felt at the same tme as the realization dawned that this was much too serious an inquiry to be treated casually and left to be achieved through the usual administrative channels and State Census Superintendents proceeded to augment their staff with qualified research and investigating officers, technical persons, photographers, artists, draughtsmen and other trained personnel.

This was followed by rapid progress in co-ordination between the Central and State Census Offices in the matter of exchange and processing of information, documentation and investigation, of assisting each other with trained investigators and in editing and finalising drafts, layouts, presentations.

Mention has been made of a questionnaire in three parts and thirty questions. The idea was to make a beginning with empirical, analytical studies based on a structured questionnaire which would replace general descriptive accounts that had obtained so far. The primary aim was to obtain a picture as much of the artisan himself as of his craft, to obtain a perspective of the artisan and his craft in his social and economic setting, the extent to which tradition bound him and the winds of change ruffled him, the extent of his mobility and immobility, the conditions of market, credit, new contacts and designs in which he operated, the frame of new as well as traditional producer-customer relationships in which he still worked, and how far he was ready to pierce his own caste-tribe socio-economic cocoon and make a break through to new opportunities promised by the Five Year Plans. The aim was to hold up the mirror to hereditary skills struggling with the dialectics of tradition and change.

Thus the first part of the questionnaire, purporting to be a village schedule, sought to take account of the size and population of the village. Its remoteness from or proqimity to centres of trade and commerce, in short, the degree of isolation in which the artisan worked, and the relative strengths of various communities in the village which would afford clues to social interdependence and the prevalence of the *jajmani* system. The second part was devoted to artisan communities in the village: the several castes of artisans, the number of families in each, the total number of workers, males and females, the extent of co-operative activity among them, the extent of dependence upon employers and of wage or contract labour. There were questions on the raw materials used, the means of their procurement, the possible extent of dependence on others for raw materials, the extent of the material that artisans can handle within the limits of their skill. There were other questions on the exchange and flow of designs, the use of colours, the ancientness of the craft and legends associated, the colonization of the craftsman, on patrons and customers and on social and economic contact with the world inside and outside the village. There were specific questions on the workshop itself and particularly the tools and the source of supply of these tools, because it was felt that tools decide everything and are the surest index of inertness or flexibility. Separate blocks of questions were designed to bring out the ramifications of artisan castes throughout the country and the ways they sustained themselves, the type of clientele they catered for, the extent to which they operated on money or barter or service, how specialized their craft was, how wide the market, how dependent they were on their

socially preordained clientele and how restricted the latter was by the seemingly unalterable laws of social custom; the extent to which they could operate in the open market, the range of heir wares and the sizes to which these were ordinarily restricted either by the limits of their own skill or the length of their customers' purse-strings. Inquiries were to be made about the operation of middlemen and of co-operative societies, the people who gave new designs and demanded new products. Finally, the several stages of production of the articles themselves were to be fully described including the final and finishing stage and a list of very skilled craftsmen of each community was to be furnished. The third part was devoted specially to tribal communities and designed to find out how self-sufficient or dependent they were on the production and supply of manufactured goods, the extent to which they produced themselves or depended on others, their contacts with other communities and the specific forms of production and commerce through which these contacts were maintained.

Particular emphasis was laid on the need of obtaining as full an account as possible for unique regional design differentiations as they reflect not only the very culture patterns of the country but the persistent inventive faculties of the craftsmen. The importance was emphasised of giving full attention to articles of domestic use as it is in their shapes, designs and forms that the culture patterns and traditional skills persist most tenaciously.

Simultaneously with the investigation of specific crafts, State Superintendents proceeded to compile a comprehensive list of all types of handicrafts obtaining in their State. As for the specific crafts to be investigated several tables were devised from the structured questionnaire in order to guide investigations towards pointed observation and analysis, to enable them to write, not just general descriptions, but with their eye on the object and on facts.

Investigations conducted between September 1961 and May 1962, including a study group of all States and the Social Studies Division in December 1961 at Delhi, stimulated many of the States into going in for a much enlarged schedule. The revised village schedule itself, the counterpart of the first part of the February 1960 schedule, contained 19 large sections containing elaborate and probing questions. The Family Schedule for practising artisan families similarly contained 19 main questions each subdivided into many questions. The Family Schedule for non-practising artisan families contained 21 questions. There were schedules for the study of co-operative societies, of production-*cum*-training centres, and of consumer's preference. This enlarged schedule of investigation, in the formulation of which the States themselves actively assisted, was greatly welcomed. The surveys that will appear in this series will therefore consist of two main types: (a) those based on the original short schedule and (b) those based on the much enlarged schedule. In some cases Census Superintendents felt enthused enough to scrap the work based on the original short schedule and do it over again on the enlarged schedule. In the meantime much experience was gained on the analysis of facts and figures to clothe each observation with plenty of authentic information so that the reader, could make his own judgement instead of being expected to see all the time through another pair of eyes.

This programme of survey of handicrafts and household industries has been fortified by several ancillary surveys, each one of which would deserve major attention. Along with the survey a compilation has been made of all handicraft centres in each State and an inventory prepared of skilled craftsmen. Photographic and other documentation has been built up to constitute what may now be regarded as the most considerable repository in the country. Elaborate and accurate maps of craft centres in taluks, tehsils and districts are either ready or under preparation. A full census of all fairs and festivals, weekly hats and markets, throughout India, has been taken and is being published for the first time. Andhra Pradesh has embarked upon a project of chronicling the social and religious antiquity and uniqueness of every fair and festival. A separate volume will be devoted to each district which promises to be of the utmost value to sociologists and orientalists. A full and complete inventory, replete with sketches and measurements of every object, has been prepared of exhibits in museums of tribal

crafts in India. There has been a fairly satisfactory survey of houses and buildings, indigenous architectural designs and use of local building material of the whole country. All this has been entirely a labour of love, patiently organised and executed under great strain and in disregard of health and comfort, for which I take this opportunity of expressing my appreciation and grateful thanks to my colleagues.

New Delhi,
July 30, 1964.

ASOK MITRA,
Registrar General, India.

PREFACE

It was the express desire of the Registrar General, India, Shri Asok Mitra, I.C.S. to bring out monographs on select handicrafts in vogue in the various parts of the country, and in his foreword he has explained at length the genesis for this desire. The crafts studied in Mysore have been chosen in accordance with the criteria that he has laid down.

Seven monographs—all dealing with crafts which use wood as their chief raw material—have already appeared in Part VII-A. I am happy to now place before the readers this second and final volume embracing the following crafts :—

(i) Bidriware.
(ii) Pottery.
(iii) Carpets of Navalgund.
(iv) Silk Weaving of Kollegal and
(v) Silver Jewellery.

These crafts, by and large, continue to be carried on mostly by castes which are traditionally associated with them. To illustrate, the weavers at Kollegal are Devangas and the silversmiths at Udipi are either "Viswa Brahmins" or "Daivagna Brahmins", each craft being the close preserve of the respective community. These and other artisans seem to display an innate love for the craft they ply as evidenced by the fact that despite insufficiency of earnings and lack of patronage, they have still been clinging to them. This is especially true of skills that are transmitted from father to son in a traditional fashion which appears to infuse in the artist a more than economic interest.

The post independence period is marked by efforts both at the Governmental and institutional levels, to provide a strong base to the existing handicrafts in the country and in these monographs an attempt has been made to highlight all recent changes.

Sri S. Ramachandran, Senior Technical Assistant has carried out the field work with devotion and zeal. He has drafted these monographs besides taking the photographs presented in the volume. The entire work of investigation and drafting has been carried out under my personal guidance and supervision. Sri M. A. Srinivasan, Assistant Superintendent of Census Operations, has gone through the monographs and assisted me in editing.

Bangalore,
10*th October* 1968.

K. BALASUBRAMANYAM,
Superintendent of Census Operations in Mysore.

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BIDRIWARE OF BIDAR

CHAPTER I

INTRODUCTORY

Introduction

The craft of Bidriware is a relic of the spacious days of old when life and problems of living were not so pressing and complicated as in modern times; when beauty in craftsmanship was deemed as important and worthwhile as the utility of the products of a craft. In modern times persons care, by and large, more for usefulness on a large scale than for artistry in the select products of any craft however beautiful they may be. From this standpoint the Bidri craft may appear to be an anachronism in the modern set-up of the machine age. In these days, persons are leaning more towards large scale and heavy industries and against this background, a craft whose chief feature is delicate workmanship carried on by a small number of households in just one town may appear out-moded. But, modernism apart, if artistic workmanship in any craft is worthy of notice, then the craft of Bidriware, indeed constitutes quite an interesting study.

As Damascening is derived from Damascus, so is Bidri from Bidar, the town where it was first made. Damascening is the art of encrusting wire of gold or silver on the surface of iron or steel. The surface upon which the pattern is to be traced is finely undercut with a sharp instrument. The gold or silver thread is forced into the minute furrows of the cut surface by hammering, and the wire is securely held. This system of ornamentation is peculiarly oriental having been much practised by the early goldsmiths of Damascus. Bidri is the art of encrusting wire of silver or gold on the surface of 'Bidri', a binary alloy of zinc and copper. The finished Bidriware resembles damascened ware as the Bidri is made jeot black so as to resemble steel which is the base metal used in the craft of damascening.

Colour contrast is the special attraction of Bidriware. Bidriware neither rusts nor corrodes. However, the alloy is brittle.

Centre of Production

Bidar is the only centre in Mysore State, where the craft is carried on. The place is the headquarters of Bidar District. Prior to the re-organisation of States in 1956, Bidar was a district of the erstwhile Hyderabad State. Situated in 17°55′ N and 77°32′ E on an elevated and healthy plateau, it is at a height of 2,330 feet above sea level. The area of the town is 3.5 square miles and its population according to 1961 Census is 32,420.

It is a town of historical importance. In the Imperial Gazetteer of India it is stated that "According to local tradition, the Kakathiya Rajas of Warangal endowed a temple of Mahadeo which existed here and a town sprang up in its vicinity in the middle of the thirteenth century, which became the capital of a large province. Ulugh Khan, afterwards Muhammad Bin Tughlak, besieged and took it in 1321, but subsequently, when the governors of the Deccan rebelled, Ala-ud-din Hasan, the founder of the Bahamani dynasty, annexed the town to his new kingdom in 1345. Ahmed Sha Wali, the tenth Bahamani King, founded the modern city and built the fort, removing his court here from Gulbarga in 1430. Bidar continued to be the capital of the Bahamani kings until the extinction of that dynasty, when Amir Barid founded an independent State in 1492. Amil Barid ruled over Bidar and the surrounding country, and was succeeded by his son Ali Barid in 1538, who was the first to assume the title of Shah and died in 1582. Three other kings, Ibrahim, Kasim Barid and Mirza Ali Barid, followed, the last of whom assumed the title of Amir Barid II. This short lived dynasty became extinct when Amir Barid II was made a prisoner, and sent to Bijapur by Ibrahim Adil Shah. In 1624 the Nizam Shahi troops under Malik Amber attacked and plundered Bidar, but it was retaken by the Bijapur king. In 1656 Aurangazeb besieged and took Bidar, changing its name to Zafarabad. The town remained in the possession of the Mughals till the first of the Nizams declared his independence, early in the eighteenth century".

The town of Bidar must have been of great extent in its prosperous days, as appears from its palaces, mosques and other buildings. Among these may be mentioned the great *Madarasa* or College built by Mahamud Gavan, the Bahamani Minister, which is now in ruins; the Jama Masjid, and the *Sola Khumba*

or sixteen pillared mosque. The last of these is in the citadel, which also contains the ruined Rang Mahal or 'coloured palace', the remains of mint, a Turkish bath, an arsenal, and several powder magazines. The fortification and battlemented walls of this place are very strong and are still well preserved. On its numerous bastions, pieces of ordnance are mounted, some of very large size; one of them specially remarkable as having been brought from Bijapur. West of the town are the tombs of Ali Barid, Kasim Barid and others of the same dynasty, while twelve tombs of the Bahamani kings are situated to the North-East in the village of Ashtur. Most of the old buildings in the fort are now used as offices.

Bidar is the chief trade centre of the district and has given its name to a class of metal work made of an alloy of copper, lead, tin and zinc, inlaid with silver or gold. This industry, however, is not flourishing.

The crafts of leather goods making and smithy production are also prevalent at Bidar, but these crafts have nothing to do with the craft of Bidriware.

History of the Craft

The craft of Bidriware flourished under the patronage of Bahamani and Barid dynasties when they had Bidar as their capital. It is said that the first artisan who was working in the Bidri medium was Abdulla *bin* Khaiser a migrant to Bijapur. It appears, the earliest craftsmen might be migrants from Iran. According to Mr. Speight the first Bidri work might have appeared in the last years of Bahamani dynasty, *i.e.*, the earlier decades of the sixteenth century. However, it is believed that the local progenitors of the craft were goldsmiths, as they were the persons who were already practising an allied craft. In the later years the Muslims of the locality took up the craft and even today the majority of the craftsmen engaged in this craft are Muslims.

Households of Bidri workers

According to the present survey 61 households are engaged in this craft of Bidriware. Of these 61 households, 55 are Sunni Muslim households and 5 belong to the Hindu castes of Medars and 1 Bestha. Medar is an occupational caste and members of this caste are basket makers. Bestha is the caste of fishermen. The total number of persons engaged in this craft is 96.

Establishments

Seventeen establishments are engaged in the manufacture of Bidriware. Any production unit, household or non-household (co-operative) is deemed as an independent establishment. Of the 17 establishments 11 are proprietary establishments run by households and 6 are Co-operative Societies. Out of the 11 proprietary establishments, 7 are based on household labour, 3 are carried on with household and hired labour and one depends on hired labour only.

The six Co-operative establishments are run by the promoters of the Society where the members work as hired labourers. In 3 of the Societies the financiers and their household members also work and take wages as any hired worker. The financiers of the other 3 Societies are sympathisers of the respective societies and are also businessmen.

CHAPTER II

TECHNIQUES OF PRODUCTION AND ARTICLES PRODUCED

Raw Materials

The raw materials used in this craft are zinc, copper, silver, German silver, tin, lead, copper sulphate and, the other materials employed are resin, beeswax, groundnut oil, castor oil, moulding sand, ash, etc.

Zinc

This is the basic metal in the alloy.*

Freshly cast zinc has a bright silvery blue surface and on storage in air it becomes grayish owing to the formation of a film of its oxide, which protects it from further oxidation. Zinc is mostly used for galvanizing. It is also used for dye-casting alloy.

Brass is an alloy of copper and zinc, the portion of zinc being 30 per cent to 40 per cent of the alloy.

Zinc used at Bidar for manufacture of Bidriware is imported from Australia and supplied to the Bidriware Co-operative Societies through the Union of Bidriware Co-operative Societies. The Government quota is sold at Rs. 1.50 per Kg. and it is available with the dealers at Rs. 3.30 per Kg. Individual workers and private establishments obtain the quantities of zinc they require from local dealers as the Union supplies zinc to the Co-operative Societies only.

Copper

Copper is the other metal found in the composition of the alloy. It is a reddish blue metal which is malleable and ductile. It is the principal constituent of a wide range of alloys. The major portion of this metal produced to-day is utilised by the electrical industries. Formerly it was used extensively for household utensils. In Bidar it is sold in sheets at Rs. 5.00 per Kg.

Silver

Silver is employed for inlaying the alloy. Silver is used as it is very malleable and ductile and also cheaper than gold. It has long been used in the manufacture of coins, ornaments and jewellery. The metal is of a brilliant white colour and resistant to atmospheric oxidation. One gram of pure silver may be drawn into a wire more than a mile long and can be beaten to leaves thinner than 0.00025 mm.

For purposes of inlaying on Bidri, silver is used in the form of wire as well as leaf. It is sold by jewellers at Bidar at Rs. 2.30 for 10 gms.

German Silver

The constituents of this alloy are copper, nickel and zinc. It is a silvery white alloy of good strength and resistant to corrosion. It is employed in the form of wires to hinge the lids of boxes. It is available with the local dealers at Rs. 14.00 per Kg.

Lead and Tin

Tin is a white metallic element with a yellowish tint. Lead is a bluish grey metal. Lead is the heaviest and softest of common metals. The soft solder (lead-tin alloy) is used for soldering when the parts of a Bidriware cast separately are joined. Tin costs Rs. 42.00 per Kg. while lead costs Rs. 1.50 per Kg.

Copper Sulphate

It is a salt soluble in water. The solution of copper sulphate smeared on Bidri lends a temporary blackness to the alloy. This black background makes it easy for the artisan to chase the design on it, as the lines drawn by him would expose the metal which would shine against the black background. Crystals of copper sulphate are sold at Rs. 3.00 per Kg. by the local dealers.

Resin

It is the residue got from the distillation of turpentine. The colour of resin used at Bidar is brown and this resin costs Rs. 1.62 per Kg. Resin is used in the preparation of the moulding sand to render it sticky. It is also used in the preparation of wax-bed on which the Bidriware is reposed for chasing and inlaying.

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*It is a metallic element with atomic No. 30 and atomic weight 65.38. It melts at 420°C. and boils at 907°C. The chief ore of zinc is zinc blende or sphalerite. After mining, the sphalerite deposits are crushed and concentrated in flotation circuits of considerable complexity. Efforts are made to separate lead, copper and other values as separate concentrates. Zinc was not in vogue in commercial quantities till the beginning of the 18th century, as the metal could not be made in either blast or reverberatory furances which are employed for producing most of the major metals. It was in the beginning of the 18th century that the difficulties were overcome and since then the metal is made in commercial quantities.

Groundnut Oil

It is extracted from groundnut and is used with resin in the preparation of the wax-bed. It is sold in the provision shops of Bidar at Rs. 2.00 per Kg. It is also used in the ultimate stage of work in which Bidriware is made lustrous.

Castor Oil

This oil is employed in the preparation of moulding sand. It is also available in the provision shops of the locality at Rs. 2.00 per Kg.

'Dhalneki Mitti'

This is the moulding sand employed in the making of moulds for casting. It is available in the vicinity of Bidar. The artisans have to spend about Re. 0.25 towards labour charges to collect moulding sand of a quantity which can be filled in a cement bag.

'Rangchadaneke Mitti'

It is a kind of mud used for blackening the alloy of Bidri after inlaying. This is a special type of mud available in the fort area of Bidar. The artisans get this mud from that place quite free of cost.

Ash

Ash obtained from burnt firewood is used as a parting medium and for smoothening the surface of the casting. Ash is dusted over facing sand after withdrawing the pattern from the mould and on the pattern before ramming moulding sand over it.

Ammonium Nitrate

This salt is used along with the mud got from the fort area for preparing 'Rangchadaneke Mitti'.

The metals and all other materials except the mud and ash employed in the craft are brought to the locality from different parts of the country. The local dealers obtain these articles from merchants at Hyderabad.

TOOLS (Plate 1)—

Tools and implements employed in the craft of Bidriware are mostly factory made and these are bought by the artisans from local dealers who get them from wholesalers at Hyderabad. Files, bench and hand vice, hack-saw frame and blades, blower, metal cutters, calipers, drill with bits set, cutting—pliers, tongs, hammer, anvil, flasks, carving chisels, wire drawing scale, scrapers and crucible are the important tools and articles used in the craft.

Files of different shapes like half-round, round, square with rough and smooth surfaces and of size 6", 8", 10" & 12" are used for smoothening the alloy after casting an article and prior to inlaying.

Vices are needed for holding the article to be filed and scraped.

Blower is indispensable and employed for supplying air to the furnace.

Drill is essential for making holes in the cast pieces.

A wire drawing scale or *Tharpatti* is employed for reducing the gauge of the silver wire to be inlaid. The *Tharpatti* consists of as many as 20 apertures of various gauges ranging from 14 to 34. The silver wire whose gauge is to be reduced is heated and drawn through the apertures in 'Tharpatti' starting from the gauge of the wire itself and then the next smaller gauge and so on till the wire is reduced to the required gauge.

Scrapers and chisels are made by local blacksmiths out of used up files. A scraper whose edge is 1" to 1½" and resembles that of a chisel is used for scraping and smoothening the articles after inlaying. Scrapers are of two shapes, one is straight and in the other there is a rough right angled bend at the scraping end.

Three kinds of chisels are used in the craft. The first called *drawing Kalam* or drawing pen has a shrap edge like that of a needle and is used to sketch the design on the surface of the alloy. The second type is called *'Chilne Kalam'* meaning the chisel for chasing. This type of chisel has also a sharp edge and is employed for chasing the design on the alloy to hold the material to be inlaid. The third type *'Chappat Kalam'* is a chisel with a blunt edge and used for embedding the silver wire into the engraved design.

The *drawing Kalam* is manipulated with free hand, while the *Chilne Kalam* and *Chappat Kalam* are hammered by means of crosspan hammer.

Tongs are used for holding the crucible containing the molten alloy.

Cutting scissors, calipers, cutting-pliers, anvil and hammer are used as and when needed and no specific type of use can be assigned to them.

The flask called *Darza* is made by local blacksmiths to order. This flask is made of pressed steel sheets. It is a stirrup-shaped flask of size 8″×4″ to 16″×12″. The *Darza* box is made in two similar pieces, one a cope, or the upper half of the *Darza* and the other a drag, or the bottom half of it. Both cope and drag consist of only sides in stirrup shapes, the width of which is 1¾″ to 2″.

Crucible

The crucible is the receptacle used for melting the alloy. The thickness of the sides of the crucible is 8 to 10 mms. The size of this container is expressed in terms of lbs. representing the quantity of the metal that the vessel can contain. The size ranges from ½ lb. to 24 lbs. Formerly the artisans were using crucibles imported from Germany. Now they are using the crucibles made at Rajamundry in Andhra Pradesh.

The current retail rates of the articles used in the craft are as follows :—

	Rs. Ps.
Files 12″ flat & rough	.. 4.00 (Indian)
Files 12″ flat & smooth	.. 4.00
Files 12″ half round & rough	.. 8.00
Files 12″ half round & smooth	.. 8.00
Files 10″ flat & rough	.. 4.00
Files 10″ flat & smooth	.. 4.00
Files 10″ half round & rough	.. 4.00
Files 10″ half round & smooth	.. 4.00
Files 10″ round and smooth	.. 2.00
Files 10″ flat & smooth	.. 4.00
Files 8″ flat & rough	.. 4.00
Files 8″ flat & smooth	.. 4.00
Files 8″ half round and rough	.. 4.00
Files 8″ half round & smooth	.. 4.00
Files 8″ square	.. 2.00
Files 6″ flat & rough	.. 4.00
Files 6″ flat & smooth	.. 4.00
Files 6″ half round & rough	.. 3.00
Files 6″ half round & smooth	.. 3.00
Bench vices 3″	. 21.00
Bench vices 4″	.. 30.00
Hacksaw frame	.. 7.00
Blower	.. 20.00
Cutting Scissors	.. 3.00
Calipers	.. 3.80
Drill with bits	.. 30.00
Cutting pliers	.. 4.00
Tonges	.. 3.00
Hammer	.. 0.75 to 5.00
Darza	.. 3.00 to 5.00
Carving chisels—dozen	.. 1.50
Wire drawing scale	.. 2.50
Anvil	.. 5.00
Crucibles—lb.	.. 0.50

Forms of Bidri

The two main forms of Bidri are known as *Taihnishan* and *zarnishan*. *Taihnishan* is deeply cut work and *Zarnishan* is raised work. In the *Taihnishan* the pattern is deeply excavated and the silver or gold in the form of wire or leaf is embedded and afterwards the surface is smoothed and polished. In *Zarnishan* the outline of the pattern is engraved, the silver leaf held over and rubbed with fingers until a tracing of the design is imparted on it. The leaf is then cut into the desired pieces, each a little larger than the space it is intended to cover. A deep etching is made and a core of soft lead is prepared to fit into the cavity. This lead covered with silver is pressed into the cavity. Afterwards it is hammered all round so as to cause the surface metal to embrace and fix the applied piece. The process is finished by the silver leaf being punched on the surface in completion of the desired pattern. At Bidar the craftsmen follow the *Taihnishan* process.

THE ALLOY

Bidri is a non-ferrous binary alloy of zinc and copper and consists of 16 parts of zinc to 1 of copper.

References show that the composition of the alloy has not always been uniform. In a pamphlet exhibited at the Archaeological Museum at Hyderabad, it is stated that "The Bidri is composed of zinc 83.5 per cent, copper 12 per cent, lead 3 per cent and tin 1.5 per cent". In the Asiatic Journal for March 1817 Dr. Benjamin Heyens has mentioned, " the alloy consists of 24 parts of tin to 1 of copper". Mr. Wilkins has written in reply to Dr. Heyens that "the alloy contained zinc in place of tin along with copper". In the "Indian Art at Delhi", Sir George Watt has mentioned that "Both the forms of alloy seems to prevail". He says further: "In Lucknow the chief metal is zinc and the others lead, tin and copper being added each in the proportion of 1/16th of the zinc". Again, he says: "In Hyderabad, zinc seems

to be greatly reduced, and lead much increase". All these, however, are accounts relating to the composition of Bidri as it was in times gone by. At present, however, these proportions of the metals in the alloy do not prevail either at Bidar or at Hyderabad. The artisans say that the alloy of Bidri is of zinc and copper since a pretty long time and they do not know anything about the other metals being used in producing the alloy.

Techniques of Production

The production process of Bidriware can be set down in the following nine stages of work :—

1. Preparation of alloy.
2. Preparation of mould.
3. Casting.
4. Preparing the wax-bed.
5. Designing.
6. Preparation of silver wire.
7. Inlaying.
8. Colouring.
9. Polishing.

1. *Preparation of alloy*

Zinc is weighed and placed in the crucible. The crucible is then placed in the fire box of the furnace. The furnace employed is of the crucible type in which the heating chamber is movable and independent of the furnace structure. The furnace is a crude construction of mud. A fire box in which the fuel is burnt is built in the furnace and the air required to support combustion of the fuel is let in through a hand operated fan blower. Of late, the artisans have taken to using blowers in lieu of bellows. Charcoal is put in the fire box and fired.

The crucible containing zinc is placed in the fire box and is heated by the burning charcoal. Copper, kept ready at hand, is added to the zinc bath and allowed to melt. Dross, if any, is skimmed off. The molten alloy is poured into moulds and cast into blocks. These blocks can be readily used. The alloy also melts sooner than copper and saves time. But the practice of making the alloy just before the casting is to be done, is also in vogue. The alloy contains zinc and copper in the proportion of 16 : 1 by weight. This alloy lends itself easily to producing good castings. When it congeals in the mould it takes a perfect form. The molten alloy does not clog in the mouth and runs freely in the mould. It neither rusts nor corrodes and takes a fine polish. Marking the design and chasing it for inlaying can be easily done on the alloy. After colouring, the alloy becomes jet black and has the appearance of steel and the silver inlaid Bidriware always looks as if it is a damascenedware.

2. *Preparation of Mould*

Moulding sand locally called *Garki mitti* is sieved to produce a fine powder, as the presence of any coarse grain spoils the mould. Resin is heated in castor oil and stirred intermittently so that the ingredients become a fine mixture. The mixture of resin and castor oil is straightaway poured into the heap of sieved *garki mitti*. The *mitti* is kneaded well with hands till it becomes sticky. This prepared materials is called *Dhalneki mitti*. 1.18 Kg. of prepared moulding sand contains 1 Kg. of *garki mitti*, 0.12 Kg. of resin and 0.06 Kg. of castor oil.

The drag of *Darza, i.e.,* the bottom half of the flask is placed on a flat wooden board. The pattern of the article (made of bidri) to be cast is placed flat side down on the board in the centre of the drag after dusting the pattern with ash, well sieved and tied up in a piece of cloth. This coating of ash keeps the pattern from sticking to the mouding sand when it will be removed from the box. The recess of the *Darza* is rammed with moulding sand and pressed well by the heels of the moulder. After ramming, the moulding sand left extra above the frame of the the *Darza* is removed by means of a wooden blade so as to level the moulding sand to the edges of the frame. Another flat wooden board is placed on this levelled top side and the set is turned over so that the board, formerly at the base, can be removed. Ash tied up in the pouncing cloth is sprinkled on the pattern as well as on the levelled moulding sand. The cope of *Darza, i.e.,* the upper half of the flask, is placed on the drag consisting of the pattern rammed with moulding sand, with the locks of cope and drag intact. Now the recess of the cope is filled with the moulding sand, evenly rammed and pressed again with heels of the moulder. The extra moulding sand above the frame's edge is removed as was done earlier. The frame is unlocked and divided into its component parts of cope and drag. The pattern is withdrawn from the mould without destroying the shape imparted to it.

3. *Casting*

Again, ash is sprinkled on the facing sand of both the halves of the flask so that the alloy may not stick

to the moulding sand after casting (Plate ..). Besides, this affords a smooth surface on the cast piece and makes it crack proof. The cavity being ready, channels are cut on the moulding sand in the drag (the bottom half of the flask) to connect the feeding head or mouth of the cavity (Plate ..). Ash is sprinkled on this channel also. Afterwards, the cope is placed on the drag intact and locked by means of the locking device. The whole set is held tight between the wooden boards at top and bottom and is taken to the furnace. The crucible containing the molten alloy is removed from the fire box of the furnace with the help of tongs and the molten alloy is poured into the mould through the feeding head of the Darza (Plate ..). After waiting for a few minutes for the alloy to cool down, the *Darza* is unlocked and split into cope and drag (Plate ..). The moulding sand holding the cast piece is withdrawn from the mould with the help of a plier. Moulding sand, if any, sticking to the piece is then scraped off (Plate ..). The runners, risers and cores are also removed and projections are trimmed off from the casting. It is not necessary to pre-heat the mould as in the *cire perdue* process. The alloy will not suffer any serious change when poured straightaway into the mould. The same pattern can be used in the making of a number of moulds, whereas in the *cire perdue* process a wax replica can be used only once and then one has to be made afresh for the subsequent mould. Unlike in the *cire perdue* method of casting metal, here the same mould can be employed for more than one casting.

The cast piece is thoroughly filed by the use of rough and smooth files of different shapes and smoothened. At this stage the piece takes on a greyish white tint.

Copper sulphate solution is smeared on this piece which turns the greyish-white surface of the alloy to black. This black colour is removable by washing. This process helps the artisan more easily to distinguish the design configurations he chases on the metal right through the black surface to the object's greyish-white colour.

4. *Preparing the wax-bed*

Bidriware to be chased and inlaid after casting has to be fixed on a bed of wax to facilitate the work of chasing and silver inlaying. *Ral* is heated and intermittently stirred with groundnut oil in an iron pan. Bee-wax is added to the heated mixture and stirring is continued till the ingredients get thoroughly mixed up. The proportion by weight of groundnut oil, *ral* and wax in this mixture is 1:4:4. The mixture in its molten state is a viscous liquid. The molten mixture is poured on a stone slab of about 120 square cms. in size, and allowed to solidify to some extent. The slab may be square or rectangular in shape. The Bidriware to be chased and inlaid is laid securely on this bed at the pretermination stage of solidification. There is a double advantage in using the wax-bed. On the one hand it holds the Bidriware as firmly as a *vice* and on the other, it also serves as a resilient pad to cushion the hammer blows on the chisel during the chasing operation. The alloy base which is very brittle is liable to crack unless properly cushioned.

A single article is fixed in a wax-bed when the article is sufficiently large. But when the articles are tiny, like buttons, paper knives, etc., some ten to twenty of them are reposed on the same wax-bed.

5. *Designing*

By using a needle edged chisel called '*drawing Kalam*' the artisan scratches the design to be chased on the piece.

As already explained, a wax-bed is prepared and the piece is placed on it. The artisan keeps the slab carrying the wax-bed with the piece to be chased reposed in it, on a low wooden desk and works sitting on a mat placed on the ground.

6. *Preparation of silver wire*

The craftsmen depend upon the local goldsmiths for preparation of silver wire. They supply the lump of silver to the goldsmith and get the wire or sheet made in a wire drawing machine. The goldsmiths charge Rs. 0.10 per 10 grams of silver either to convert the lump into wire or a sheet.

However, to reduce the gauge of silver wire got from goldsmiths the craftsmen employ *Tharpatti*, a wire drawing scale. The silver wire whose gauge is to be reduced is drawn through the apertures in *Tharpatti* starting from the gauge of the wire itself and then the next smaller gauge, and so on till the wire is reduced to the required gauge.

7. *Inlaying*

By using sharp edged chisels the pattern of the design is chased on the piece to the required depth. Thus is the ground well prepared for inlaying.

Narrow cavities of the design are filled with wires and the wider cavities with sheets. The wire or sheet is placed in the cavity and pressed into it by means of a blunt edged chisel and hammer. Further, the wire or sheet is well secured by hammering. The process is continued till the chased design is completely inlaid.

After this stage of work, the object is smoothened by means of straight and bent scrapers. Then the article is withdrawn from the wax-bed and buffed well with abrasive paper.

8. *Colouring*

Next comes the stage of colouring, *i.e.*, the process of turning the alloy to ebony black.

Rangchadancke mitti the fort mud and ammonium nitrate are mixed in the proportion of 6:1 by weight and ground well with some water. This mixture is boiled with water in an iron pan over a simmering fire. The article to be coloured is immersed in the boiling solution for about a minute, withdrawn from the pan and immediately washed in cold water. The whitish-grey colour of the alloy turns jet-black while the inlaid silver is left unchanged.

When a single piece is to be coloured, the piece itself is heated and the solution of the mixture of fort mud and ammonium nitrate is merely smeared over the piece.

9. *Polishing*

The final stage is polishing. The blackened article is rubbed with a few drops of groundnut oil and a thorough rubbing lends a brilliant lustre to the article.

All the articles of Bidriware are not solid. A few of them are hollow. They are so made either for minimising weight or to serve some practical purpose. Goblets and flower vases, etc., are examples of such hollow articles. Solid ones are cast without any difficulty, entirely in a single casting, but pieces which are hollow are cast in one of two ways. According to the first method, two equal halves of the article are cast by the darza box method in separate castings and soldered together. According to the other process, a clay core is made in the moulding sand and placed in the mould to form the inner form of the casting, and then the whole vessel with the exception of the base is made in one casting.

Articles with flat bases cannot be straightaway made in one casting. Typical of this type of articles are boxes and ash trays. A separate plate of the required size and shape is cast and soldered to the main piece.

Articles having a lid undergo an extra stage in their making, namely hinging. The lid is cast and the usual process upto inlaying is carried on. Then the lid is hinged to the main body of the piece by means of German silver wire

Soldering is generally completed prior to the stage of colouring. Hinging is done even after the final stage of work, *viz.*, polishing.

Designs

The artisans have adopted both geometrical and conventional patterns as the designs for inlay.

The geometrical patterns include lines, spots, spirals, rectangular and rhombic frets, chequer, chevrons, etc. Conventional patterns include croix pattee, lozengers, poppy plant with flower and imbricate or fish scale patterns, etc.

The artisans have not bound themselves down to any rigid rules regarding the use of any design on a given type of article. The designs, viz., geometrical patterns or conventional patterns, have been inlaid individually or in combination on Bidriware of different types according to the fancy of the artisans.

The trays and plates consist of floral designs as well as figures like the Tajmahal, the Charminar, the twelve signs of the Zodiac (Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricorns, Aquarius and Pisces), a Lambani, a dancing girl and female figures representing the Raags, Raguni, Bhairavi, Todi, Malhari, Sohini, Pahadi, Ramkali and Ashavari.

Articles Produced

During the last century and at the beginning of the present century the artisans were interested in producing articles of Bidriware that pleased the aristocrats. The articles made by them included vases, hand-washing basins, ewers, hukkas, spittoons, cups, flagons, dishes, cosmetic boxes, candle-sticks and paper weights. These articles are costly and antiquated. Many are preserved at the Salarjung Museum and the Archaeological Museum at Hyderabad.

Change in customs and tastes in the course of subsequent years induced the artisans to launch on the manufacture of articles like cigarette cases, ash trays, buttons, light stands, bangles, bracelets, broaches, ear-rings, medals, bowls, trays, photo and mirror frames, bust size images, sari-pins, tie-pins, stationery sets like paper cutters, paper weights, clips, pen stands and other utility articles.

Ash-trays

A common item of the present day Bidriware is the ash tray. These trays are made in various shapes of which there are at least about twenty, which have become quite popular, namely round, round half-closed, round flat, tyre shaped, hexagonal, polygonal, triangular, rectangular, diamond shaped, oval, in the shape of a heart, shield, egg, fish, shoe, aeroplane, star, duck, elephant and tortoise.

In making ash trays, sides with top are made in one casting and the flat base in the second casting after which the two parts are soldered together. Inlaying is done only on the top. The designs commonly seen on ash trays are floral traceries, creepers, poppy leaves and zig zag linesh etween two parallel lines.

Boxes

Bidri boxes are made in rectangular shape of sizes $6\frac{1}{4}'' \times 3\frac{1}{2}'' \times 2''$, $6'' \times 4'' \times 1''$, $4\frac{3}{4}'' \times 3\frac{1}{2}'' \times 1\frac{1}{2}''$, $7'' \times 3'' \times 1\frac{3}{4}''$, etc. Parts of boxes are made in three castings, namely (i) the casting of the 4 sides, (ii) the casting of the base and (iii) casting of the lid. The base is soldered at the bottom of the sides and lid is hinged by means of German silver wire. The sides as well as the lid of the boxes are inlaid. The designs on the sides are poppy plants with flower, flower traceries, continuous loop coils, scrolls and plait ornaments. The designs on the lid are 'Butas', Dhalia or other flowers in lozenges, scrolls and flower traceries.

Powder and *Kumkum* (vermilion powder) boxes are made in several shapes like that of the mango, oval, heart and shell. Sides of these boxes are inlaid with geometrical designs like straight and zig-zag lines, and the lid is inlaid with designs like the poppy plant, flower traceries and creepers.

Trays

Trays are usually made in a single casting. They are made in shell, oval, leaf, hexagon and rectangle shapes and in different sizes. The shallow part of the tray is inlaid with designs of flower traceries, creepers and scrolls.

Plates

Plates of diameters ranging from 4" to 10" are made in a single casting. The designs of the plate, however, deviate from the normal geometrical and conventional patterns. Plates are inlaid with figures of the Tajmahal, Charminar, the twelve signs of Zodiac, figures of Lambani, dancing girls, and female figures representing the *raags Raguni, Bhairavi, Todi, Malhari, Sohini, Pahadi, Ramkali* and *Ashavari.*

Flagons and Vases

These two articles are made in different sizes and shapes. They are made in two castings. The two halves of the articles are soldered together, each having been cast separately. They are also made in a single casting by using a 'core'. However, the base of vase or goblet is cast separately and soldered to the main piece.

The designs on the vases and goblets consist of assorted patterns of geometrical and conventional designs.

Figures

Busts of Negro women, Ajanta damsels inspired by paintings in the Ajanta caves, heads of Buddha and Gandhi, and full-size figures of dancing girls are made. These figures are not cast in the round but are in frontal relief only. Ornamentation of these figures is made by silver inlay.

Buckles, broaches, bangles, bracelets, buttons, agarbathi stands, necklaces, spoons, pendants, napkin rings, ear tops, ear rings, sari-pins, and tie-pins are made in Bidriware with a view to selling these articles at moderate rates. Simple geometrical designs involving only a little labour are chased and inlaid on these articles.

Paper clips are made in stylished shapes of human hands. Paper weights are made in playing card shapes of hearts and clubs. Paper cutters are made in the shapes of knives, swords and daggers.

Snake Panthi, consisting of a figure of a cobra and a 'panthi' attached to its hood to hold oil, is a recent addition.

The peacock lamp is a table lamp. The figure of a peacock is cast in the round and ornamented with silver inlaying from beak to tail. A bulb holder is fixed on its head.

By and large, as Bidriware articles are considered as works of metal art, their prices are based mostly on their fine workmanship. The prices, therefore, vary within a very wide range and any price list of these articles would only serve as a very rough guide. Still, from the commercial point of view the Union has prepared a price list of the articles of Bidriware and an extract is given as Appendix II.

CHAPTER III

ECONOMIC AND GENERAL ASPECTS

Cost of Production

Some difficulty was experienced in preparing the cost structure as neither the Co-operative Societies nor the proprietary concerns have maintained any records regarding the raw materials, fuel, and the labour and the time consumed in the making of any article. Inspite of this difficulty, experienced craftsmen who were contacted in this connection have given the following cost analysis of a few items.

I. Ash ttray—hexagn of big size $5\frac{1}{2}$"

Cost of raw materials :

		Rs.	Rs.
Zinc	..	0.75	
Copper	..	0.15	
Silver	..	0.60	
Others	..	0.25	1.75
Fuel	..	0.60	0.60
Cost of labour :			
Moulding charges	..	0.25	
Filing	..	0.90	
Designing	..	0.50	
Chasing and inlaying	..	2.75	
Buffing	..	1.25	
Colouring	..	0.25	5.90
Total	..		8.25

II. Box—rectangular size 6"×4"×$1\frac{1}{2}$"

Cost of raw materials :

Zinc	..	4.00	
Copper	..	0.60	
Silver	..	3.00	
Others	..	0.40	8.00
Fuel	..	2.50	2.50
Cost of labour :			
Moulding charges	..	3.00	
Filing	..	5.00	
Designing	..	2.50	
Chasing and inlaying and buffing.		20.00	
Colouring	..	1.00	31.50
Total	..		42.00

III. Cigarette case to hold 10 cigarettes

Cost of raw materials :

		Rs.	Rs.
Zinc	..	1.70	
Copper	..	0.30	
Silver	..	1.45	
Others	..	0.20	3.65
Fuel	..	0.90	0.90
Cost of labour :			
Moulding charges	..	0.50	
Filing	..	0.75	
Designing	..	2.00	
Chasing, inlaying and buffing		8.00	
Colouring	..	1.00	12.25
Total	..		16.80

IV. Plate of Zodiac—8" diameter

Cost of raw materials :

Zinc	..	1.55	
Copper	..	0.25	
Silver	..	1.35	
Others	..	0.25	3.40
Fuel	..	0.90	0.90
Cost of labour :			
Moulding charges	..	0.40	
Filing	..	4.00	
Designing	..	5.00	
Chasing, inlaying & buffing	..	12.00	
Colouring	..	1.00	22.40
Total	..		26.70

V. Tray—rectangular 6"×3"

Cost of raw materials :

Zinc	..	1.50	
Copper	..	0.25	
Silver	..	1.30	
Others	..	0.25	3.30
Fuel	..	0.90	0.90
Cost of labour :			
Moulding charges	..	0.75	
Filing	..	4.00	
Designing	..	2.50	
Chasing, inlaying & buffing	..	6.00	
Colouring	..	0.50	13.75
Total	..		17.95

This cost analysis reveals that 25 per cent of the cost is accounted for by the raw materials. Fuel and wages form 75 per cent of the cost. The Co-operative Societies sell the articles to the Union as well as to the dealers, the margin of profit varying from 5 to 10 per cent.

The question of loss arises when the entire work is got done from hired labour. In the proprietary concerns the work is carried on by household labour, and the articles are always sold to a cost more than the expenditure met to secure the raw materials used. As such the proprietor who works with household labour with or without hired labour always stands to get a profit. But the margin of profit varies according to the circumstances of each case. In the Co-operative Societies the promoters work with hired labour. On account of this, the profit margin of the Co-operative Societies is generally much the same as that of the proprietary concerns.

Capital

The total productive capital invested in this craft is about Rs. 50,000. Of this capital, a sum of Rs. 4,000 is invested on tools and instruments and a sum of Rs. 46,000 is the circulating capital. All the Co-operative Societies and 3 of the private workshops are located in rented buildings. The independent workers work in their own houses. The living room serves as the workshop also during the part of the day when they are engaged in the craft. So there is no expenditure involved towards cost of building for the craft.

In the case of proprietary concerns the investment on tools is drawn from the earnings of the proprietors, while the raw materials are purchased both from their own resources and on credit basis also.

In the case of Co-operative Societies the investment of the Society on fixed capital is from the amount advanced by the promoter and that on raw materials is partly from the loan received from the promoter and partly from the loan advanced by the Bidri Union.

Production

During 1962--63 Bidri articles worth Rs. 95,000 were produced at this centre, and the value of raw materials and fuel used in the industry was round about Rs. 30,000.

As mentioned earlier the profit or the wages of an artisan varies in this craft and he seldom experiences loss, unless he has produced an article solely by using hired labour, which is indeed a very remote contingency.

Marketing

Individual pieces of finished articles are wrapped in kraft paper before they are kept in a container for storage, for avoiding scratches which may disfigure the articles if they are piled up without a wrapper. After wrapping, the articles are placed in steel trunks and deal wood boxes. Independent workers who work mainly with household labour store the articles hardly for about a month or two. They then take them in steel trunks either by bus or by trani to Hyderabad and sell them to private dealeras. Proprietors who run workshops with household labeur as well as with hired labour stock the Bombay by train, and sell them to the dealers there finished articles for 3 to 4 months and carry them to hold labour as well as with hired labour stock the or to the Handicraft Emporia. Promoters of the Co-operative Societies stock these articles for three to four months and then hand them over to the Bidriware Union. The Union in its turn takes the responsibility of marketing the articles. During 1962-63 the Union could not buy a considerable quantity of these articles as it was already having a heavy stock bought during 1961-62. As such the promoters had to depend on some other agency to market their goods. During 1961-62 they sold the articles at Bombay and Hyderabad.

The Co-operative Societies and the Union display articles for sales in their sales sections. But the local sales in the centre, where the craft is carried on, are negligible.

A recent trend in this craft is the swing towards the production of articles required for daily use in these days in preference to fancy articles of luxury. Such articles of luxury were made in olden days as they were purchased by the Nawabs and Sultans of those days.

Articles made at present find a market throughout the year and the artisans are prone to dispose them-of through the dealers at Hyderabad and Bombay. They never take the articles to any of the fairs held in or outside the district. At the time when one consignment is sold the dealers will inform the artisans about their further requirements giving

details as to the type of articles. After their return to Bidar the artisans attend to the making of such articles as are demanded by the dealers. The artisans have expressed that the dealers settle the accounts only after the articles are supplied and pay no advance.

Household of the Craftsmen and their family composition

Of the 61 Bidri worker households, 10 are 3 member households, 10 are 4 member households, 11 are 5 member households, 4 are 6 members households 8 are 7 member households, 5 are 8 member household,s 8 are 9 member households ,2 are 10 member house holds 1 is 11 member house hold, 1 is 13 member household and 1 is 16 member household.

Fifty craftsmen households out of 61 households are put up in own houses. Eight reside in rented houses and 3 are living in rent free quarters.

The houses of the craftsmen are concentrated in Kusumgalli of Bidar. However, a few of them are distributed in different parts of the town. The houses are 2-3 roomed tenements with mud walls and mud floorings. They are roofed with zinc or country tiles. The surroundings of the houses of the craftsmen are not clean. None of the houses of Bidri workers is provided with tap or electric light. They take water from public taps and use kerosene lamps.

Out of the 61 craftsmen households at Bidar, 29 households consist of head, wife and unmarried children, 13 households consist of head, wife, married son(s) and other unmarried children, 11 households consist of head, wife, unmarried children, widowed mother and other members, 5 households consist of unmarried head, widowed mother, brothers and/or sisters, 3 households consist of widowed head and unmarried children.

The elderly male person in the household manages the affairs of the household and is the head of the household. When children are young the widowed mother looks after the household affairs. The craftsmen work for about 12 hours a day and find little time to take part in recreational activities. Occasionally they go to films. They have not, so far, formed a club or a common recreation centre in the locality.

Economic Condition

At Bidar 61 households are engaged in the craft of Bidri. The total number of members belonging to these 61 households is 377 (141 males, 106 females and 130 children below 14 years of age). The heads of 38 households are Bidri workers. The heads of the other 23 households are engaged in other occupations either as employees or as independent workers. Of the 61 households, 27 are depending on bidri work alone, 17 households are pursuing it as principal occupation and 17 others are pursuing it as subsidiary occupation.

In the 61 households in all 144 persons are gainfully employed. Of them 96 are bidri workers and the other 48 persons are pursuing other occupations.

Of the 96 persons engaged in the craft of bidri 9 are in the age-group 0-14, 67 are in the age-group 15-34, 14 are in the age-group 35-50 and 6 are aged above 50 years.

Out of 96 bidri workers 49 are working in the 6 Societies as employees on monthly salary, and of these 49 employees, 17 work as independent bidri workers at home also, after working in the Society between 10 A.M. and 5 P.M. 32 of them work as bidri workers for wages in private workshops. Ten are owner workers. Eleven are unpaid family enterprise workers. Sixteen are employed under private bidri workers. Of the remaining 10, 3 are promoter workers of the Societies and 7 are members of the promoter's households and they work in the respective societies financed by them as workers on monthly salary.

For 17 households bidri craft is the principal occupation. The number of members engaged in the subsidiary occupation and the percentage of income from the craft of bidriware to the total income of the households are as follows :

Sl. No.	*No. of bidri workers*	*Subsidiary occupation of workers*	*No. of workers in subsidiary occupation*	*Percentage of income from the craft to the total income of the household.*
1	2	3	4	5
1.	1	Bidi makers ..	2	52
2.	2	Bidi leaf contractor	1	75
3.	2	Peon in Excise Dept.	1	54
4.	2	Compounder ..	1	63

1	2	3	4	5
5.	1	Basket maker ..	2	77
6.	1	Firewood seller ..	1	70
7.	1	Fruit seller ..	1	70
8.	3	Peon in Tahsil Office	1	77
9.	2	Cartman ..	1	54
10.	1	Cultivator ..	1	60
11.	2	Bidi maker ..	1	73
12.	2	Tailor ..	1	80
13.	1	Fisherman ..	1	70
14.	3	Baskot maker ..	2	83
15.	1	Fruit seller ..	1	80
16.	1	Shop assistant ..	1	77
17.	1	Bidi maker ..	1	60
	27		20	

For 17 households the craft is a subsidiary occupation. The number of members engaged in the principal occupation of the household and the percentage of income from the craft to the total income of the household are as under:

Sl. No.	*No. of bidri workers*	*Occupation*	*No. of members engaged*	*Percentage of income from bidri craft to the total income of the household.*
1	2	3	4	5
1.	2	Flour Mill Owner and Instructor in R.A.T.I.	1	40
2.	2	Police Constable ..	1	45
3.	1	Flower Seller ..	1	25
4.	1	Cycle rickshaw driver.	1	40
5.	1	Peon in Education Department.	1	45
6.	1	Peshkar ..	1	25
7.	1	Butter seller ..	1	45
8.	1	Basket makers ..	4	
		Shop assistant ..	1	43
9.	1	Trader ..	1	25
10.	1	Cycle Rickshaw Driver.	1	47
11.	1	Chowkidar ..	1	38
12.	1	Goldsmith ..	1	
		Cycle Shop assistant	1	
		Ambar Charaka ..	1	40
13.	1	Trader ..	1	
		Lorry Driver ..	1	30
14.	1	Chowkidar ..	1	40
15.	1	Driver ..	1	18
16.	1	Private Tutor ..	1	
		Supari worker ..	1	15
17.	1	Bidi maker ..	2	15
	19		27	

The income of a household from all sources is taken into consideration to decide whether the craft is pursued by a household as a principal occupation or as a subsidiary occupation. A household which derives more than 50 per cent of its total income from this craft is deemed to be pursuing this craft as the principal occupation, while a household which derives less than 50 per cent of its income from the craft is deemed to be pursuing the craft as a subsidiary occupation.

So far as the earnings of these households from the craft are considered, 5 households earn less than Rs. 25 a month, 16 households earn Rs. 26—50 a month, 13 households earn Rs. 51—75 a month, 11 households earn Rs. 76—100 a month, 10 households earn Rs. 101—150 a month, 3 households earn Rs. 150—200 a month and only 3 households earn more than Rs. 200 a month.

Expenditure pattern

The craftsmen spend the major portion of their income on food stuffs like cereals, pulses and oils and on ancillary requirements like pan, supari, tobacco and bidi. After spending the amount on these items of consumption they are left with hardly any amount to spend on any other item.

The proprietors and independent craftsmen do not have any system to keep their domestic and enterprise accounts separate. From the amounts earned, they take a portion for purchase of raw materials and another portion for domestic expenses. The proportion of the enterprise expenses to that of domestic expenses is not constant. It varies according to the requirements of the craftsmen.

A craftsman will have normally two sets of dress. His usual wear is a shirt and trousers or pyjamas.

Articles made now-a-days are cigarette cases, pan boxes, trays, button sets, ash-trays and such other things which answer utilitarian requirements and find a ready market throughout the year. As such in making them the craftsmen find steady employment from local dealers.

Raw materials are easily obtainable from local dealers. The work of the craftsmen slackens only when the finished articles remain unsold.

An artistic bent of mind is the essential requirement for a person to take up the craft of Bidriware.

No strenuous manual labour is involved in the craft. The foundry part of the work is not much. The articles cast during a period of 3 days would keep a craftsman busy in inlay work and chasing and finishing for about a month. He works in shade and does not expose himself to sun or rain. As such, the craft, normally does not have any ill effects on the health of the craftsmen.

Migrants

As a result of reorganisation of States the district of Bidar was transferred to Mysore from Hyderabad. The Government of Andhra Pradesh informed the craftsmen that they could expect assistance from the Government only in case they settle within Andhra territory. As a result, about 25 of the craftsmen migrated to Hyderabad and settled down there. These craftsmen formed Co-operative Societies and continued to carry on their craft in the capital city of Andhra Pradesh. Consequently Bidar town lost its usual market at Hyderabad.

The migrant craftsmen have formed two Bidriware Co-operative Societies at Hyderabad. These two Societies are located in the same building. Both of them have independent production units. Production of Bidriware in these two societies during 1961-62 was Rs. 90,701 almost equal to the production of the 6 Co-operative and 11 proprietary establishments of Bidar town. During the same period the two Societies have sold Bidriware worth Rs. 65,337. The Handicrafts Emporium at Hyderabad buys regularly Bidriware worth Rs. 5,000 every month from these Societies. This feature has infused some confidence in the craftsmen regarding sales of their articles. The Union at Bidar is handicapped for want of an agency drawing stocks of finished articles regularly. It has undertaken printing and publication of a catalogue for publicity purposes. For this undertaking the Government has given a grant of Rs. 3,000 to the Union. The catalogue is under preparation. A steady sale of articles will be beneficial to the Union and through it to its members.

Co-operative Societies

There are at present six Bidriware Co-operative Societies at Bidar. One was closed down recently. A brief account of each of the six Societies now existing at Bidar, is given under:

(i) The 'Gulzar Deccan Bidriware Co-operative Society' was registered on 18th April 1951. The number of members on the roll is 35 and the share amount is Rs. 10. The Society has received a loan of Rs. 7,740 in 1955 from the Government. During 1958 many members of this Society migrated to Hyderabad. These persons formed Bidriware Co-operative Societies with production units at Hyderabad. At present this Society is functioning as the branch of the Society at Hyderabad, and the articles produced by this Society are marketed through the Society at Hyderabad. Seven workers make Bidri articles in the premises of this Society and they are paid monthly salary. Four of them receive a salary of Rs. 50 a month each, and 3 others receive Rs. 70, Rs. 38 and Rs. 15 respectively.

The annual production of Bidriware in this Society costs about Rs. 10,000. During the years 1954-55, 1955-56 and 1956-57 the Society produced articles worth Rs. 23,229, Rs. 25,458 and Rs. 21,440 respectively. From 1957-58 onwards the production has been reduced by 50% and the actual value of articles produced are as follows:

Year		Rs.
1957-58	..	10,946
1958-59	..	9,580
1959-60	..	8,795
1960-61	..	11,882
1961-62	..	10,185

(ii) 'Anmole Bidri Works Co-operative Society' was the second Bidriware Co-operative Society to be formed at Bidar. This Society was registered on 10th July 1952. There are 21 members in this Society. Thirteen persons including the President-*cum*-Financier and his son are engaged in producing bidriware. All of them are paid monthly salary. Out of 13 workers 2 are paid Rs. 60 each per month, 4 are paid Rs. 50 each per month, 2 are paid Rs. 30 each per month and 5 others are paid Rs. 55, Rs. 40, Rs. 35, Rs. 20 and Rs. 12 respectively.

(iii) The 'Rattan Bidriworks Co-operative Society' was registered on 30th July 1957 and the number of members on the roll is 26. Only 5 of them are working in the Society as employees on monthly salary and the salaries paid to them are Rs. 65, Rs. 60, Rs. 55, Rs. 45 and Rs. 17 respectively.

(iv) The 'Vijayahind Bidriware Co-operative Society' was registered on 1st July 1958. There are 12 members on the roll and 6 of them are paid Rs. 60 a month each, 4 others are paid Rs. 50, Rs. 35, Rs. 25, and Rs. 12 a month respectively.

(v) 'Ahmed Bidri Works Co-operative Society' located at Chidri is about two miles from the town proper. The number of members in this Society is 15, and 8 of them including the President and his 4 sons work in the Society and receive monthly salary. The monthly salaries of these workers are Rs. 80, Rs. 65, Rs. 50, Rs. 45, Rs. 45, Rs. 30, Rs. 20 and Rs. 20 respectively.

(vi) The latest of all the Societies is 'Azizia Bidri Workers' Co-operative Society' registered on 5th October 1960. There are 11 members in this Society. This Society is managed by 3 brothers belonging to the same household. The eldest of them is the Secretary and the second one is the President. These 3 brothers work in the Society with eight other workers and all of them receive monthly salary. The salaries of 3 brothers are Rs. 150, Rs. 100 and Rs. 55 respectively. Of the other 8 workers, 2 are paid Rs. 60 per month each, 2 are paid Rs. 20 per month, and the rest are paid Rs. 40, Rs. 50, Rs. 30 and Rs. 15 respectively.

These so called 'Co-operative Societies' are in fact proprietary concerns. They have been named as 'Co-operative Societies' by the proprietors and got registered as such only with the object of securing the facilities provided by Government to the Co-operative Establishments, like financial and supply of materials at subsidised rates.

The persons who finance the society take the profit and the members who work in the society are paid monthly salary.

Up-to-date accounts or the Audit Reports of these Societies are not available.

The total working capital of all these Societies is in the neighbourhood of Rs. 45,000 of which Rs. 3,000 is invested on tools and Rs. 42,000 on raw materials. The money for the working capital is got from the promoter who is the President or sympathiser of the Society concerned.

Out of the six societies, functioning at present, four were formed prior to, and the other two have been established after the formation of the new States in 1956.

Members who work in the Society receive monthly salary and the amount depends on the type of work that is entrusted to the member. The salary of designer and engraver ranges from Rs. 60 to Rs. 70 a month, and that of a filing and buffing worker ranges from Rs. 40 to Rs. 50 a month. The salary of moulders ranges from Rs. 30 to Rs. 40 a month and that of the boys who do odd jobs like colouring the ware and preparing raw materials ranges from Rs. 15 to Rs. 30 a month. The President or the Chief promoter of the Society fixes the salary of the workers.

Bidriware Union

On 2nd January 1960 the Bidriware Co-operative Societies at Bidar formed a Union, *viz.*, the 'Bidriware Co-operative Societies Union Ltd.'. It is a Co-operative Society with other Societies as its members. The object of forming the Union is to provide even distribution of aids and facilities to the member societies. The Union is also a marketing agency of Bidriware.

The Union was constituted by 7 Societies of which one was recently wound up. The share amount is Rs. 100 per share. Of the 7 societies, 5 are having 11 shares each, one has 6 shares and the other (the one which was wound up) is having one share.

The Union received a loan of Rs. 15,000 in May 1960 and Rs. 30,000 in March 1961 towards working capital. The working capital has been utilised for the purchase of finished products from the member societies, for purchase of zinc from the Government for supply to the member societies and to meet the establishment charges of the Union which include salary of staff, rent of the office building.

The Union is located in a rented building consisting of 2 rooms. The front room is used as a showroom *cum* office and the interior one is used to stock both zinc and finished articles.

The Union has purchased Bidriware worth Rs. 30,100 from its member Societies during the years 1961-62 and 1962-63. Details of the purchase are as follows :

Name of the Society	1961-62	1962-63
	Rs.	Rs.
1. Anmole ..	6,286	1,334
2. Rattan ..	3,254	..
3. Vijayhind ..	1,683	168
4. Ahmed ..	5,853	910
5. Azizia ..	8,904	1,708
Total ..	25,980	4,120

During 1961-62 the Union had on hand the loan amount it had got from Government. Besides it was the first year of purchase. As such it had no difficulty in buying articles costing nearly Rs. 26,000. In the subsequent year the Union could not make such huge purchases as it had a heavy stock of articles left unsold.

In the year 1961-62 the Union advanced Rs. 20,259 to the member Societies on the security of articles. This amount was due from those Societies. Details of this amount advanced to the Societies are as under :

Name of the Society		Rs.
1. Azizia	..	6,292
2. Anmole	..	4,747
3. Ahmed	..	4,316
4. Rattan	..	3,674
5. Vijayhind	..	1,230
Total	..	20,259

The working capital of the Union is Rs. 45,000. The entire amount has been received as loan from the Central Government. The rate of interest is 2½% per annum. The Union has repaid Rs. 6,000 together with interest.

The Union received the Government quota of zinc worth Rs. 10,938 in three consignments and has supplied the metal to its member Societies during 1961-62.

The promotion of marketing of Bidriware was one of the objects of forming the Union. With this end in view the Union buys articles made by its member societies. It does not receive articles from any individual or from proprietary concerns. The Union stocks the articles in its stores and also displays them in its show-room to promote local sales. It supplies articles against orders to emporia. As compared with the purchases made by the Union for 1961-62 and 1962-63, the sales show discouraging figures. The Union purchased Bidriware worth Rs. 30,100 during 1961-62 and 1962-63. It has, during the same period, sold articles worth Rs. 16,450 only. Nearly 50 per cent of the articles bought have remained unsold. It is not surprising that the Union has always had on hand, a heavy stock of finished articles unsold. The value of such articles as on the date of survey was about Rs. 25,000.

Training Centre

The Bidri School started by the Government of Hyderabad in the year 1913 was the first institution to train candidates in the Bidri craft. Sri Ramanna, a local goldsmith who was also a bidri worker was appointed as an instructor in this school. This school trained candidates in Bidri craft till 1938. In 1938 the Bidri School was merged with the local High School and training in the craft was given to every student of this High School. This scheme had only a brief existence of about five years.

In 1948 the Government of Hyderabad started another training centre, 'Bidriware High School.' In this school, along with Bidri craft, other occupational crafts like Lohari (smithy), Darji (tailoring) and leather craft were also taught to the alumni. This training centre imparted training for 10 years in the crafts mentioned above and later on the Bidri training section was transferred to the Hyderabad School of Arts at Hyderabad. The other sections were transferred to the training centre at Raichur.

At present Bidri craft is taught at the Artisan Training Institute at Bidar. The Institute was founded in 1960 by the Government of Mysore. During the period from its inception to the middle of 1963 the Institute had trained three batches of candidates in Bidri craft, and the fourth batch had commenced training at the time of the survey. The duration of the training is 12 months from April to March. In the first three batches trained, there were in all 46 candidates, of them 18 were from Bidar and 28 were outsiders. Fifteen candidates are undergoing training in the fourth batch. Trainees are paid monthly stipend. A local candidate is paid Rs. 20 per month and an outsider is paid Rs. 30 per month.

Of the 18 local candidates trained in the first three batches only 7 are working as Bidri craftsmen.

A selection committee selects the candidates to be admitted for training. This is done after an interview of the candidates. The candidate should have passed the final examination of primary school. Preference is given to candidates from Bidri worker families. Training is given in the various stages of

the craft from preparation of raw materials to finishing of articles after inlaying. At first training is given in the making of simple geometrical designs and later on conventional patterns are practised. In the beginning copper wire is used for inlay work and later silver is used.

Articles of Bidri made by the trainees are displayed in the Institute's Sales section. The articles being made by trainees, the workmanship cannot stand comparison with the articles made by whole time Bidri workers. The trainees of the first three batches made articles worth Rs. 884 of which 95 per cent of the articles were sold out.

The Institute does not have schemes for providing any assistance to ex-trainees.

CHAPTER IV

CONCLUSION

Till recently the Bidriware craft flourished under the encouragement of Nawabs and Sultans and Zamindars who had money to spend on objects of art without any considerations of utility. With the disappearance of artistocracy based on political power or land owning, and the emergence of a Socialistic Society, the craft cannot survive unless it adopts a "new look" and takes up production of articles of daily use on a large scale.

The economic depression preceding World War II witnessed a perceptible decline in the prosperity of this trade, particularly in view of the fact that these products are characterised more by their artistic excellence and display of creative imagination than by their utilitarian value. The fillip given to village crafts and cottage industries generally after ithe advent of independence has enabled a few craftsmen still to cling on to this avocation. They are now trying to at tune themselves to the changed times and produce articles of modern tastes and needs. In the articles they now produce is to be noticed a discernible tendency to satisfy the present day needs of the discerning public than to lay emphasis on mere fancy hings which lo not find a ready market.

With the limited field open for marketing, these articles which are expensive and not within the easy reach of the average buyer, these craftsmen have to struggle hard even for a marginal subsistence. This is primarily the reason why some among them have taken up to other subsidiary occupations for augmenting their income.

There is an urgent need to improve the craft on both the production and marketing sides, if this ancient and skilled industry is to survive. The existing Co-operative Societies have to be organised on sound lines and suitable measures should be devised to give necessary incentive to the craftsmen through Co-operatives for producing better marketable articles.

A steady sale of articles will provide continuous employment to the craftsmen. Some improvement should also be effected in the mechanism of production. Use of casting dies in lieu of the moulds employed at present, lathe for scraping and buffing machine will certainly go a long way to increase the out-put which in turn will increase the earnings of the craftsmen. In view of the inability of the craftsmen to individually own a lathe and buffing machine, the setting up of a common facility centre to meet the needs of craftsmen for all such modern appliance may be worth considering. If such and other measures in the direction of improving the living conditions of the craftsmen are not taken betimes by organisations interested in the expansion and improvement of handicrafts, the craft of Bidriware is apt to fade out gradually.

BIDRI CRAFT

APPENDIX I

LIST OF BIDRIWARE CRAFTSMEN AT BIDAR

Sriuths—

1. Gulam Sattar Siddiqui
2. Gulam Khaddus
3. Mohammed Shaffid Mehtab
4. Mohammed Usman
5. Mohammed Yasin
6. Mohammed Haniff
7. Mohammed Sattar
8. Abdul Azeez
9. Sheik Chand
10. Abdul Khader
11. Abdul Hakim
12. Janir Hussain
13. Abdul Nabi
14. Abdul Gaffoor
15. Sheik Ali
16. Abdul Rahman
17. Mohammed Ismail
18. Maqbool Pasha
19. Syed Latiff Rahman
20. Hafizu Rahman
21. Iqbal Ahmed
22. Yusuff Hussain
23. Abdul Khader
24. Mohammed Abdul Gaffoor

Sriuths—

25. Narayan Rao
26. Abdul Hameed
27. Abdul Razak
28. Mohammed Iqbal
39. Abdul Karim
30. Siddappa
31. Tulsiram
32. Manik Rao
33. Mohammed Mustan
34. Mohammed Sheriff
35. Siddappa
36. Gurappa
37. Abdul Hafiz
38. Abdul Hakim
39. Sheik Mahaboob
40. Mohammed Abdul Hameed
41. Sheik Mohammed
42. Abdul Samad
43. Abdul Wahab
44. Abdul Shaccoor
45. Bashir Ahmed
46. Chotimia
47. Rasul Sab
48. Syed Imamuddin

Sriuths—

49. Abdul Sattar
50. Nassiruddin
51. Sheik Ali
52. Abdul Rahim
53. Abdul Haleem
54. Mohammed Pasha
55. Sheik Ahmed
56. Kurshid Ahmed
57. Mukthar Ahmed
58. Aziz Ahmed
59. Nazir Ahmed
60. Abdul Khader
61. Mohammed Ismail
62. Mohammed Fazil
63. Shiek Ahmed
64. Abdul Hafiz
65. Mohammed Siddiqui
66. Mohammed Ahmed
67. Abdul Samad
68. Nazir Ahmed
69. Abdul Khader
70. Rafiuddin
71. Shefiuddin
72. Abdul Haq

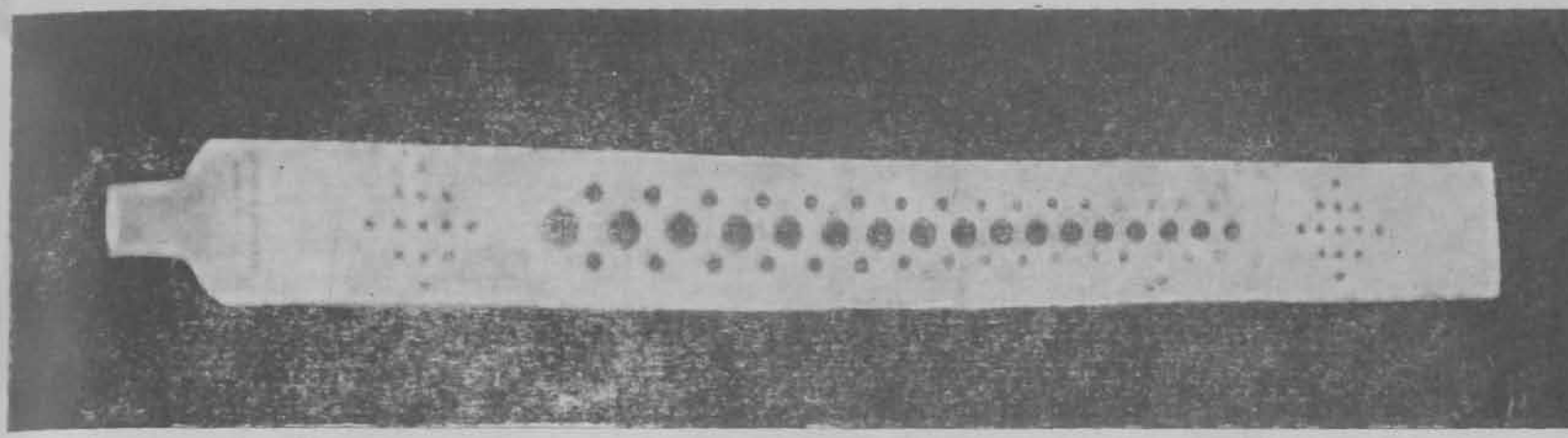
Sriuths—

73. Jagannath
74. Fathe Mohammed
75. Basappa
7. Sankarappa
78. Abdul Hameed
79. Mohammed Azimuddin
80. Mohammed Jamaluddin
81. Mohammed Moinuddin
82. Mohammed Mustan
83. Ibrahim Ali
84. Basavaraj
85. Safi
86. Bashiruddin
87. Mohammed Isa
88. Mohammed Isab
89. Ahmed Ali
90. Abdul Rahim
91. Mohammed Usman
92. Abdul Rahim
93. Moinuddin
94. Hameeduddin
95. Smt. Abida Begum
96. Smt. Sakuntala

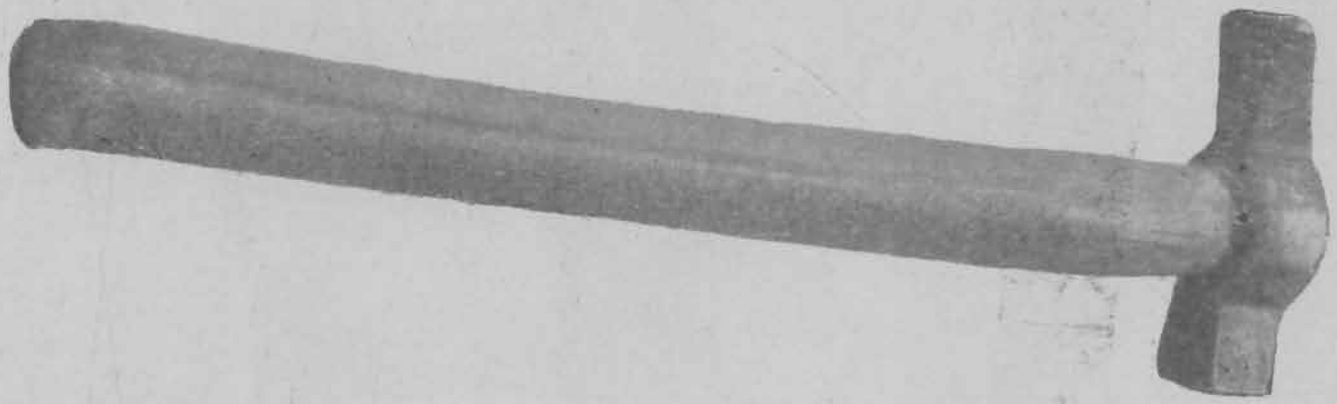
APPENDIX II

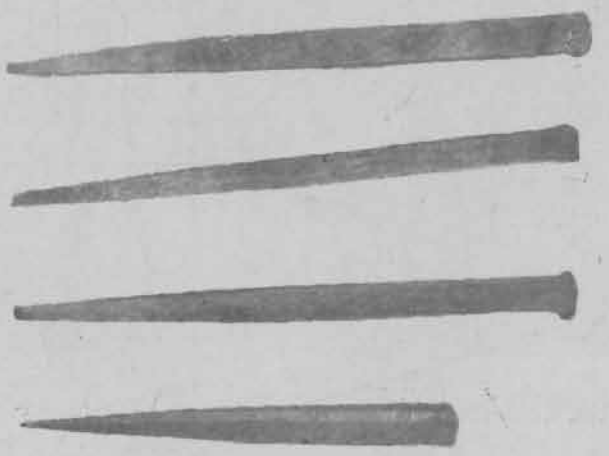
PRICE LIST OF BIDRIWARE ARTICLES

	Rs.		Rs.
Ash-trays ..	1.75 to 12.00	Pendant ..	2.00 to 3.00
Boxes ..	10.00 to 250.00	Goblets ..	35.00 to 300.00
Powder and Kumkum boxes ..	2.50 to 10.00	Trays ..	10.00 to 45.00
Buckles ..	2.00 to 2.50	Pin trays ..	2.50 to 5.00
Broaches ..	1.50 to 3.00	Plates ..	12.50 to 50.00
Bangles ..	1.50 to 3.00	Paper clip ..	2.00 to 3.00
Buttons set ..	3.00 to 35.00	Paper weight ..	3.00 to 5.00
Cigarette cases ..	12.00 to 45.00	Paper cutters ..	1.50 to 2.50
Figures ..	12.00 to 40.00	Napkin ring ..	2.50
Flower vases ..	20.00 to 100.00	Ear tops ..	2.00 to 3.00
Photo frames ..	12.00 to 40.00	Tie pin ..	3.00
Agarbathi stand ..	8.00 to 15.00	Bracelets ..	12.00
Necklace ..	12.00 to 20.00	Snake panthi ..	12.00
Spoons ..	1.50 to 2.00	Peacock lamp stand ..	100.00



1. 'Tharpatti' used for reducing the gauge of silver wire

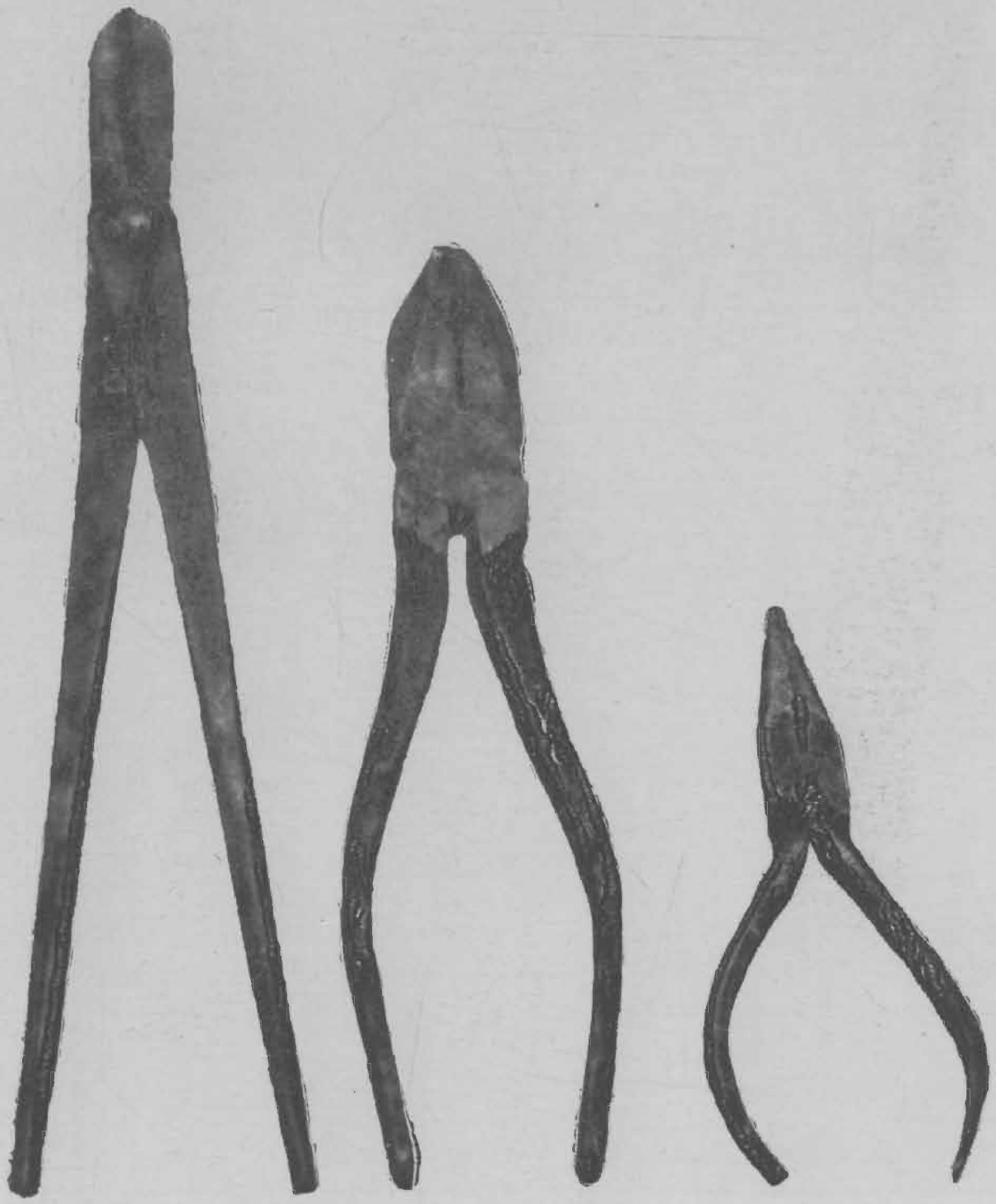




2. Tools for chasing and inlaying—hammer and chisels



3. Bent and straight scrapers employed at the final stages of smoothening of a bidriware



4. Metal cutter and pliers are essential tools for the craft

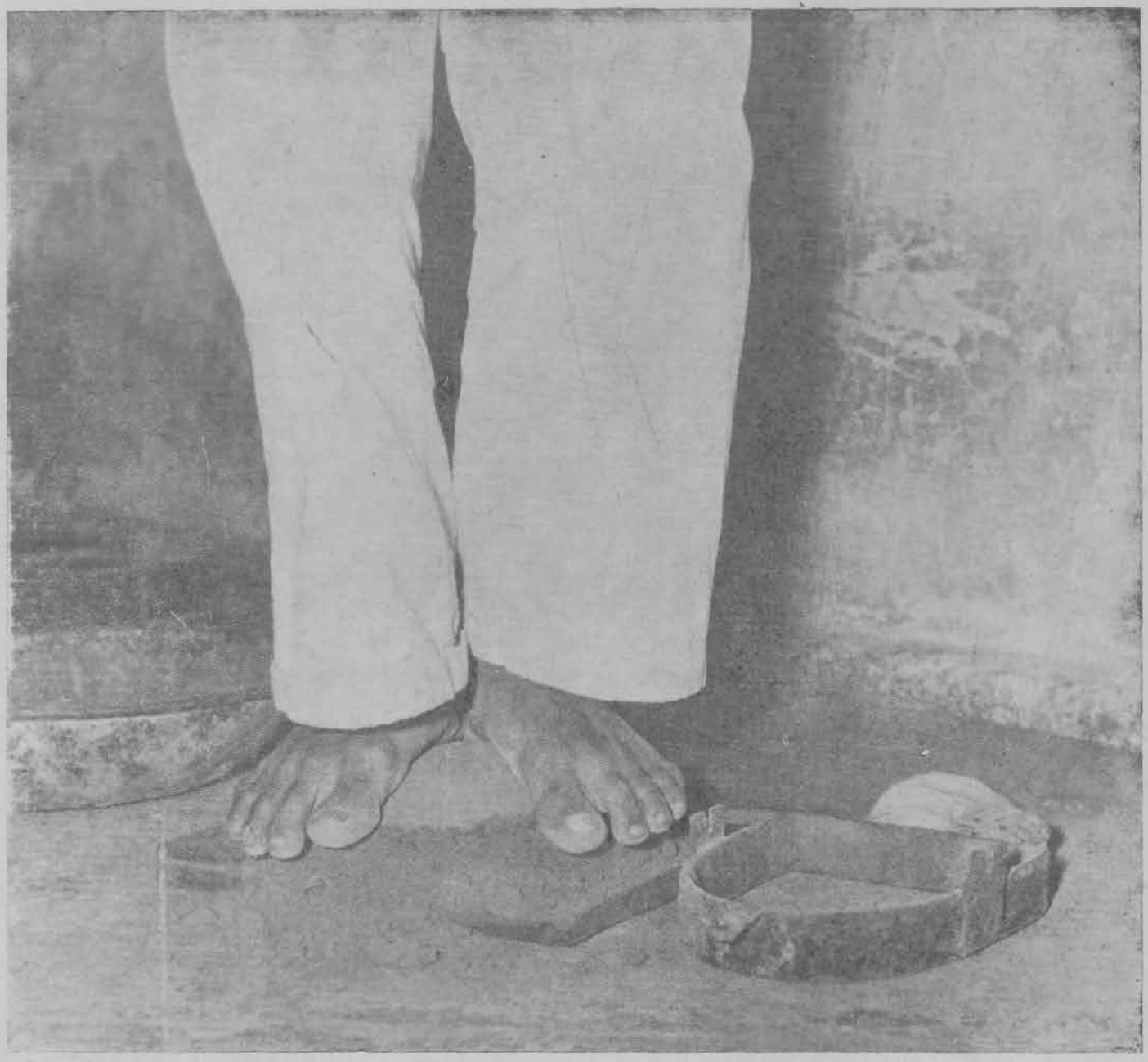


5. Graphite crucibles are the receptacles employed for melting the alloy

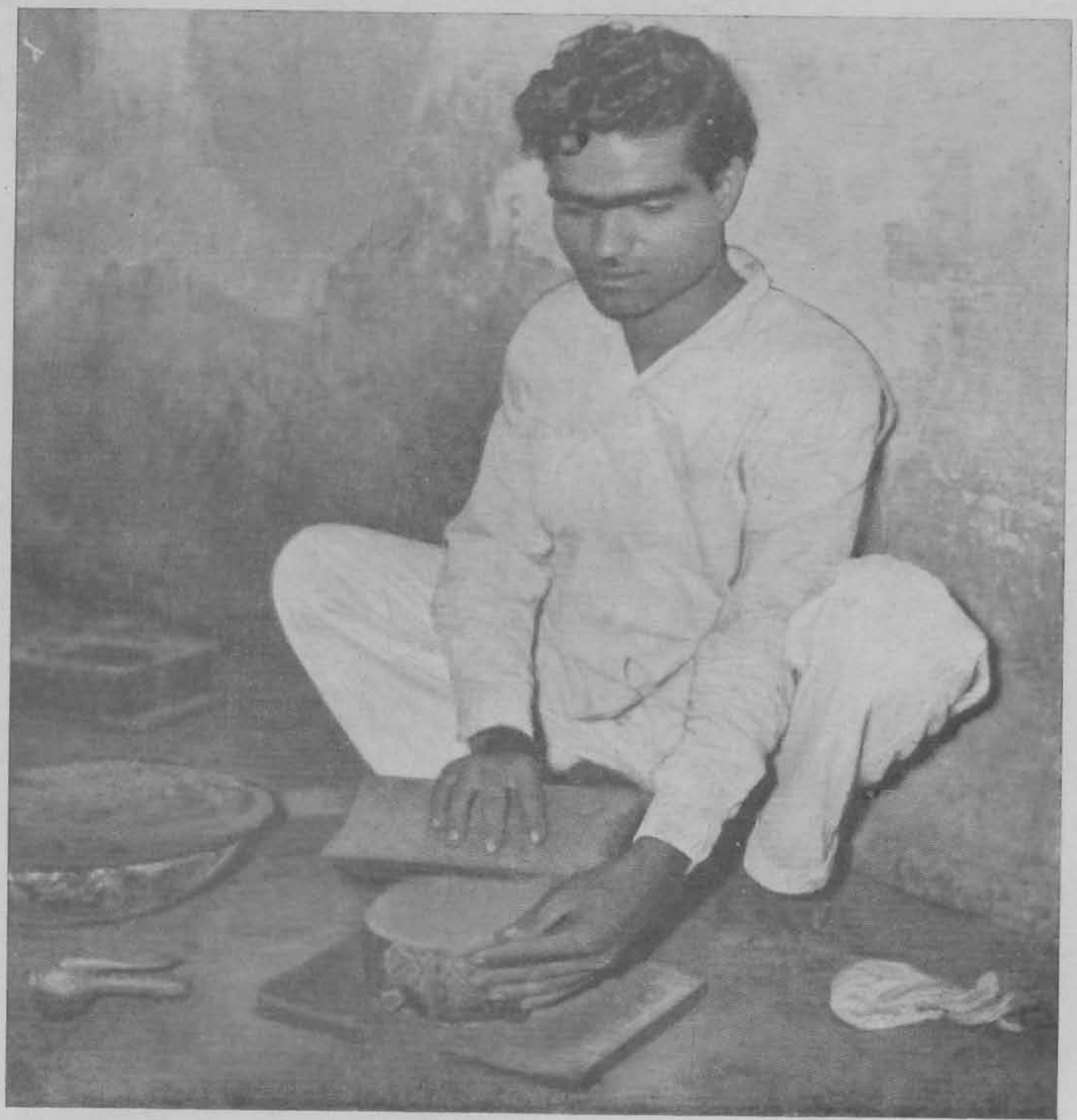


6. Making of mould to cast a flagon.

The pattern of the flagon is placed in the centre of the 'Darza.' The moulder is ready to dust the ash tied up in a cloth, on the pattern.



7. After ramming the recess of the 'Darza' with mouiding sand, the moulder presses it well by his heels



8. Moulding sand left above the flask is levelled to the edges of Darza by means of a wooden blade



9. The impression of the pattern left on the moulding sand



10. The molten alloy is poured into the mould through the feeding head of Darza



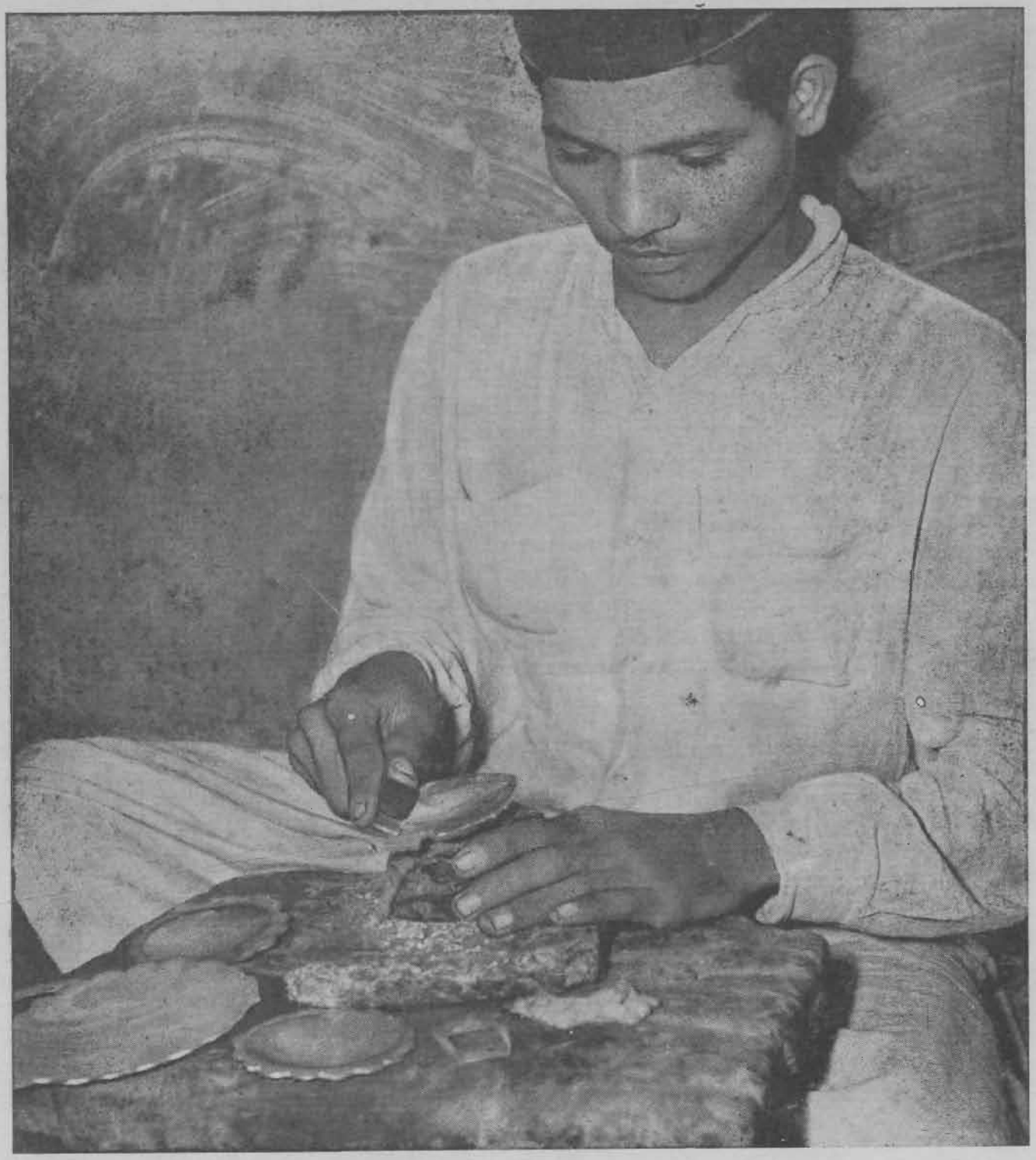
11. The mould is split and the cast piece is ready for withdrawal from the mould



12. The moulder is scraping off the moulding sand sticking to the cast pieces. The piece is to be trimmed by removing the runners



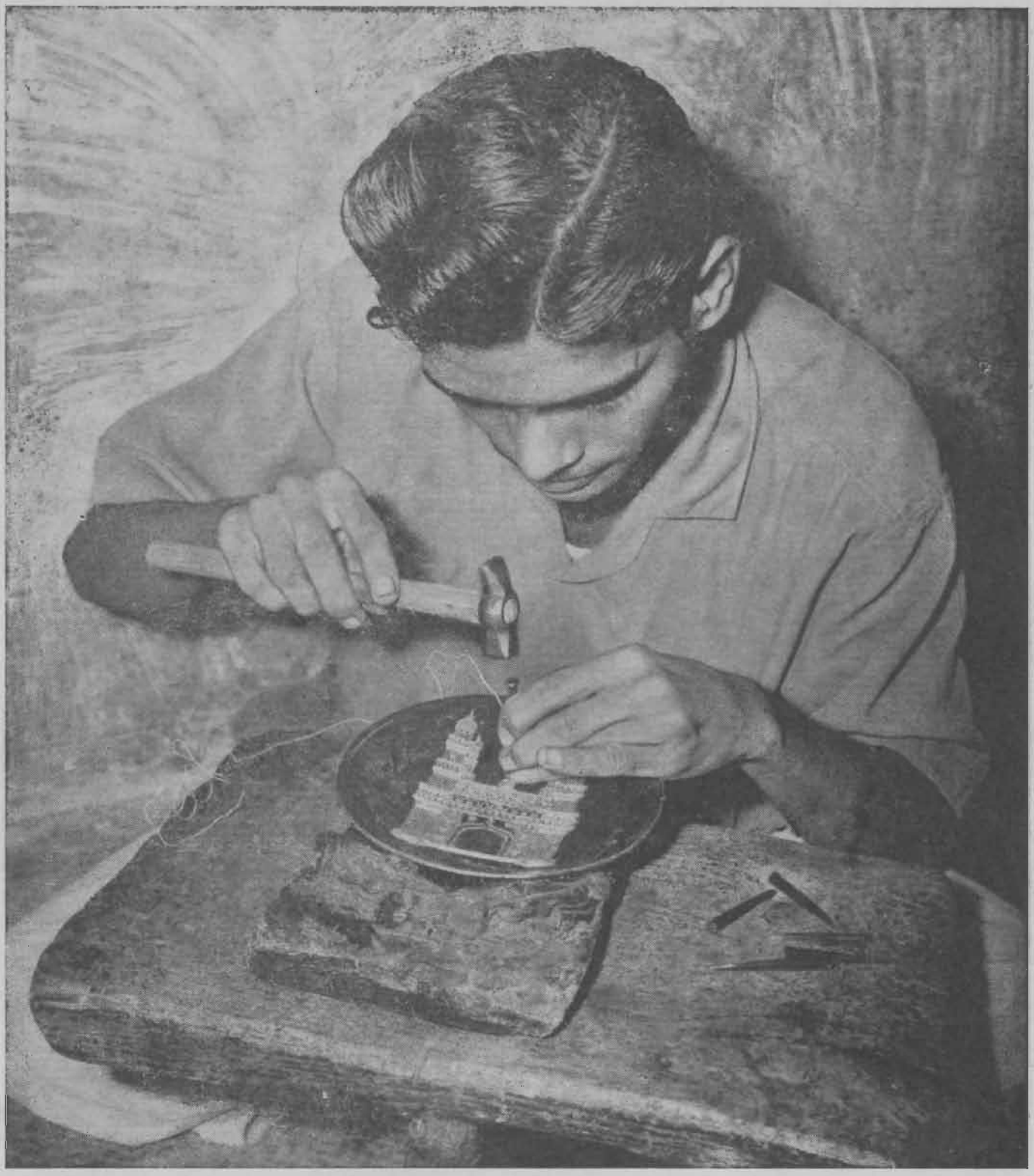
13. Filing is the stage of work after casting. A craftsman is filing a bidri box.



14. Bidriware is scraped at the final stage of smoothening



15. A designer scratching the figure of Tajmahal on a piece for chasing. The plate is smeared with the solution of copper sulphate



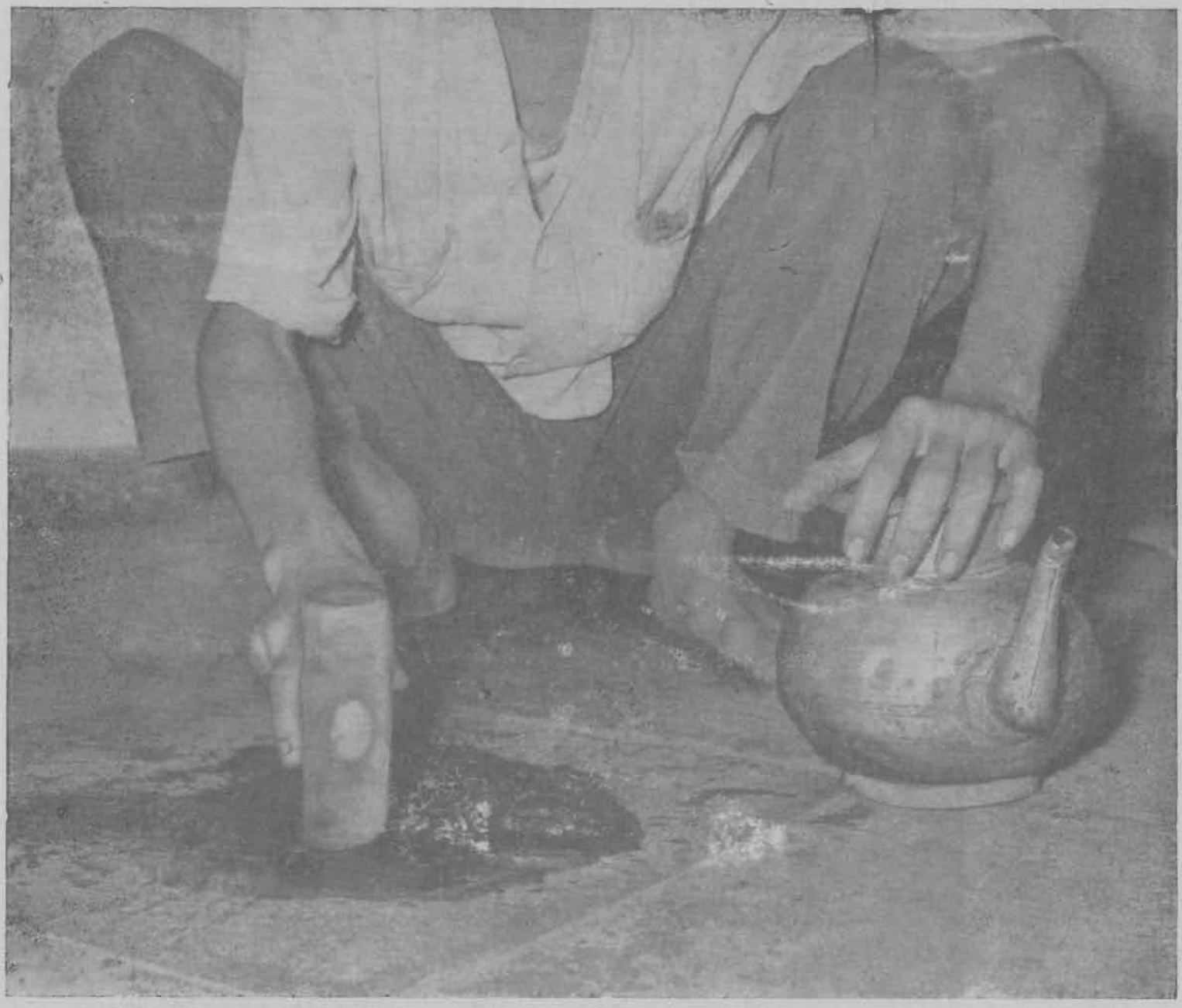
16. Inlaying of silver wire. The design is the figure of Charminar



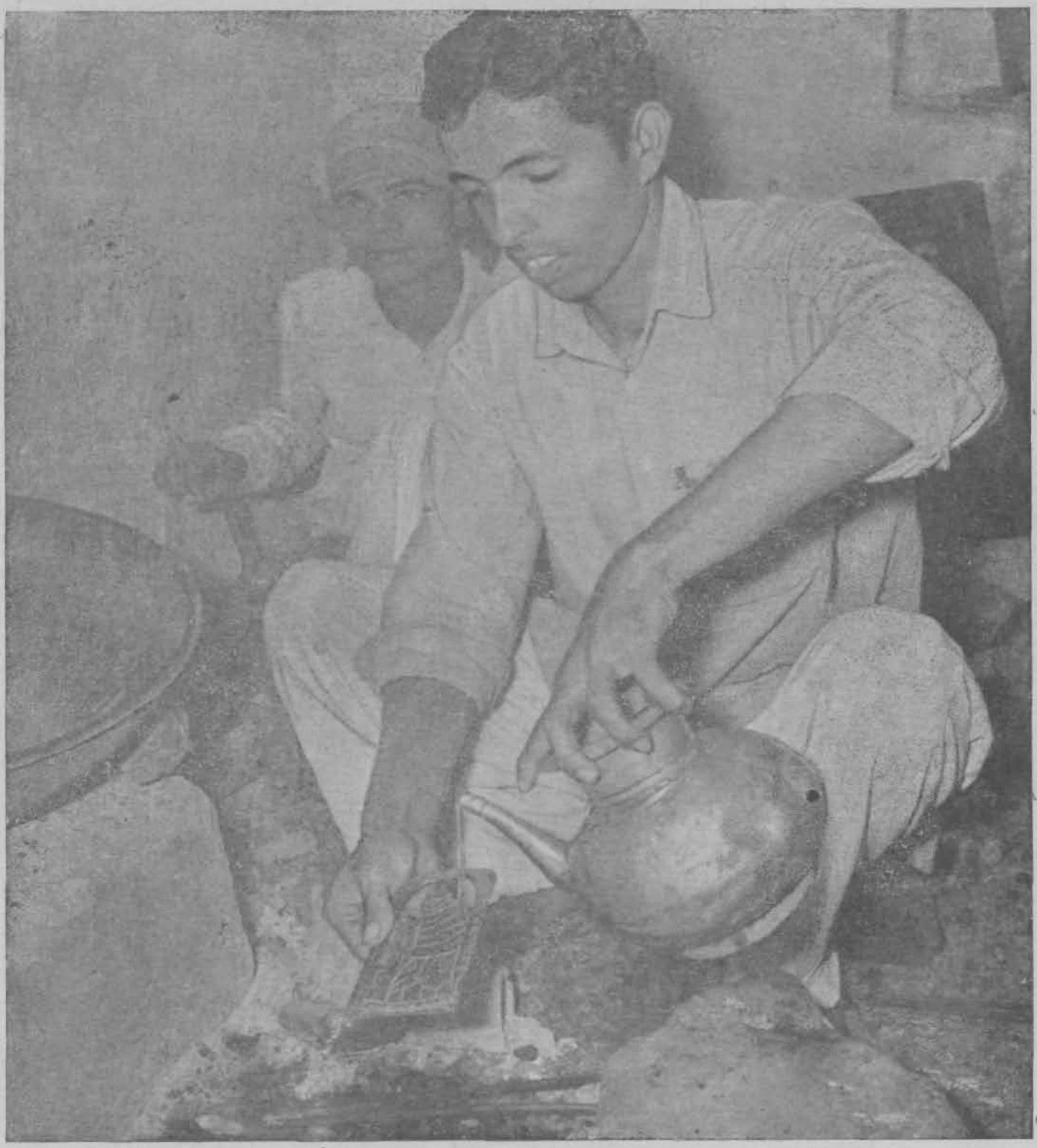
17. A craftsman inlaying silver sheets on the side of a box



18. A craftsman at the final stage of inlaying the lid of a box



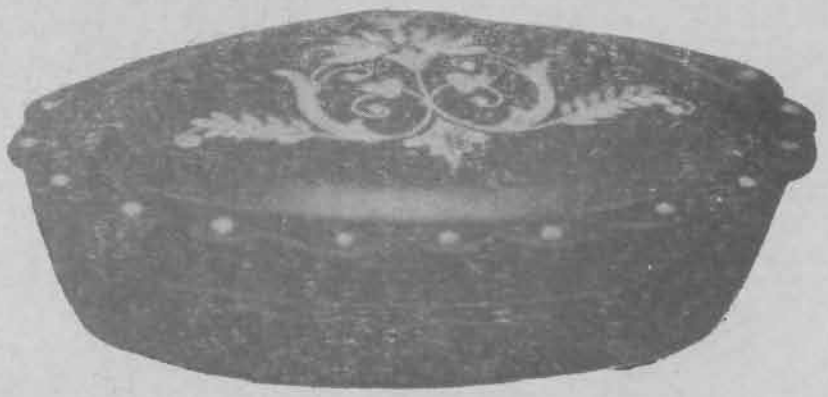
19. Mixing of 'Rangachadaneke Matti' and ammonium nitrate for colouring the bidriware



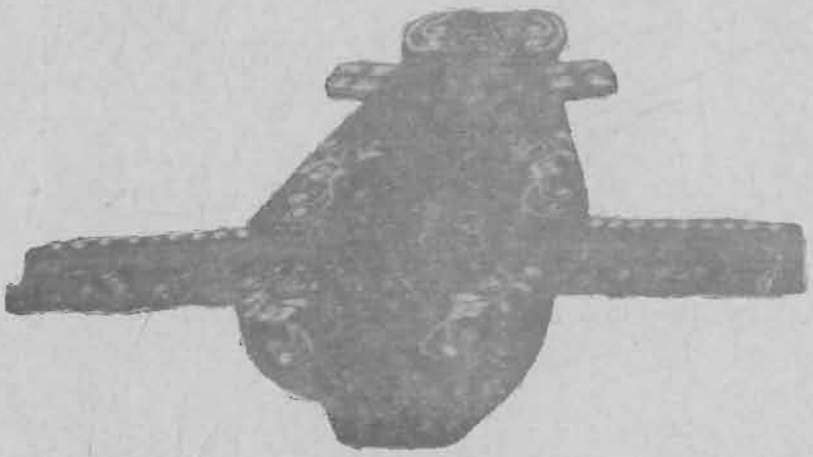
20. The bidriware after immersing in the boiling solution of Rangachadaneke Matti and ammonium nitrate is washed in cold water



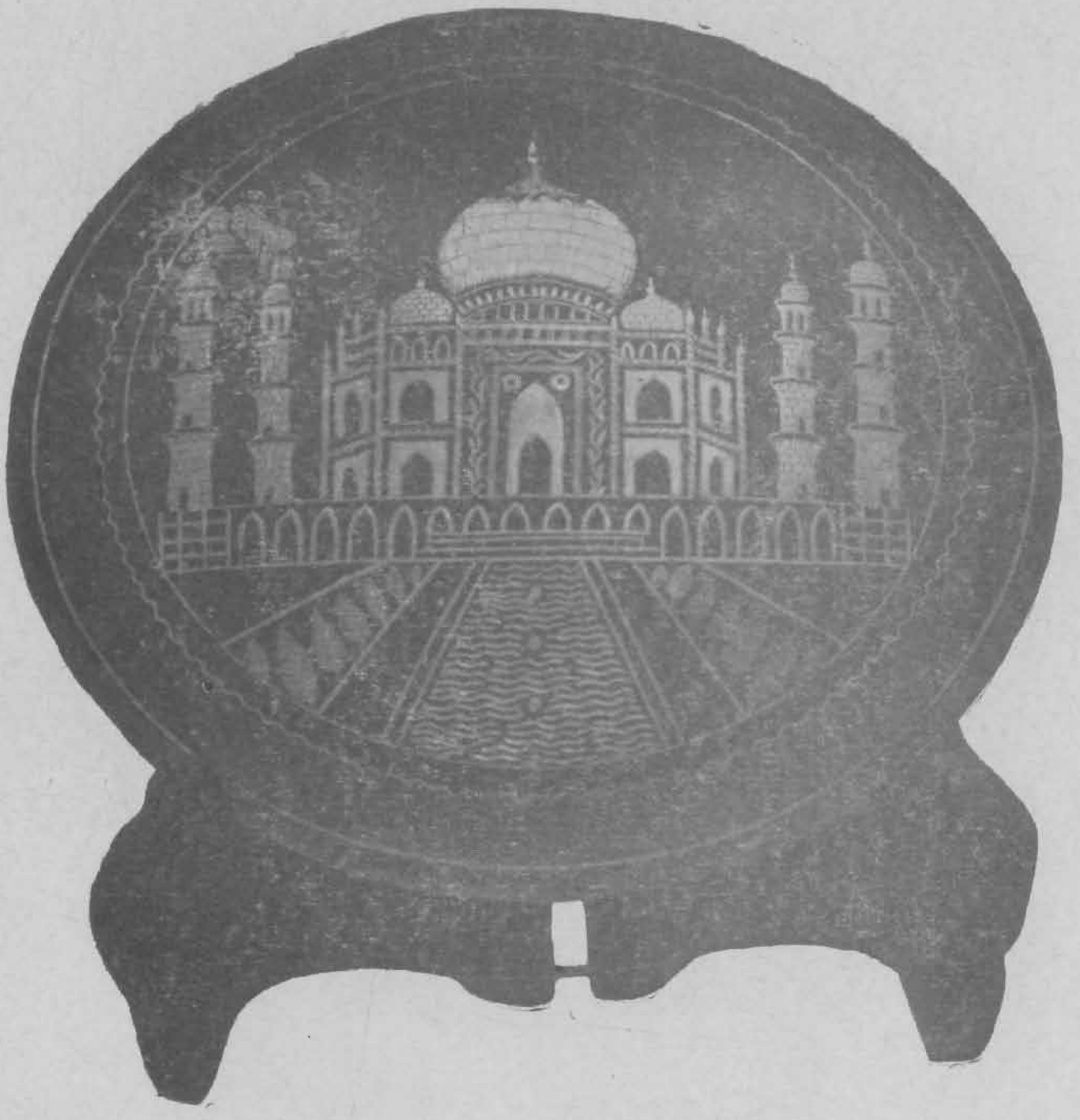
21. A tray of size 6" x 4"



22 Kumkum box of mango shape



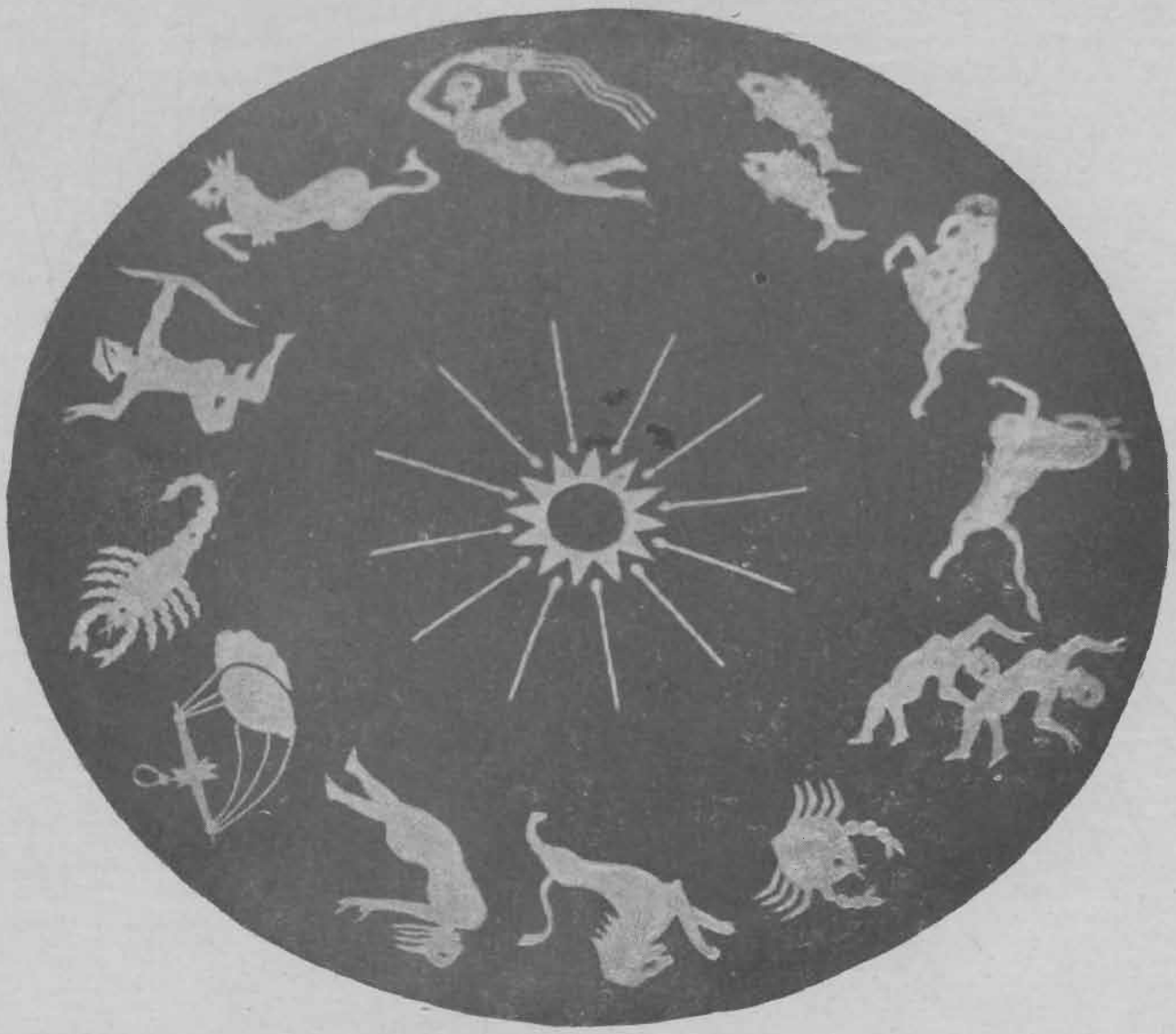
23 Ash tray of aeroplane shape



24. A plate of 8" diameter inlaid with the figure of Tajmahal



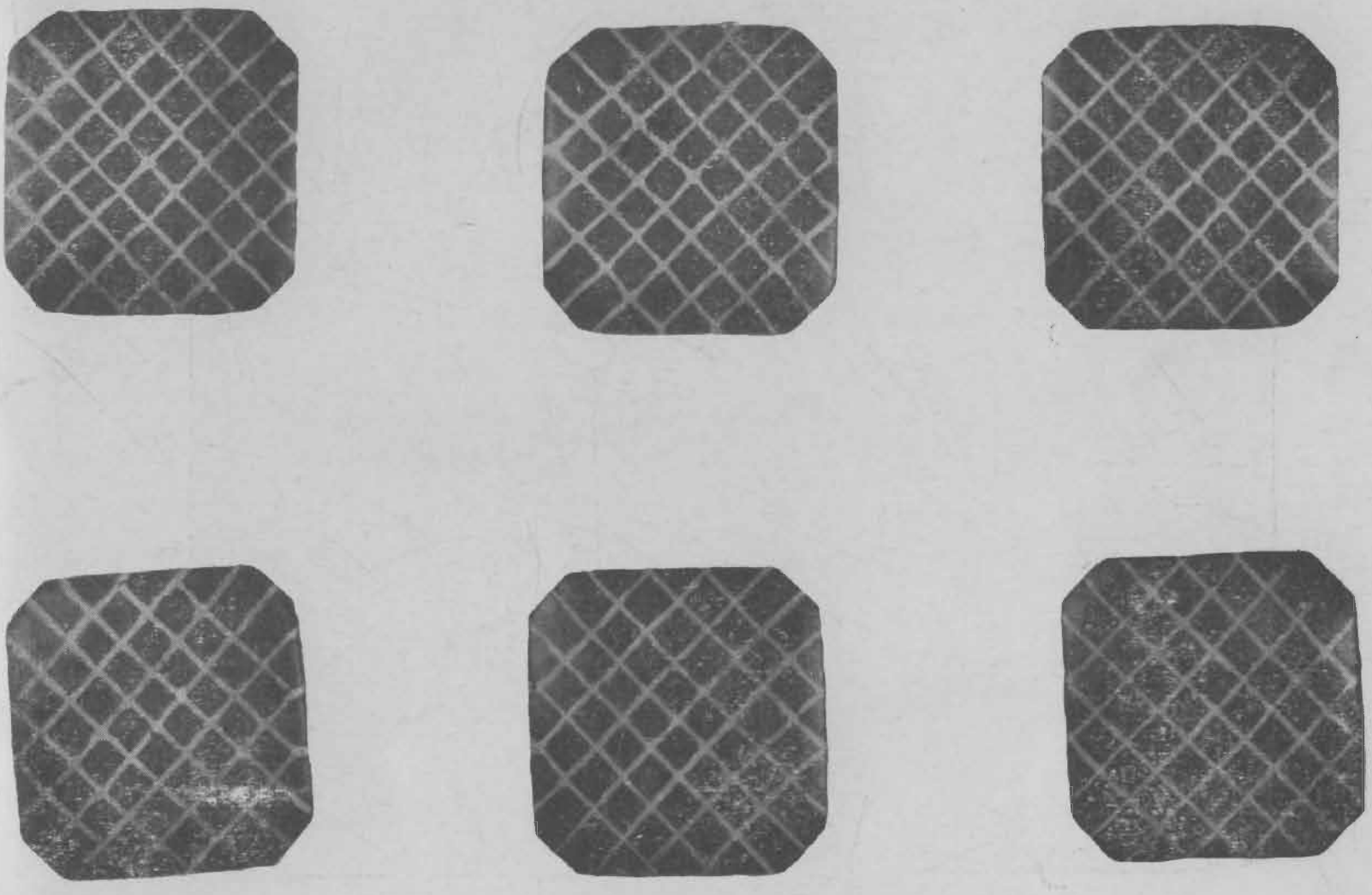
25. A plate of 8 diameter inlaid with a figure representing Raag Malhari



26. A Zodiac plate of 6" diameter

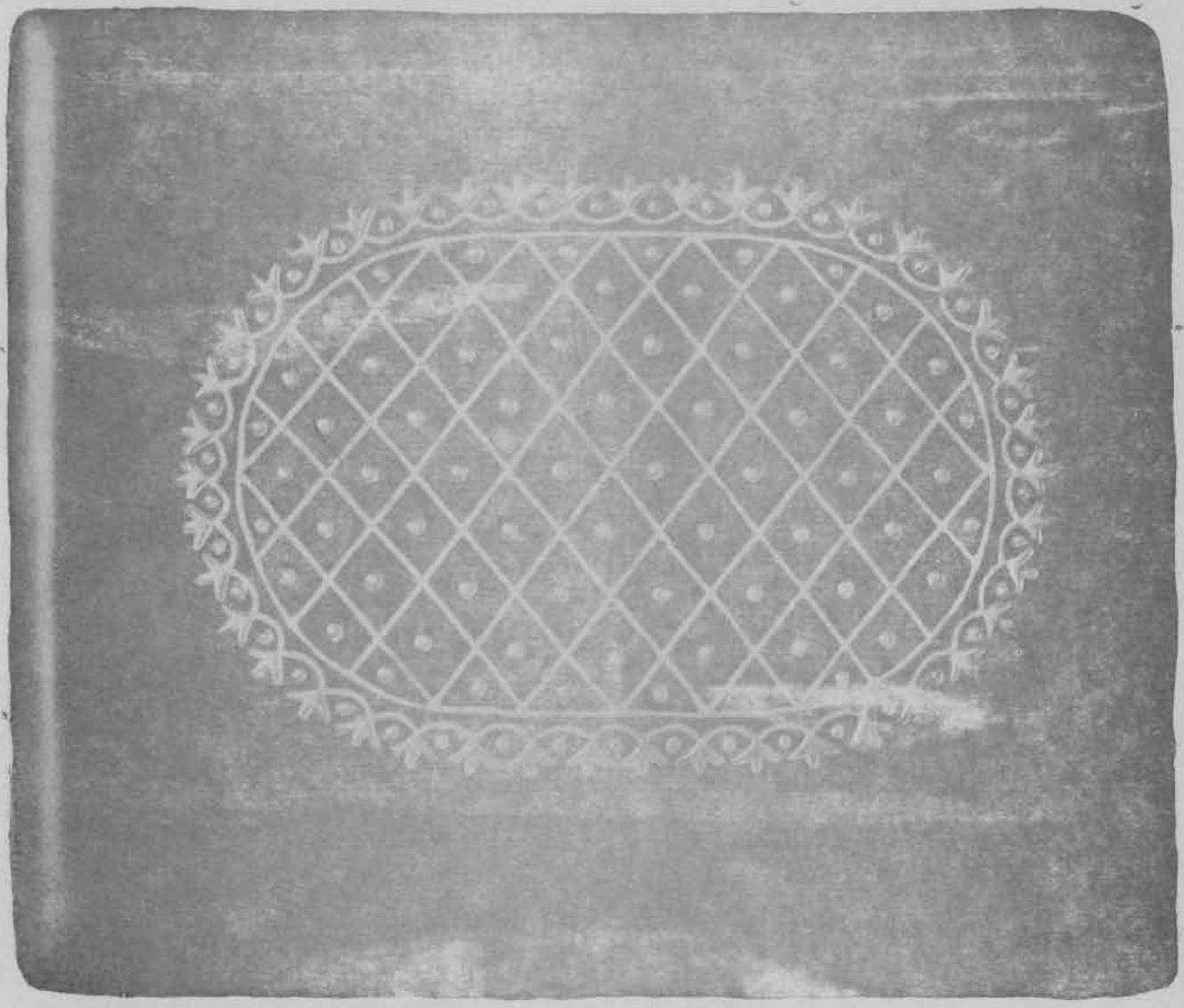


27. Peacock light stand



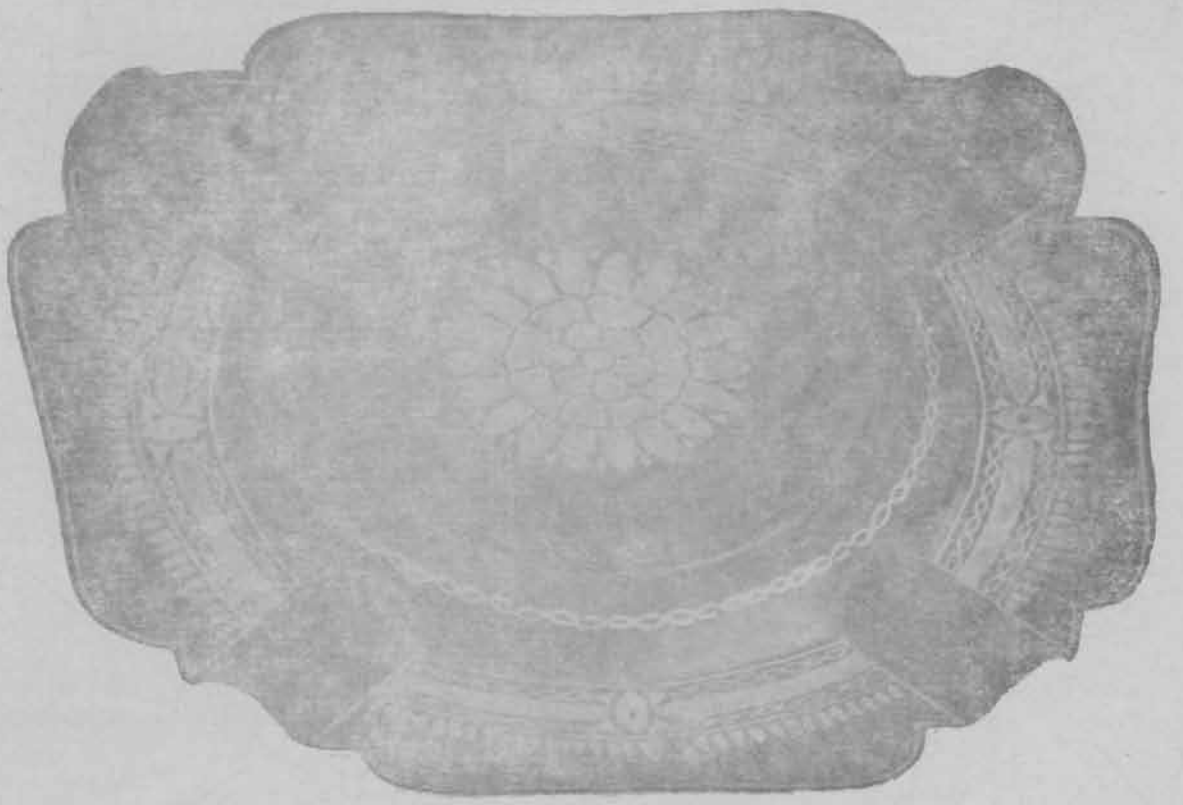
28. Set of bidriware buttons (size $\frac{3}{4}''$x$\frac{3}{4}''$)

Set of square buttons clipped at their four corners, the faces of which are worked in a simple criss-cross pattern in silver tarkashi (inlay of silver wires) bidri technique. Dimensions: $\frac{3}{4}''$ X $\frac{3}{4}''$. 20th century. Provenance not known with certainty. Courtesy: Collection of the Central 'Cottage industries Emporium' New Delhi. (R.G.'s Index No. 13637)



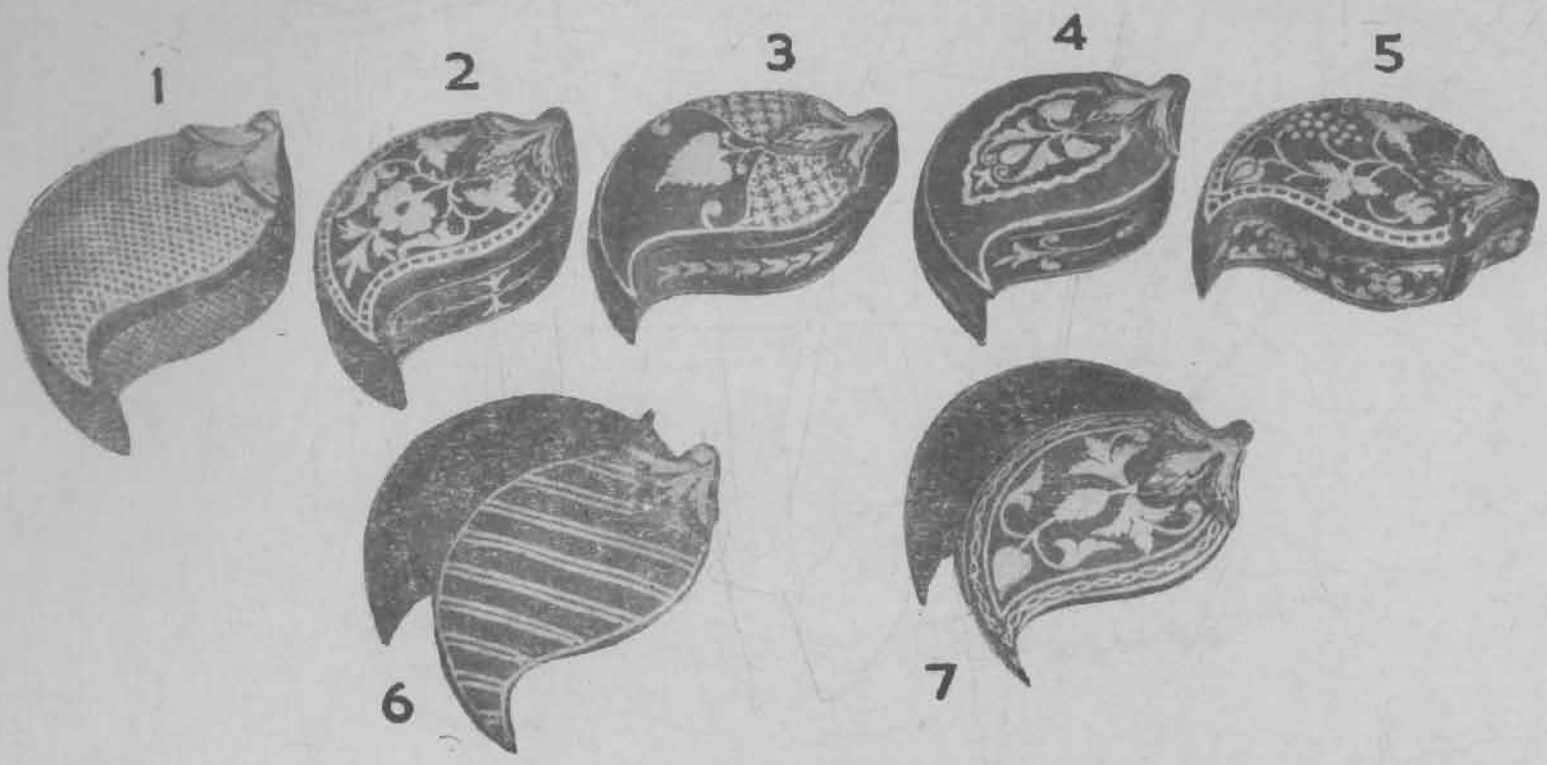
29. A cigarette case

Cigarette case, the centre of which is decorated with an oval of diamond-shaped criss-crossed lines centred with dots, the whole formation being contained within a linear border further ornamented with a scalloped linear edging, the points of which terminate in trifoliate leaf forms with dot patterns in between them. Worked in tarkashi (inlay of silver wires) and taihnishan (inlay of silver sheets) bidri techniques. Height: $3\frac{1}{4}$". Currently produced. Courtesy: collection of the Government Handicrafts and Cottage Industries Sales Emporium, Hyderabad, Andhra Pradesh. (R.G.'s Index No. 2068)



30. An ash-tray

Octagonally-shaped ash tray, the centre of which is decorated with a full blown lotus flower. The raised rim is shaped like a petalled flower, its design motifs featuring linear chain and leaf designs flanking arrowed bands centred with vertical y-placed lozenge shapes. There is an arrangement on the four diagonal ends of the raised rim for keeping four cigarettes. Worked in aftabi (cut out designs in over laid silver sheets) and tarkashi (inlay of silver wires) bidri techniques. Length 10.1 cm. Circa late 19th century Courtesy: Salar Jung Museum, Hyderabad, Andhra Pradesh. (R.G'S Index No. 5620.)



31. Mango Shaped small boxes with hinged lids, the stem opening up by the movement of the lid either towards the left or the right. (R.G'S. Index No. 5621.)

31. (1) Mango-shaped (kairi) small box (dibya) with hinged lid, the stem of which opens by moving it either towards the left or the right. The lid and sides feature a linear criss-cross design executed in silver tarkashi (inlay of silver wires) bidri technique. The stem end features a thenpati-ki-booti (trifoliate leaf) design motif worked in the Zarnishan (low relief) bidri technique.

(2) Shape similar to that described in (1). Lid features a leaf and flower design executed in taihnishan (inlay of silver sheets) bidri technique, outlined by bidri technique outlined by a railway track motif in tarkashi (inlay of silver wires) bidri technique. Stem end of the mango-shaped dibya features atrifoliate leaf design in the taihnishan (low relief) and tarkashi (inlay of silver wires) bidri techniques.

(3) Shape and design of the stem end similar to that described in (1). On the lid is featured a leaf motif executed in aftabi (cut out designs in overlaid silver sheets), centred between linearly-outlined mango shapes executed in tarkashi (inlay of silver wires) and filled with straight repeats of stellated forms that merge into a thenpati-ki-booti (trifoliate leaf pattern) at the end of the stem. Worked in the zarnishan (low relief) bidri technique. On the sides of the box is featured a border of repeating, horizontally moving bell-shaped leaves executed in the taihnishan (inlay of silver sheets) bidri technique.

(4) Shape and stem end similar to that described in (1). Top of the lid features 3 floral designs in taihnishan (inlay of silver sheets) bidri technique.

(5) Shape and stem end similar to that described in (1). Lid of the box features a swirling grape-vine design motif edged with the railroad track motif. Executed in the taihnishan (inlay of silver sheets) and tarkashi (inlay of silver wires) bidri techniques.

(6) Shape and stem end similar to those in (1). Design features on all-over pattern of diagonally placed parallel lines. Executed in silver tarkashi (inlay of silver wires) bidri technique.

(7) Shape and stem end similar to that described in (1). Design in the centre is a poppy plant bordered by the chain motif. Executed in silver taihnishan (inlay of silver sheets), and tarkashi (inlay of silver wires) bidri techniques. 20th century. Courtesy: Salar Jung Museum, Hyderabad, Andhra Pradesh.



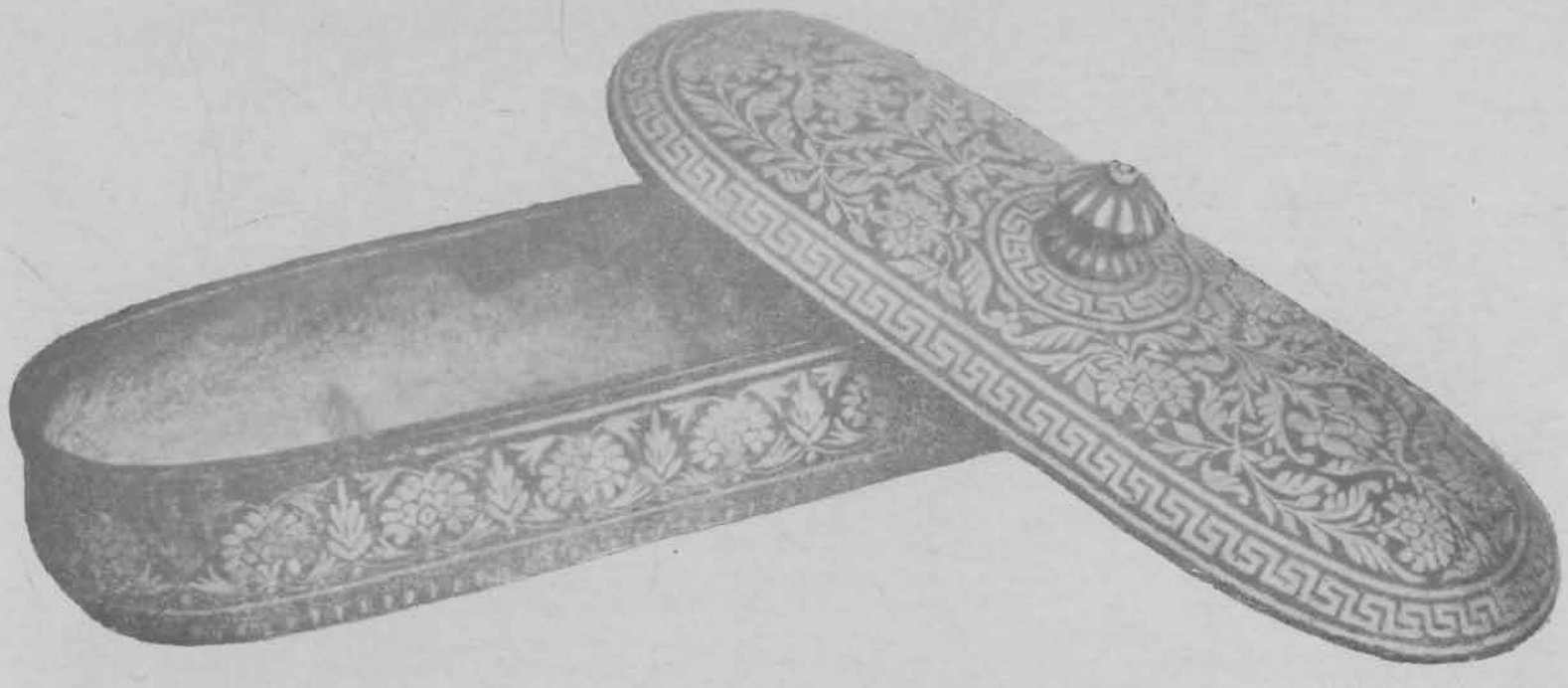
32. Circular box with a lid

Circular box with lid. The outer border of the lid and the sides of the box feature the fret design motif, while t central portion of the lid is decorated with stylised poppy flowers and leaves. Worked in silver taihnishan (in of silver sheets) bidri technique. Diameter: 2.7 cm. Height: 20.5 cm. Circa 19th Century, Courtesy: Sal Jung Museum, Hyderabad, Andhra Pradesh. (R.G.'S index No. 5618.)



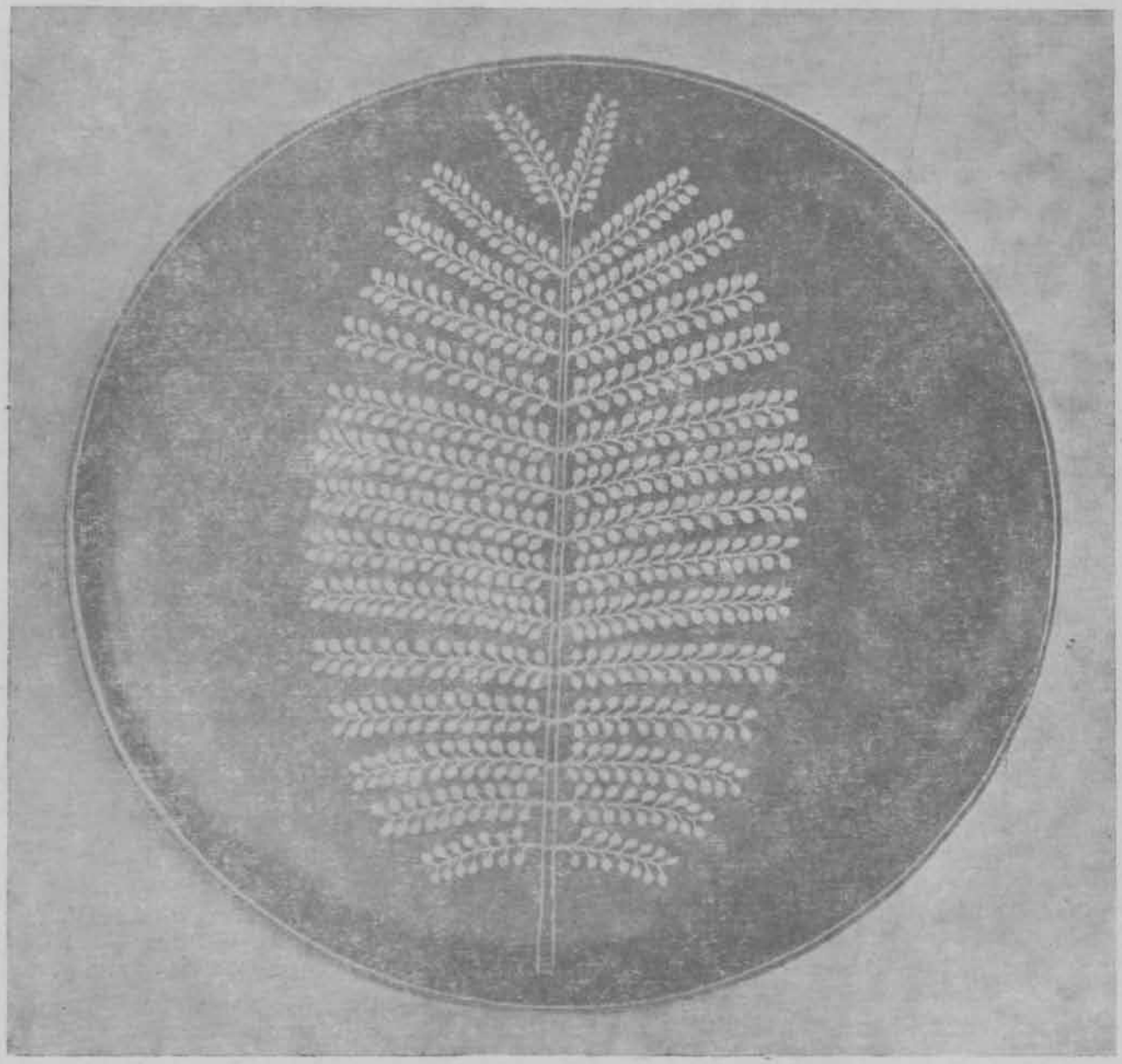
33. Spherically shaped bowl with cover and tray

Spherically-shaped bowl with cover and a tray, featuring floral designs in oval medallions between railroad track borders containing leaf motifs, set in silver with a gold base (Ganga-Jamuna, a designation symbolizing the meeting of the two great rivers of India in metal objects decorated with or made of brass and copper or gold and silver). Similar designs are used on the cover. Worked in bidri techniques of taihnishan (inlay of silver sheets) tarkashi (inlay of silver wires) and aftabi (cut out designs in overlaid silver sheets). Height: 12.1 cm. Diameter: 12.5 cm. Circa 19th century. Courtesy: Salar Jung Museum, Hyderabad, Andhra Pradesh. (R.G'S. index No. 5582.)



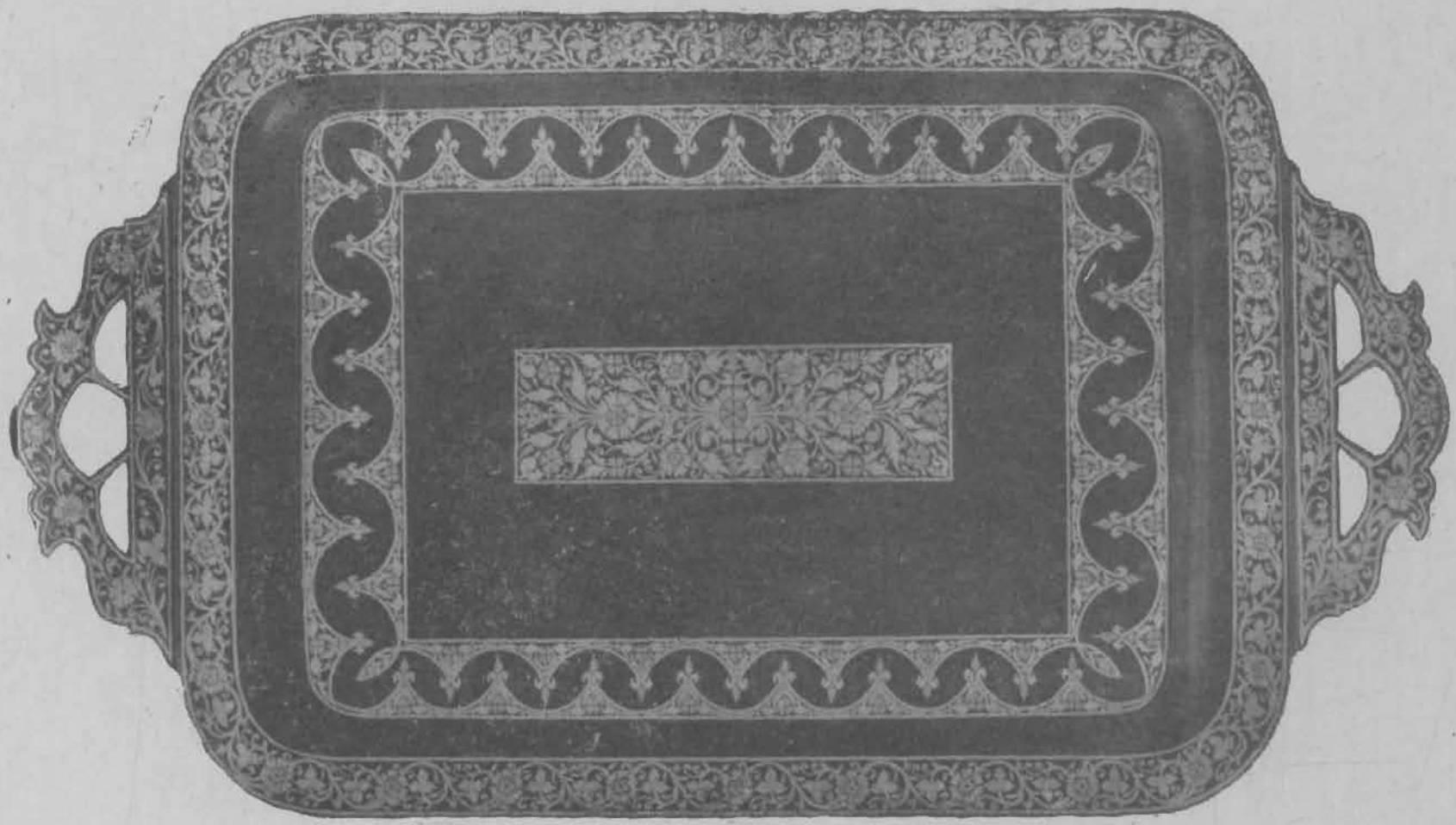
34. Elliptically shaped box for a writing desk

Elliptically-shaped box for a writing desk, the lid and sides of which feature floral and leaf designs with double fret motifs around the lid's outer rim and the base of its knob. Worked in silver taihnishan (inlay of silver sheets) and aftabi (cut out designs in overlaid silver sheets) bidri techniques. Height 4" Length 20.5 cms. Circa 19th century. Courtesy : Salar Jung Museum, Hyderabad, Andhra pradesh. (R.G'S. Index No. 5613.)



35. Concave circular plate featuring a leaf design

Concave circular plate centrally featuring within a linear border a stylised form of a ferm frond. Worked in silver tarkashi (inlay of silver wires) and taihnishan (inlay of silver sheets) bidri techniques. Diameter : 25 cm. 20th century. Courtesy : Collection of the Government Handicrafts and Cottage Industries Sales Emporium, Hyderabad, Andhra Pradesh. (RG'S Index No. 456.)

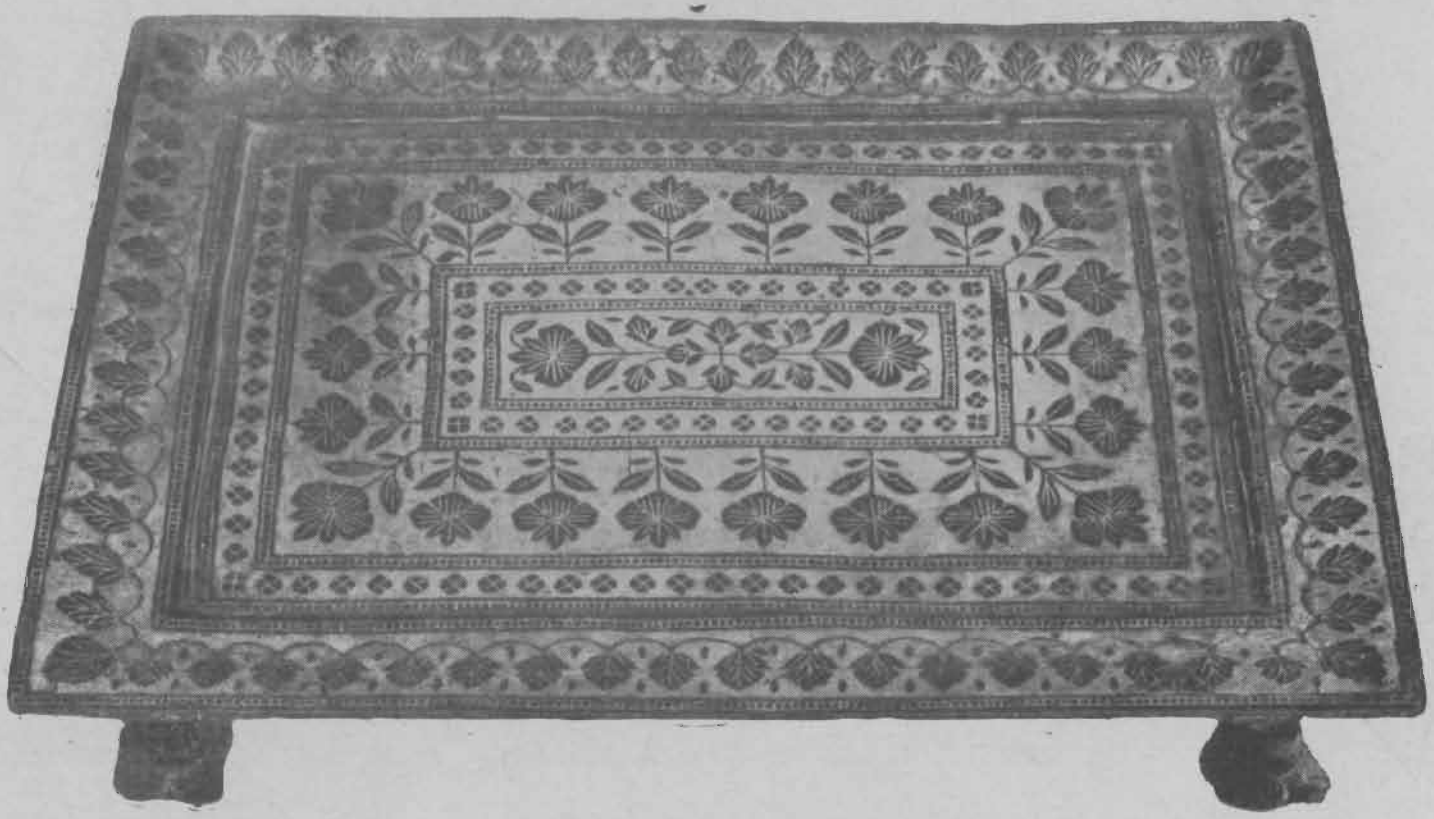


36. Rectangular tray with curved corners

Rectangularly-shaped tray with curved corners, the elaborately open-work handles and the outer border of which are decorated with scrolled creeper motifs (ogee pattern) accentuated by repeating stylised floral rosettes and trifoliate leaf designs. The sunken face of the tray features a centrally-placed rectangular shape decorated with large and small rosettes and stylized leaves that swirl together in the so-called butterfly wings repeat pattern. Where the sunken base of the tray meets the flanged edge, there is a rectalinear border, the interior of which features an interlocking ogee pattern of leaves and floral motifs. Worked in both gold and silver tarkashi (inlay of wires) and taihnishan (inlay of sheets bidri techniques. Length : 25". 20th Century. Courtesy : Collection of the Government Handicrafts and Cottage Industries Sales Emporium, Hyderabad, Andhra Pradesh. (R.G'S. Index No. 553.)

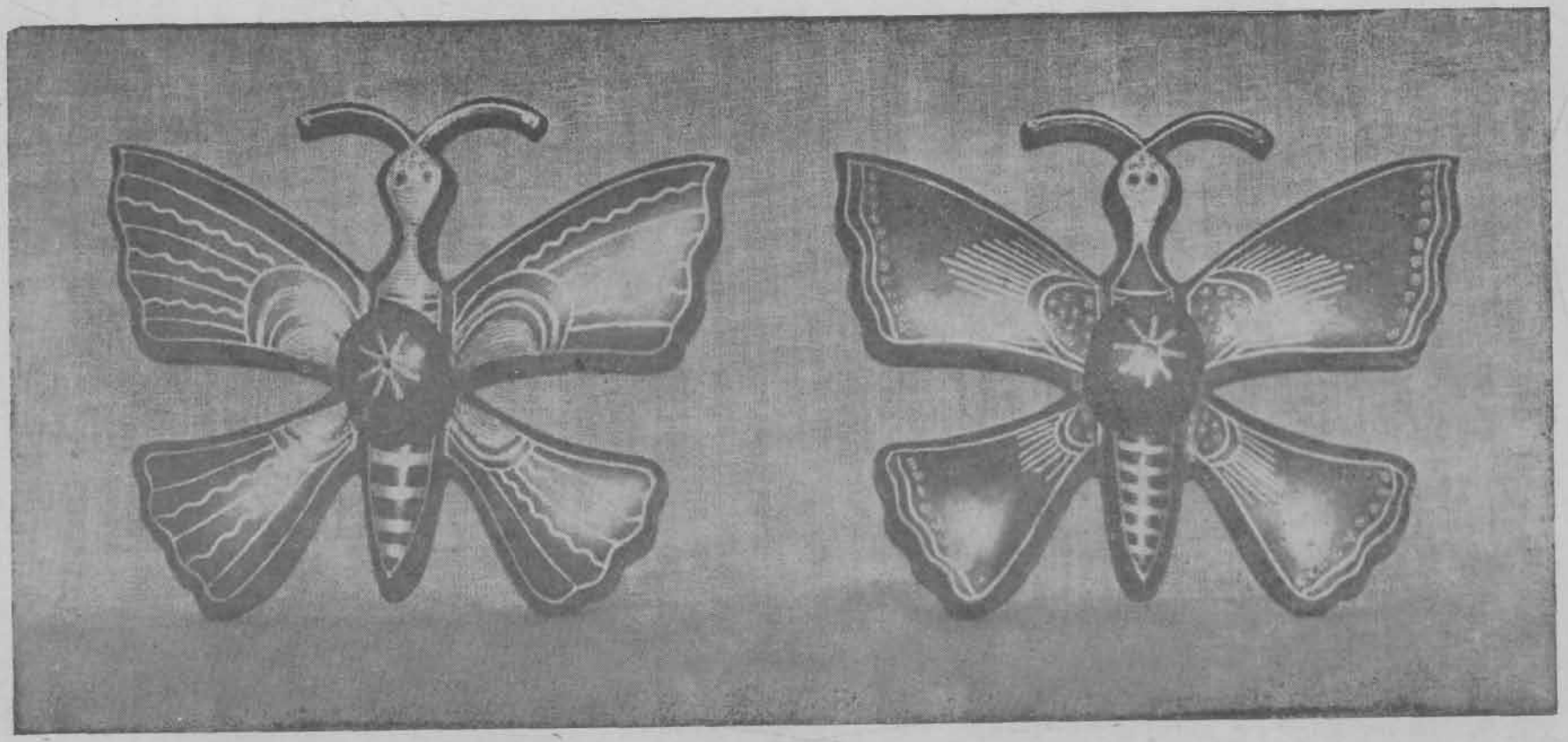


37. (a) A rectangular container with tray for serving betel leaves and accessories. This is divided into three sections, viz., the knobbed lid, the container and the tray.



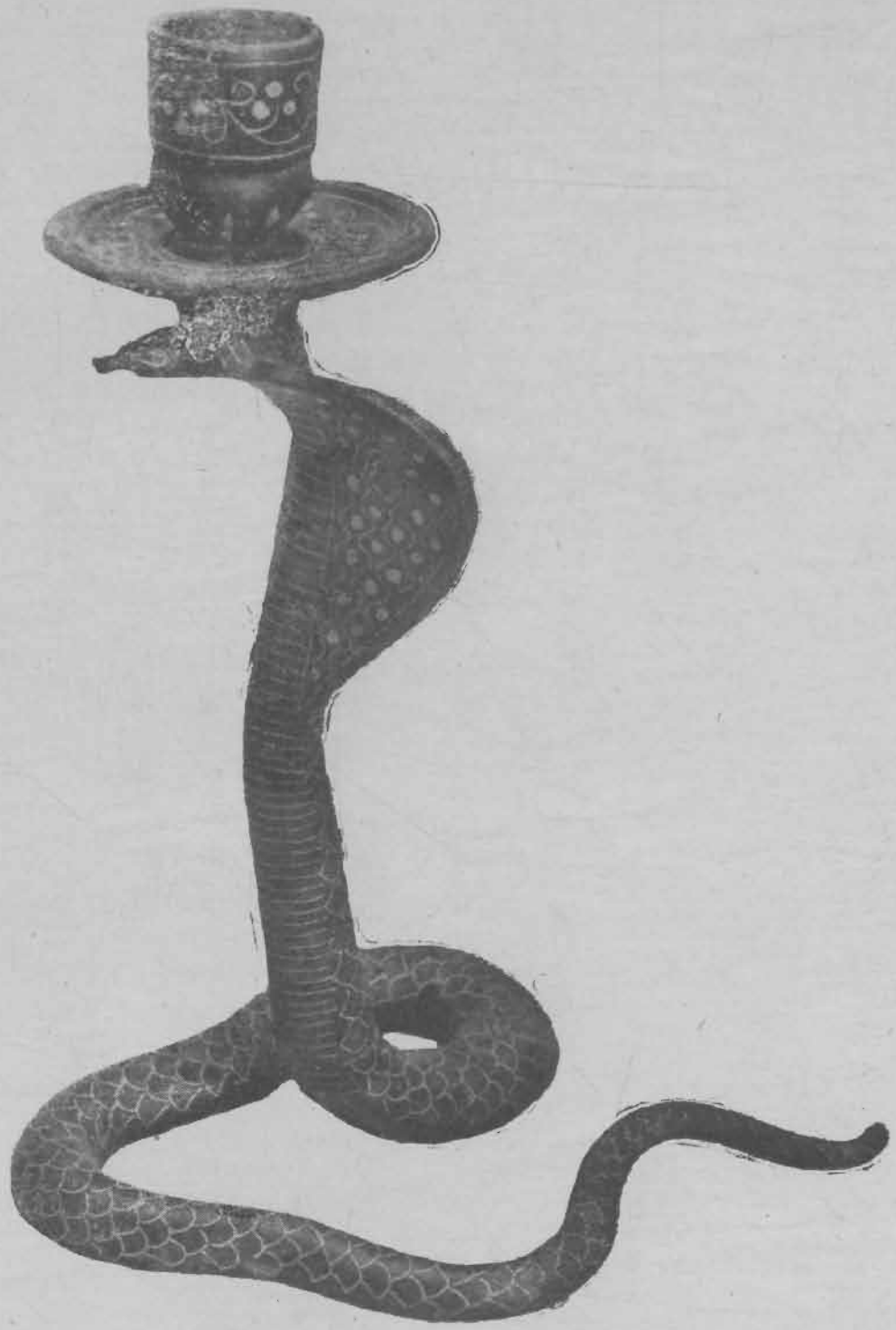
37. (b) Pandan—Tray in which pan is served

Rectangularly-shaped lidded pandan (container with tray for serving betel leaves and accessories). The box is divided into three sections; the container which has four inner compartments to hold the various ingredients for making the pan, the knobbed cover of the container and the serving tray. Designed in an all over pattern of alternating horizontal rows of stylized poppy plants and circles centred with dots, set between the linear edgings that form the rail-road design motif. Worked in silver aftabi (cut out designs in overlaid silver sheets) and tarkashi (inlay of silver wires) bidri techniques, Length 11.7 cms width: 7.6 cms Circa 19th Century Courtesy: Salar Jung Museum, Hyderabad, Andhra Pradesh (R.G'S index No. 5584 and 6585).



38. Butterfly shaped paper weights

Flat-backed pair of paper-weights produced in stylized shapes of butterflies. With the exception of their heads, the designs on both paper-weights are uniformly linear variation being achieved by the juxtaposition of thick and thin lines which make for interesting arrangements of dark and light areas. Executed in the taihnishan (inlay of silver sheets) and tarkashi (inlay of silver wires) bidri techniques. Height $2\frac{3}{4}$". 20th Century. Provenance not known with certainty. Courtesy : Collection of the Cottage and Small Scale Industries, Sales Depot, Bombay, Maharashtra. (R.G.'S index No. 391).



39. The cobra featuring an intricate design produced by the inlay of silver wires ; can also hold a candle in the cup and saucer like arrangement seen on its hooded head.

Candle stick produced in the form of a cobra, on the hooded head of which is a decorative cup-and-Saucer like arrangement for holding a single-candle. The body of the cobra features an intricate design (mahi-push) worked in silver tarkashi (inlay of silver wires) and taihnishan (inlay of silver sheets) bidri techniques. Height 22.5 cms. Circa late 19th or early 20th Century. Courtesy : Salar Jung Museum, Hyderabad, Andhra Pradesh. (R G.'S index No. 5604).

POTTERY OF MYSORE

CHAPTER I

INTRODUCTORY

Introduction

Earthen vessels are made on the wheel since time immemorial. Of all handicrafts, making of vessels out of clay seems to be the earliest and the craft has developed through centuries.

'Ceramics' is a general term for the art of making pottery. Pottery includes all articles fashioned from clay and hardened by fire.

In Mysore State, as elsewhere in India, the pottery craft is of very ancient lineage and unglazed vessels of plain terracotta of red or black colours are made in the villages and towns throughout the State. The craftsmen belong to the community called 'Kumbars' meaning potters.

Kumbars (Hereditary potters)

Kumbars form an important section of our village community. In the districts of the erstwhile Mysore State are found both Kannada and Telugu speaking Kumbars. These Kumbars supply the poorer sections of the village folk, who cannot afford to possess metallic vessels, earthen vessels and thus render a useful service to society.

Kumbars generally have the suffix Setty to their names. The exogamous clans among the Kannada speaking Kumbars are Kasturi, *Semanthge, Nagara, Kendavare*, etc., but many have now out grown this distinction. The exogamous clans (*Kula*) of Telugu speaking Kumbars are identified by flowers like *Mallige, Sampige*, etc.

Both Kannada and Telugu speaking Kumbars take food prepared by Brahmins, Lingayats and Vokkaligas. The Kannada speaking Kumbars interdine with Kurubas and the Telugu speaking Kumbars interdine with Vokkaligas, Telugu Banajigas and Hoovadigas. Both consider Agasas (Washerman), Hajamas (Barbers) and such others as low castes. Marriage with sister's daughter, father's sister's daughter or mother's brother's daughter is permissible. They are no vegetarians and eat meat. Pork is rarely taken by Kannada Kumbars and not by Telugu Kumbars. Local Brahmins officiate as priests for them on festive occasions.

In the districts of Bijapur, Bellary and Dharwar, potters are mostly Lingayats and they are strict vegetarians. Kumbara is only a sub-caste of Lingayats in these areas, others being Banajiga, Panchamasali, Kudavokkaliga, Jangams, Ganiga, Nekar, Banagar, etc. Members of these sub-castes interdine with one another though custom prevents their intermarriage. As in the case of Kannada and Telugu Kumbars marriage with sister's daughter, father's sister's daughter, or mother's brother's daughter is recognised. It is usual for them to add the suffix Kumbar to their names. Their mother tongue is Kannada.

In Belgaum district are found Maratha Kumbars. They are concentrated in villages around Khanapur and more pronouncedly in Garlgunji village. The family names of Kumbars who reside in Khanapur are Askur, Ghadkari, Kedar, Chandgadkar, Khimana, Rowlu, Therwadi, etc. A member of this caste cannot marry his sister's daughter or his father's sister's daughter; but he can marry his mother's brother's daughter. Maratha Kumbars are non-vegetarians. Karade and Desastha Brahmins officiate as priests to Maratha Kumbars, on festive occasions.

In the district of South Kanara potters are called Kulals. Their names end with the suffix 'Kulala', 'Moolya' or 'Handa'. In Udipi taluk Kulals speak Tulu and follow *Aliyasanthana* system of inheritance. The exogamous clans called *Bali* are numerous among Kulals; they are *Mundanna, Ganjaranna, Char, Salinna*, etc. In Coondapur taluk Kulals speak Kannada at home and they also follow the *Aliyasanthana* system of inheritance. Their *Bali* (*clans*) are *Kadina, Banna, Belana, Hole, Tholera, Chithara, Gangara, Namada*, etc. Potters in the villages of Kadaba, Uppinangadi, Koila, Charvaka, Nelyadi of Puttur taluk speak Kannada at home and follow the patriarchal system of inheritance. Kulals are non-vegetarians. A member of this caste cannot marry his sister's daughter. Marriage between cross cousins (cousins belonging to non-identical siblings) is permissible and widow remarriage is recognised. Shivalli Brahmins officiate as priests on festive occasions.

Kumbars in the taluks of Karwar and Yellapur of North Kanara District speak Konkani and they are migrants from Goa.

Districtwise figures of a number of centres where Pottery craft is pursued and the number of persons engaged in the craft, enumerated during the 1961 Census (Compiled in Table E III) are given below :—

Sl. No.	Name of the District	No. of centres where pottery craft is pursued	No. of persons engaged in the craft
1	2	3	4
1.	Bangalore ..	172	172
2.	Belgaum ..	261	1,412
3.	Bellary ..	4	31
4.	Bidar ..	8	19
5.	Bijapur ..	61	201
6.	Chikmaglur ..	22	220
7.	Chitradurga ..	104	735
8.	Coorg ..	9	122
9.	Dharwar ..	59	122
10.	Gulbarga ..	18	145
11.	Hassan ..	26	135
12.	Kolar ..	50	310
13.	Mandya ..	10	141
14.	Mysore ..	79	947
15.	North Kanara ..	25	135
16.	Raichur ..	34	194
17.	Shimoga ..	30	311
18.	South Kanara ..	62	800
19.	Tumkur ..	210	1,492

Details of the hereditary Potters at Khanapur

Khanapur is a town and taluk headquarters in Belgaum district on the Poona-Bangalore railway line at a distance of 586 Kms. from Bangalore. It is situated at 15° 37′ North latitude and 73° 34′ East longitude, on the bank of Malaprabha and at a distance of 26 Kms. from Belgaum towards South. It is connected by bus as well as by train from Belgaum. It is in a heavy rainfall area and the average rainfall in the region is 2,217 mms. There are two High Schools, Post and Telegraph Office, Taluk Office, Police Station and a Munsiff's Court located in the town. The area of the town is 2.20 Sq. miles and the population according to 1961 Census is 8,127 .

There are 20 households of hereditary potters at Khanapur. All the 20 households are independent proprietary establishments engaged in manufacturing clay vesels for cooking food and storing water and country tiles for roofing. Out of the 20 households, 19 are Maratha Kumbars and 1 is a Lingayat Kumbar. Fourteen households out of 20 belong to the locality while 6 are immigrants from Gunji, a village near Khanapur. The households of the 14 local potters live in their own houses, and among the immigrants 4 stay in rented houses and 2 in houses allowed to be occupied free of rent.

These 20 households contain 117 members of whom 37 are males, 36 females and 44 children below 14 years of age. Out of 37 males 31 are potters working on the wheel, 2 are students, 3 are aged and 1 is disabled. Among the 36 females, 30 assist the male members in ancillary work connected with the craft and 6 are housewives. Of the 44 children, 3 assist their parents, 17 are students and 24 are too young for any occupation.

The size pattern of the households is also indicated below :—

Sl. No.	No. of members	No. of households
1	2	3
1. ..	2	2
2. ..	3	1
3. ..	4	5
4. ..	5	1
5. ..	6	4
6. ..	7	3
7. ..	8	1
8. ..	10	1
9. ..	11	2

Thirteen households operate country wheels of Dharwar type and 7 belt driven wheels made by a carpenter of a neighbouring village.

All the 20 houses in the occupation of these potters are mudwalled with roofs made of country tiles. Electric lighting is installed in only two of them and the rest use oil lamps. Out of the twenty households who are carrying on the craft, seven households have floor space ranging 500—1,000 Sq. feet. Five households have floor space in the range 1,001—1,500 Sq. ft. Four households in the range 1,501—2,000 Sq. ft. 3 households in the range 2,001—Sq. ft. and only one household in the range 3,001 to 4,000 Sq. ft.

The total capital invested on the craft by the hereditary potters at Khanapur is about Rs. 60,000 of which Rs. 37,000 represents the investment on buildings part of which is utilised for dwelling also, Rs. 2,000 on tools and equipments, and about Rs. 1,000 on raw materials.

During the year 1963 the craftsmen manufactured clay articles worth Rs. 35,000 made up of vessels Rs. 25,000 and roofing tiles Rs. 10,000. Only a quarter of the vessels produced are sold for cash, the rest being bartered for food articles like paddy and ragi. Tiles are invariably sold for cash.

Raw materials and firewood are available locally to the potters. The consumption of clay by potters in this town during 1963 is estimated at Rs. 1,000 and of firewood at Rs. 7,200 though no money has actually been paid by them for firewood which was collected without cash in the neighbouring forests.

The principal means of livelihood of all the 20 households is pottery making and none is engaged in any other gainful subsidiary occupation worthy of mention. However, 3 households receive rent from the lands as a secondary source of income.

Establishments

Pottery is carried on as a hereditary craft and each of the production unit is a proprietary establishment.

Thee are in all 107 Potters' Co-operative Societies in the State. Under the Co-operative Societies there are 13 common workshed units, 13 small common worksheds, 5 building material units, 3 brick Bhatti, 4 country roofing tile units.

There are two Pilot Production Units in the State. One is attached to the Pottery Section in the Artisan Training Institute at Khanapur in Belgaum District and the other to the Pottery Section of the Artisan Training Institute at Ramanagaram in Bangalore District.

CHAPTER II

TECHNIQUES OF PRODUCTION AND ARTICLES PRODUCED

Raw materials

Clay occurs in nature, and is composed of alumino silicates, sand and other minerals. Clay when wet is pliable. It retains its shape when dry. When red hot it hardens without losing shape.

In its pure form clay is called Kaolin. It is white in colour and is largely used in ceramic industries. Ball clay, also called potter's clay, is malleable and due to its higher alkali contents fuses at a lower temperature than Kaolin. Ball clay is used for making stoneware and earthenware articles. Fire clay which is less pure contains silica, ferrous compounds and other alkalies and is largely used in the making of refractory bricks and saggars.

Red clay used by potters for making terracotta wares all over the State is composed mainly of certain insoluble sediments.

Clays are of two kinds namely (*a*) primary or residual clays and (*b*) secondary or transported clays. Laterite and Kaolin belong to the first category while fire clay, ball clay and the like to the second. Primary clays are those which are found near the site of original rocks from which they were formed, and secondary clays are those that were carried away from the original spot by the agency of water and deposited elsewhere. The present study is confined mainly to red clay which is a secondary clay.

Clayware or pottery can be grouped under porous ware and non-porous ware. Porous ware can further be classified into Terracotta and earthenware. Non-porous ware can be either stoneware, porcelains or refractories.

Terracotta

All pottery with a porous body and which are not glazed come under terracotta. Terracotta means baked clay. It includes bricks, tiles and clay utensils. Terracotta is always unglazed and fired at low temperature. It is softer and more porous than earthenware.

Earthenware

All permeable pottery made of white or coloured clay and with a glaze coating is known as earthenware. The word earthenware is often misused to indicate the common unglazed pottery.

Stoneware

Stoneware is vitrified and opaque clayware made of white or coloured clay. The ware made of white clay is coloured with a glaze while the coloured wares are salt glazed.

Porcelains

Claywares of pure white China clay which are translucent when thin and vitrified at high temperature are known as porcelains.

Refractories

Wares of fire clay or of high heat resisting materials fired at very high temperatures which remain porous and without glaze are called refractories. Refractories are used primarily for the construction of furnaces and for making crucibles used in melting metals and glass.

Hereditary potters in the State are engaged in producing terracotta. They use the clay in its pure form or with the addition of certain other substances depending on the quality of the clay.

Clay is available to the potters from nearby tank beds or lands. They transport clay to their houses either by carts or in head loads. They usually collect the clay during summer.

Tools

Potter's wheel is the chief contrivance employed for the making of pottery. The other accessories are wire, sponges, stone, flat mallet, pestle and sieve.

The three types of wheels used are the 'Mysore type', the 'Dharwar type' and the 'Mangalore type'. While the Mysore and the Dharwar type wheels are propelled by the thrower himself, the Mangalore type wheel is propelled by his assistant.

Mysore type wheel

It is a four spoked wheel f 76 cms diameter. Two cross jointed pieces of wood are dovetailed at the centre to resemble a four bladed propeller. The disc called the wheel head is 30 cms. in diameter and the length of each spoke is 18 cms. Bamboo splits are tied to the free ends of the adjacent spokes and covered with a thick plaster of clay, termitarium earth and coir waste to form the rim of the wheel. The width of the rim is 20 cms. A stump (shaft) 7 cms. long and 2 cms. thick is fixed at the centre. The free end of the shaft rests in a hole made in a chunk of stone to act as a fulcrum. When the wheel is not in motion it will rest slantingly on the ground.

The wheel head and spokes are made of hard wood like mango (mangifera indica) jack (Artocarpus integrifolia) or *Kaggali* (Acacia Catechu). For the shaft either tamarind (Tamarindus indica) or *Kaggali* (Acacia Catechu) is used.

Dharwar type wheel

It is a wheel of 76 cms. diameter. The wheel head (hub) is a solid disc made of tamarind (Tamarindus Indica) or *Jali* (Acacia Arabica) and its diameter is 36 cms. Six mortises are made in the rim of the hub to receive the tenons of an equal number of tamarind spokes. The length of each spoke is 18 cms. The rim of the wheel is 24 cms. wide and it is made of bamboo splinters and cane bound by coir and covered with a thick plaster of clay mixed with coir waste. A stone disc 8 cms. in diameter and having a pit at the centre is fitted to the centre of the wheel head (hub). The wheel revolves on a *Jali* (Acasia Arabica) wood pivot fixed to the ground. This wheel also rests slantingly on the ground when not in motion, as the Mysore type wheel.

The Mysore and the Dharwar types of wheels are designed on the same principles, the difference being only in the position of the axle. The rim of the wheel acts as a balance. When set in motion the centrifugal force makes the wheel revolve freely. Keeping the wheel in a stable equilibrium when in position is an essential prerequisite to commencing the work. Such an equalibrium is sought to be secured by a deft manipulation of weight with the addition of extra clay at the periphery of the wheel wherever deficient in the required quantities.

Methods adopted to impart motion in both types of wheels are similar. The thrower gives an initial spin to the wheel with his hands. Then he inserts a stick into a hole in the rim of the wheel. He holds the stick by both hands and rotates the wheel with maximum speed. Thereafter he keeps by the stick and attends to throwing.

Mangalore type wheel

This type of wheel is in use only in South Kanara district. The wheels are solid discs of the following types :—

(i) Solid stone disc of 30 cms. diameter with an axle of 10 cms$\times$5 cms.

(ii) Solid wooden disc of 60 cms. diameter with an axle of 10 cms. $\times$ 5 cms.

(iii) Solid stone disse of 23 cms. diameter with an axle of 10 cms.$\times$ 5 cms. The stone disc is padded on by a thick layer of termitarium earth and coir waste at the outer periphery.

A socket to fix the axle is scooped out in a chunk of stone which is placed on the ground. When not in motion the wheel stands parallel to the ground. Because of friction this type of wheel is devoid of easy motion and therefore requires the constant attention of a person to keep it spinning.

Wheels are made by potters themselves and the expenditure on raw materials ranges from Rs. 15 to Rs. 20 each.

The wheel used by potters in Kudikebevoor, a village in Channapatna taluk of Bangalore District, is of the Mysore type but smaller being only of 62 cms. diameter.

Clay is placed on the wheel head and shaped skillfully by the thrower to required form. The article is taken off the wheel, dried to leather hard, beaten to shape, and then baked.

While operating the Mysore or Dharwar type of wheel, the thrower stands on the ground, bends forward and shapes the clay using both the hands. In Kudikebevoor, the wheel being small, the potter squats on the ground while working at it.

Potters in South Kanara sit on a low stool while throwing. The assistant sits on the ground to propel the wheel.

Belt driven wheel

This mechanism has a driving wheel at one end and a turn table at the other end on which claywares are fashioned. The driving wheel and the turn table are connected by a belt. This equipment is made by a carpenter of the neighbouring village and the making charges comes to about Rs. 30. The whole equipment has a crude finish, but meets the need of the potter. An assistant helps the potter in operating the driving wheel which in turn rotates the turn table. From the prepared lump of clay the potter takes the required quantity, places it over the centre of the turn-table and then the potter's assistant sets the turn-table into motion by turning the driving wheel. This type of wheel helps to save the additional manual labour which the potter himself has to expend when he has to operate the traditional type of wheel.

The other accessories commonly in use are the following :

Wire

For cutting the thrown piece from the wheel head the potter needs a fine wire. A string may also be employed for this purpose.

Sponge

Sponge is needed for taking excess water and for moistening the surface while throwing. Green leaves and rags are also used in lieu of sponge.

Stone and Mallet

The thrown articles are beaten to shape with the help of a round stone and a bat shaped flat mallet.

Pestle

Wooden pestle helps to pound the dry mass of clay.

Sieve

Wicker sieves are employed to sift pebbles, if any, in the clay.

Technique of production

The production process of making pottery from the stage of preparation of raw materials to the stage of deriving the end products, can be explained under the following heads :

1. Preparation of the clay.
2. Throwing on the wheel.
3. Beating or drubbing to shape.
4. Firing in the kiln.

Much of the use of terracotta is of a purely utilitarian type as it is relatively cheap. Potters in this State make mostly household wares required for cooking, storing water and such other purposes. They also make flower pots, tiles, chimney pieces and other articles.

1. *Preparation of the clay*

Clay is freed from grit and pebbles and the mass is kneaded well by the potter by adding water in little quantities. The body for throwing must be absolutely homogenous and free from air pockets whose presence may cause the ware to break while firing which in turn may also damage the other wares in the kiln.

Methods adopted in preparing and purifying clay in different parts of the State are more or less similar.

Potters in Udipi Taluk of South Kanara district bring Madimannu (Clay) from fields, reduce it to fine powder and allow it to remain in water for 12 hours. *Shede* (a type of clay available in the locality) collected from the nearby fields of the potter's house is dried in the sun for 3 to 4 days. After completely drying it is pounded with a pestle and the powder thus obtained is sieved by using a wicker sieve. The fine powder of *Shede* is mixed with *Madimannu* (clay) soaked in water, in equal proportions. The mixture is kneaded well by hand. This clay is heaped on a plank kept in an inclined position and scraped in thin layers by means of a bamboo splinter or an umbrella rib. This process helps removal of pebbles or any other hard substance left in the clay

In Coondapur taluk of South Kanara District potters mix *Koje mannu* (clay) soaked in water with powdered *Haralu mannu* in the proportion 1:2. Haralu mannu is powdered by pounding with a pestle. The mixture is kneaded well and freed from pebbles etc., by scraping.

In Mangalore taluk clay is soaked in water, kneaded well, purified by scraping. No other material is added.

In Bijapur the body for throwing is made up of three types of clay, *viz.*, Kotamannu, Kalebagmannu and Bilimannu in the proportion 1:2:1. To the prepared clay is added ass refuse, and the entire mixture is thoroughly kneaded. The quantity of ass refuse mixed depends upon the type of article made.

In other parts of the State clay is used in a pure form.

2. *Throwing on the wheel*

The potter takes the required quantity of clay from the prepared lump, places it over the centre of the wheel and then sets the wheel in motion. The potter ensures himself that the weight of clay is exactly at the centre of the wheel, and if it is not so he brings the mass to position by cupping the hands around the ball of clay and exerting a slight pressure on the top of the ball. If the mass of clay is not centered properly the wheel will suffer a loss of balance.

The thrower will have water with him to wet his fingers while throwing.

The wares assume their crude initial shape as they are thrown on the wheel. The mass of clay on the wheel head is first shaped into a cone. A depression is made with thumbs at the top of the cone and as the wheel revolves the sides are gradually raised to form a cylinder until its wall assumes the required thickness (Plate 4). The thrower then skilfully shapes the lip (Plate 12) and finally moulds the object he is working on (Plates 5 & 6).

Water collected on the surface is removed by means of a rag (a sustitute for sponge), and excess clay scraped off with a tin strip.

The quantity of clay placed on the wheel head at a time would be such as to suffice throwing 5 to 10 pieces depending on the size of the article (**Plate 7**). After shaping the lip and the sides of the vessel it is severed by means of a wire or string and taken out of the wheel head. By practice the potter does it even without the help of a string.

In all the districts of the State, except South Kanara, only men attend to throwing on the wheel. In South Kanara even women do this work.

Vessels removed from the wheel are exposed to sun for drying (Plate 13). This process is commonly adopted throughout the State.

When wet the vessel turned out on the wheel is crude and its size also smaller then the end produce.

3. *Beating or drubbing*

When sufficient number of vessels are made and dried to leather hard condition the potter attends to 'beating' or 'drubbing' (Plates 15 and 16). The essential tools for beating are a round stone and a bat shaped flat mallet. To carry out this operation, a bowl shaped depression is made in the ground. The depression is filled with straw and covered by a date mat. The potter drubs the vessel by placing it on the mat at the spot where the depression is made. The straw under the mat serves as a pad. The inner surface of the vessel is supported by a round stone held in the left palm of the potter and the corresponding part of the outer surface drubbed with mallet. It is by such drubbing that the bottom of the vessel is shaped. The potter continues this operation till the desired shape is achieved. Vessels after the drubbing are dried in shade.

Roofing tiles

Roofing tiles are also manufactured on the wheel. It is thrown in the shape of a hollow cylinder of height 30 cms. The diameter of the free end of the cylinder on the wheel is 10 cms. and that of the bottom end is 15 cms. After its removal from the wheel and while the clay is still soft, it is scratched lengthwise on the diametrically opposite outer surface by means of a blade or sharp strip. The cylinder will split into two equal halves when tapped slightly. Country tiles are popular in the village parts even after the introduction of machine made tiles due to their relatively low cost.

Bricks

This is an essential building material mostly in use in the urban areas. Bricks are made by persons who are not traditional potters. The size of the brick is 24 cms.×12 cms.×8 cms. Bricks are made in the hollow wooden moulds (Plate 53). The moulder fills the clay into the mould which usually has two spots (Plate 54). He removes the excess of clay sticking out on the frame and raises the mould carefully which leaves behind two pieces of bricks on the ground. The bricks are backed in the kiln after being allowed to sun dry.

Flooring tiles

Flooring tiles of 15 cms. square are made in Ramanagaram of Bangalore District out of red

clay available locally. Clay which is suitable for throwing can also be used for pressing. Ash is dusted on the wooden mould and clay is pressed into it in small quantities, to be forced in. After filling, the excess clay, otherwise called cap, is cut off by means of a wire. The moulder presses his palm on the clay, removes it from the mould and places it on the ground for drying.

Garden pots

Garden pots are also made on the wheel. A cylinder of varying heights with mouth wide and gradually narrowing downwards is turned out on the wheel and to it a flat base made by hand is attached. To prepare the flat base, the potter takes a little quantity of clay from the prepared lump, places it on a stone disc presses it with his palm into a thick circular mass and then drubs it with a stone into a flat circular mass suitable for attaching to the pot. At the Central Village Pottery Institute, Khanapur, gardens pots are made by pressing clay into a wooden mould (Plates 39 to 46). For pressing in wooden mould the clay is prepared in the same manner as it is prepared for throwing. The surface of the mould is dusted with ash so that the clay may not stick to the mould. Then clay is pressed into the mould in small quantities by hand. After filling the mould, the excess clay (called cap), is cut off by means of a wire. The slab is then taken out of the mould by gently pressing with the palm. Six such slabs are made for making a garden pot. These six slabs are placed in a hexagonal mould the sides of which are closely hinged. The clay slabs placed in the wooden mould are joined together lengthwise with slip. The mould is unlocked and released which leaves the pot behind. A hexagonal slab is attached to the base of the pot.

A few of the articles are also made without wheel. In Bijapur bowls are made without the aid of a wheel, and mostly by women. (Plates 47, 48, 49 and 50). Seated on an old rag the lady takes a little quantity of clay from the prepared lump, rolls it and places it on a stone disc. She presses it by her palm into a thick circular mass and then drubs it with the help of a stud shaped stone into a flat and thin circular mass. Then she removes it from the disc, places it in a metallic bowl and gives the finishing to the inner surface by smoothing it with wet fingers. Afterwards she takes it out of the metallic bowl and trims the outer surface to remove all irregularities and crudeness. When the desired shape is achieved she attends to final smoothing first by means of fingers and then by means of a wet rag. The bowl is dried in the sun and later fired along with other articles.

In South Kanara large vessels like cauldrons are made entirely by hand. Usually ladies work on it. The worker takes a little quantity of clay from the pile and places it on a low stool the top of which is dusted with ash. She rolls the wet clay into a hollow cylinder, pulls up the sides and after shaping the neck and lip allows the piece to dry in the sun. When it sufficiently dries she inverts it on the ground and pulls up the sides by a deft beating by the hands. As she proceeds doing so she adds up handfulls of clay and smoothens it. She distends the sides in this manner and also by bringing her hand up strongly from inside. After the desired shape is obtained the surface is smoothened first by fingers and then with a moistened leaf and finally with a trimmed cocoanut shell. Imperfections, if any, are rectified by scraping using a shard. The surface is finally rubbed with a round stone.

Articles are made, particularly in the training centres, by modelling and slip casting.

Slip casting

Clay reduced to a thick viscous state like a cream by the addition of water is called slip. Mould made of plaster of paris which is good absorbent of water is used in slip casting. The slip is poured into the mould to fill it completely and allowed to remain there for 5 to 10 minutes. Due to rapid absorption of water, the slip shrinks a little in the mould in the beginning and to make it up correction slip is added. It should always be ensured that the mould is completely filled with a slip without giving any vacant space before it is allowed to set. The absorbent plaster of paris hastens its setting. The mould is thereafter released. Protuberances that may be noticed on the surface of the article cast are removed by careful scraping. This is the process of slip casting. The advantage of this type of casting is that when a mould is made articles of any intricate and complicate shape can be cast which may not be possible by any other method.

4. *Firing in the kiln*

The final stage of work in the production of pottery is biscuiting or firing for which the clay

wares require to be thoroughly dried (In Khanapur 'Bhing'—mica powder is smeared on the clayware just before loading them in the kiln—Plate 17). The system adopted for biscuiting by hereditary potters is the same all over the State except for slight differences in regard to the mode of construction of the kiln attributable mainly to local practices.

A shallow pit dug in the ground near the potter's house constitutes the nascent type of kiln. Large vessels are arranged at the ground level (Plate 18) and care is taken to see that the interstices are filled with straw, brush—wood and other waste to avoid possible damages. Wares are placed in the kiln making the most advantageous use of the available space, and in a manner as to keep down to the minimum the cost of firewood. After loading the kiln is covered by straw and daubed with mud. The kiln is set on fire from the bottom and firewood is fed through the fire hole situated at the bottom in the front side of the kiln. When the wet mud covering the kiln becomes sufficiently dry, holes are made in it for the smoke to escape. Usually kilns are set on fire in the evening and opened early the following morning. The fire is extinguished and the entire apparatus is allowed to cool. After sufficient cooling the wares are carefully taken out of the kiln one by one as they are highly brittle.

Another type of kiln commonly in use is a crude construction usually erected in a separate shed. A wall with two holes to serve as feeding mouths for firewood is built. On one side of this wall two sloping sides are put up. Vessels are arranged in the kiln with enough space in between for the smoke to escape. After loading is completed, sweepings, straw etc., (Plate 19) are spread over the vessels and the whole system is covered by a layer of ash. Water is sprinkled to wet the ash to make it stick.

A crucible shaped oven with a grate about 50 cms. from the ground is constructed for biscuiting small and tiny wares (Plate 21). The kiln is loaded and covered with shards to retain heat and to allow the smoke to escape (Plate 22).

The usual time required to bake the clayware eevn in this type of kiln is one night. The kiln is set on fire in the evening and opened in the following morning. The fire is quenched and the whole system is allowed to cool.

Kiln for bricks are prepared when they are to be actually burnt. Bricks are piled one above the other with grating arrangements (Plate 24).

Firewood is the chief fuel used for firing claywares in the biscuit ovens. Cowdung cake, groundnut husk are also used depending upon availability (Plate 23). The firewood is locally purchased in the urban areas where there are no forests. The price varies from place to place and in view of this craft being diffused all over the State it has been found not possible to indicate with any exactitude the expenses incurred by this craftsmen. Groundnut husk is used in Bijapur and the price is about Re. 0.50 per gunny bag. This aspect has also been discussed in Chapter III—cost analysis.

Articles produced

In South Kanara district 12 types of vessels are made for cooking food and storing water.

1. *Gudana*

A cauldron for heating water and for boiling paddy as a preliminary to preparing parboiled rice. It is a pot with medium size mouth, constricted neck, bulged sides and round bottom. Its price varies from Rs. 1.37 to Rs. 2.50.

2. *Bani*

A wide mouthed vessel with conical sides and flat bottom. This is priced between Re. 1.00 and Rs. 2.75.

3. *Madike*

A pot with wide mouth, constricted neck and round bottom used for cooking food and its price is Re. 0.31.

4. *Koda*

A pot with a narrow neck and mouth, round bottom and a small flat base. It is used for carryingwater. The price is Re. 0.37.

5. *Alige*

Vessel for making curry having a wide mouth, involute neck and curved bottom. Price Re. 0.19 to Re. 0.25.

6. *Moge*

A pot of smaller size. Price Re. 0.12.

7. *Marige*

A large bowel with flat circular bottom used as a trough. Prince Re. 0.34 to Re. 0.40.

8. *Gaddaga*

A small bowl with curved bottom used to serve prepared food. Price Re. 0.06.

9. *Bavadi*

It is a lid. Price Re. 0.09.

10. *Korike*

A bowl with a base which is used as a substitute for plate especially by women in post natal period. Price Re. 0.09.

11. *Hooji*

A jug for keeping drinking water. Price Re. 0.31

12. *Deepadu Odu*

A cassolette. Price Re. 0.31.

Articles made in Bangalore District

1. *Arive*

A large pot with wide mouth, involute neck, bulged sides and round bottom used for storing and heating water. Price Re. 0.88 to Re. 1.00.

2. *Gadige or Koda*

A medium sized pot with narrow mouth, constricted neck, bulged sides and round bottom, for carrying water. Price Re. 0.37 to Re. 0.44.

3. *Madike*

A common term which denotes a pot. Price Re. 0.15 to Re. 0.22.

4. *Pasale*

A small pot with wide mouth, involute neck and curved bottom used for making curry. Price Re. 0.15.

5. *Lota*

A small pot to hold oils and other liquids. Price Re. 0.15.

6. *Karegadige*

Medium sized pot with narrow mouth, curved neck, bulged sides and round bottom for keeping prepared dishes. Price Re. 0.22.

7. *Apachetti*

A pot with wide mouth, involute neck, curved bottom and less deep than wide used for cooking vegetables. Price Re. 0.22 to Re. 0.25.

8. *Bosi*

A bowl. Price Re. 0.15 to Re. 0.22.

9. *Koladappale*

A large vessel with sides widening downwards and with a flat circular bottom used for heating water. Price Rs. 1.25.

10. *Kallumanige*

A pot resembling a ware made of soft stone, with almost uniform hollow from mouth to bottom. The bottom is flat and circular. It is used to keep salt and other articles in raw state. Price Re. 0.22.

11. *Mannina Gerugoode*

A pot with a wide mouth, bulging sides, contracting downwards and with a flat bottom. It is used to keep provisions. Price Re. 0.22.

12. *Kadlekayi beyisuva gadige*

A pot with perforated bottom for the roasting of groundnuts. Price Re. 0.75.

13. *Henchu*

Country tiles.—Price Rs. 40.00 for 1,000 pieces.

14. *Chadarabille*

Flooring tiles. Price Rs. 10.00 to Rs. 12.00 for 1,000 pieces.

15. *Kunda*

Garden pots, including seed pan and grafting pots. Price for 100 pots :—

	Rs.
Garden pots size 14″	.. 50.00
Garden pots size 12″	.. 34.75
Garden pots size 9″	.. 17.75
Seed pan	.. 24.00
Grafting pots	.. 17.50

At Kudikebevoor in Channapatna taluk of Bangalore district tiny pottery is made. Clay bells are a speciality of Kudikebevoor. The bells produce metallic sound. *Halu kudike, Ede kudike, Battalu, Acheru kudike, Milte, Dubbi, Enne gadige, Thuppada gadige,* are all tiny pots of almost same shape with slight variations in sizes (Plate 29). Prices for 100 pieces of each type of article :—

		Rs.
Halu kudike	..	1.00
Ede kudike	..	1.25
Acheru Kudike	..	3.50
Seeru kudike	..	5.00
Mille	..	1.00
Dubbi	..	3.50
Enne Gadige	..	7.00
Thuppada gadige	..	7.00
Battalu	..	1.25
Hanathe (oil lamp of clay)	..	1.25
Chilume (tobacco pipe)	..	2.00
Dhooparthi (cassolotte)	..	2.50

Following are the articles made at Khanapur in Belgaum District (Plates 25 to 28) :—

1. *Dera*

A large cauldron with constricted neck, bulged sides and round bottom used for storing water. Price Rs. 4.00.

2. *Bachak*

A large vessel with narrow base, wide mouth and round bottom used for heating water. Price Rs. 2.00 to Rs. 2.50.

3. *Gagar*

A pot for carrying water. Price Re. 0.37.

4. *Maat*

A vessel for cooking rice, with wide mouth, short constricted neck, curved bottom. Price Re. 0.44.

5. *Bindiga*

A pot for carrying water. Price Re. 0.37.

6. *Tenthula*

A vessel for cooking vegetables with wide mouth, constricted neck, curved bottom and less deep than wide. Price Re. 0.19.

7. *Moga*

A small pot for drinking water. Price Re. 0.12.

8. *Dhakni*

A lid. Price Re. 0.03.

9. *Thava*

A pan. Price Re. 0.06.

10. *Ubo*

A small pot with narrow mouth, constricted neck, round bottom used for serving liquid dishes. Price Re. 0.06.

11. *Sugudo*

Tiny pot used for distribution of *Ellu* (a mixture prepared of seasmum, groundnut, fried gram, gur, copra, etc.,) on the occasion of Sankranthi. Price Re. 0.06.

12. *Jogli*

A bowl. Price Re. 0.06.

Articles made at Bijapur

1. *Harave*

A large pot with medium size mouth, involute neck, bulging sides and round bottom for heating water. Price Re. 1.00 to Rs. 1.50.

2. *Koda*

A medium sized pot with narrow mouth constricted neck, round bottom used for carrying water. Price Re. 0.75 to Re. 1.00.

3. *Madike*

Pots of varying sizes for cooking food. Price Re. 0.25 to Re. 0.75.

4. *Kooji*

A water jug. Price Re. 0.75.

5. *Kunda*

Garden pot. Price Re. 0.50.

6. *Pannolige*

Water pipe. Price Re. 0.50.

7. *Usali*

Smoke chimney. Price Re. 1.00.

8. *Ole*

Oven. Price :

Firewood oven (direct fire)	..	0.25
Firewood oven (double stage)	..	0.31
Charcoal burner	..	0.20

Articles for ceremonial use

Hereditary potters make utility articles for domestic use. As regards the ceremonial use of clay articles, the making of the image of Ganapathi out of clay is worth mentioning. According to Hindu custom the image of Ganapathi is worshipped on the Chaturthi of Bhadrapada month (August-September) every year and later immersed in a tank or well. This custom has given scope and opportunity to those engaged in making these images of making a sizable profit during this season. While persons belonging to the castes of Gudigar, Jingar or Chitragar, etc., make clay images of Ganapathi as a seasonal occupation, hereditary potters rarely engage themselves in doing this. The images are made by hands as well as by moulds. Handmade images cost more ranging form Re. 1.00 to Rs. 5.00 while moulded ones cost less ranging from Re. 0.25 to Re. 0.75. The larger demand for images made by hand in spite of their higher cost is due to a belief of their being more sacred. After making the images in clay they are attractively coloured.

CHAPTER III

ECONOMIC AND GENERAL ASPECTS

Cost of Production

The production of articles of varying shapes and sizes in one lot at a time so as to make fullest use of the capacity of the kiln defies even an approximate assessment of the cost of each individual piece. Hence cost of production is worked out for the entire output of the kiln. It is Rs. 30.00 per lot and, if disposed wholesale of is expected to realise Rs. 100. This cost is made up of :

		Rs.
Cost of clay (including transporting charges)	..	5.00
Cost of firewood	..	20.00
Loss due to breakage	..	5.00
Total	..	30.00

To earn as above a profit of Rs. 70.00 two persons have to work for 30 days and the earning of each person per day works out to Rs. 1.12.

Capital

The initial investment in the craft is about Rs. 20 made up of Rs. 15 towards the cost of wheel and Rs. 5 of other tools. An investment of about Rs. 25 towards clay and firewood will suffice to set the first kiln. Practically no household not belonging to the line of the hereditary craftsmen has ventured to take up this avocation.

Marketing

Articles made by potters are stored in their houses without any extra packing. Articles are sold locally or at weekly markets in the nearby villages or towns. Usually there is no intermediary or middleman. Wherever Co-operative Societies have been established, disposal of finished wares is channeled through them.

In Khanapur and a few other centres of the State, potters supply clayware produced by them to the villagers and receive payment in kind under Jajmani system. Under this system the potter is under an obligation to supply claywares to households who happen to be their regular customers, as and when needed. In return the households give ragi or paddy to the potters at the time of harvest. The quantity of grains so given depends upon the size of the recepient household calculated at 6 seers (measures) per member.

Potters transport claywares from their respective homes to the market in head loads (Plate 37) in slings or in bullock carts.

Economic conditions of Kumbars

Kumbars are independent workers and the craft is carried on exclusively by household members. The earnings of a potter ranges from Re. 0.88 to Rs. 1.25 per working day. Case studies have shown that 88 per cent of the income has been derived from pottery craft, 2 per cent from agricultural labour and 10 per cent by way of rent and other sources. Regarding the expenditure of the Kumbar households, 57 per cent of the total was on food and drinks, 3 per cent on fuel and light, 1 per cent on house repair, 7 per cent on clothing, 7 per cent on pan, supari and tobacco products, 6 per cent on other miscellaneous items and 19 per cent on purchase for production.

Potters find employment throughout the year except in Malnad areas where weather conditions during the monsoon is unfavourable for the drying of clayware. They work from sun rise to sun set without adhering to any strict hours of work or interval. Normally they do not work at nights except on the days the kilns are set.

Most of the Kumbars are solely dependent on pottery while a few have agricultural labour, or self cultivation as subsidiary occupations. As regards the availability of raw material or fuel the potters are not experiencing any hardships.

Case studies

1. A household in Hunsemakki village in Coondapur Taluk of South Kanara District.

It is a hereditary potter's household with 6 normal residents. Their mother tongue is Tulu and they follow the *Aliyasanthana* law of inheritance. The

6 members are (1) head (52); (2) wife (42); (3) Son (26); (4) Daughter (6); (5) son (4); (6) Mother (76); All of them are illiterate.

The head of the household owns 4.00 acres of land granted to him by the Government as Darkasth. Out of the 4.00 acres he has leased out 1.50 acres for crop rent and receives 4 *muras* of rice annually. The head, his wife and son work as potters. The son also works as agricultural labourer. The household owns the house in which it resides. It is a mud house with thatched roofing valued at about Rs. 300.

The household possesses 2 brass vessels used for taking food and 3 aluminium tumblers.

The two male adults have 1 shirt and 1 dothi each and the two female members have 2 saries each. The boy has only one shirt and the girl a frock. All the members take tea at 7 A.M., *ganji* at 11 A.M. and a square meal of rice and curry at 9 P.M.

The household sets 16 kilns per year and the average value of articles produced per kiln is Rs. 60.

Family budget of the household for last year (1963)

Income		Rs.	*Expenditure*		Rs.
1. Pottery	..	960	1. Food (cereal)	..	800
2. Agr. labour	..	150	(non-cereal)	..	120
3 Rent	..	100	2. Drinks	..	40
			3. Fuel and Light	..	40
			4. House repair	..	10
			4. Clothing	..	60
			6. Pan and Tobacco		100
			7. Others	..	40
Total	..	1,210	Total	..	1,210

2. A household in Wakvadi village in Coondapur taluk of South Kanara District.

The household consists of 7 members: (1) Head (65); Wife (48); (3) Son (30); (4) Son (25); (5) Daughter (20); (6) Daughter (18); (7) Son (10). All the members of the household except the son aged 10 years work as potters and are married. The wives of the two sons and the husbands of the two daughters are with their respective parents and the persons enumerated are the normal members of this household. The members speak Kannada at home and follow the *Aliyasanthana* law of inheritance.

The household owns no assets. It is put up in a rented hut and the rent per annum is Rs. 20.00. The household possesses 4 brass vessels and 4 bronze vessels. Each male member has one pair of dress and female members have 2 saries and 2 blouses each. All the members of the household take tea at 7 A.M., *Ganji* at 8 A.M., and meals (rice with curry) twice a day once at 1 P.M. and again at 8 P.M.

The household sets 20 kilns a year and the average value of articles produced per kiln is Rs. 100.

Family budget for last year: (1963).

Income		Rs.	*Expenditure*		Rs.
1. Pottery	..	2,000	1. Food (cereal)	..	840
			(non-cereal)	..	260
			2. Drinks	..	60
			3. Fuel and lighting		50
			4. House rent	..	20
			5. Clothing	..	170
			6. Pan, etc.	..	200
			7. Others	..	100
			8. Purchase for production.		300
Total	..	2,000	Total	..	2,000

3. A household in Khanapur, a taluk headquarters in Belgaum District:

There are 11 members in this household: (1) Head (65); (2) Wife (60); (3) Son (32); (4) Son (28); (5) 2nd son's wife (24); (6) 3rd son (18); (7) 4th son (12); (8) 2nd son's son, (4); (9) 2nd son's son (2); (10) Son's daughter (2); (11) Son's daughter (11).

These are Marathi speaking Kumbars and are non-vegetarians. Persons shown against the serial numbers 2, 5 and 10 assist the 4 male adults who work as potters, by bringing firewood from the nearby forest and attending to the marketing of the wares.

The household owns 16.00 acres of land at Machigad and has leased it out for crop rent and receives an annual rent of 12 bags of paddy and Rs. 400 cash. The household regularly supplies clay-ware to 9 households in Lokuli, 10 households in Kukkatageri, 16 households in Asoka and 20 households in Machigad round about Khanapur under Jajmani system and receives payment in kind at the time of harvest. The quantity of paddy to be paid

to the Kumbar depends on the size of the recepient's household calculated at 6 seers per member. The imputed value of the paddy collected by this household during the year previous to this survey is Rs. 800. In the local shandy the household sells clayware worth Rs. 15 every week. The household is put up in a dwelling of its own, which is quite spacious and roofed with country tiles. All the members have two sets of dress. They take tea and Bakri (chapaties of jowar and ragi) at 7 A.M., rice and curry at 1 P.M. and 9 P.M. The household sets 30 kilns a year and the average value of articles produced per kiln is Rs. 60.

Family budget for last year : (1963).

Income		Rs.	*Expenditure*		Rs.
1. Pottery :			1. Food (cereal)	..	1,080
(*a*) Cash	..	1,000	(non-cereal)	..	360
(*b*) Kind	..	800	2. Drink	..	120
2. Rent	..	600	3. Fuel and light	..	60
			4. House repair	..	10
			5. Clothing	..	200
			6. Pan and tobacco		120
			7. Others	..	200
			8. Purchase for production.		*250
Total	..	2,400	Total	..	2,400

* At Khanapur the potters collect firewood from the forests and as such the cost of firewood is minimised.

4. A potter's household in Bijapur Town :

It is a four member household. (1) Head (38); (2) Wife (29); (3) Son (12), (4) Son (9);. The head and wife pursue pottery trade and the two sons are students. They are Lingayat Kumbars and speak Kannada. Each member has two sets of dress. They take tea every morning, breakfast at 9 A.M. and will also have two meals consisting of *Bakri*, rice and curry once at 2 P.M. and again at 9 P.M. The household is put up in its own house.

The household sets 21 kilns a year and the average value of articles produced per kiln is Rs. 50.

Family budget for last year : (1963)

Income		Rs.	*Expenditure*		Rs.
1. Pottery	..	1,050	1. Cereals	..	400
			(non-cereals)	..	120
			2. Drinks	..	50
			3. Fuel and light	..	40
			4. House repair	..	10
			5. Clothing	..	50
			6. Pan, Tobacco	..	80
			7. Others	..	50
			8. Purchase for production.		250
Total	..	1,050	Total	..	1,050

5. A household in Kudikebevoor, a village in Channapatna taluk of Bangalore District :

There are 5 members in this household. (1) Head (42); (2) Wife (38); (3) Daughter (22); (4) Son (12); (5) Daughter (9); It is a Kannada potter's household.

The household is staying in its own house and also owns 3.00 acres of land which has been leased out for crop rent. Last year receipts from this land were 3 pallas of paddy, 4 pallas of ragi and 10 headloads of straw. Each member in the household has two sets of dress. All of them take tea in the morning and two meals with the menu of ragi balls (hittu) and rice with curry.

The household sets 20 kilns a year and the value of articles produced per kiln ranges from Rs. 45 to Rs. 50.

Family budget for last year : (1963).

Income		Rs.	*Expenditure*		Rs.
1. Pottery	..	940	1. Food (cereals)	..	450
2. Rent	..	160	(non-cereals)	..	120
			2. Drinks	..	40
			3. Fuel and light	..	40
			4. House repair	..	10
			5. Clothing	..	60
			6. Pan, tobacco	..	70
			7. Others	..	90
			8. Purchase for production.		220
Total	..	1,100	Total	..	1,100

Co-operative Societies

In all there are 122 Potters' Co-operative Societies in the State as on 31st July 1963. The number of Co-operatives in the several districts are as follows : Bangalore-7, Belgaum-11, Bellary-3, Bidar-2, Bijapur-2, Chikmagalur-3, Chitradurga-9, Hassan-8, Coorg-3, Dharwar-7. Gulbarga-9, Kolar-6, Mandya-9, Mysore-6, North Kanara-11, Raichur-5, Shimoga-3, South Kanara-11 and Tumkur-7. The Co-operative Societies are receiving help from the Khadi and Village Industries Commission through the State Khadi Board.

Following is the statement of Grants and Loans given by the Commission for various schemes undertaken by the Co-operative Societies under extension programmes :

Sl. No.	*Particulars*	*No. of Units*	*Grant* Rs.	*Loan* Rs.
1.	Common work shed unit..	13	58,500	58,500
2.	Small common work shed	13	15,750	17,750
3.	Building material unit ..	5	50,540	54,940
4.	Brick Bhattis ..	3	5,000	1,000
5.	Country roofing tile unit..	4	8,700	8,700
6.	Training-*cum*-production centres.	6	62,490	27,690
7.	Model production centre	3	20,050	..
8.	Equipment subsidy ..	5	32,800	27,900
9.	Assisted with—			
	(i) Share Capital ..	56	..	57,972
	(ii) Working Capital ..			3,82,370

Following are the details of the schemes sponsored by the Khadi and Village Industries Commission through the Co-operative Societies.

Sl. No	*Type of Unit*	*Total as on* 31-3-1963	*Set up as on* 31-3-1963	*Working as on* 31-3-1963	*Units reported*	*Production value in* Rs.	*Sales (including previous stock)* Rs.	*Employment (No. of Units)* *Full time*	*Part time*	*Wages paid (Rs.)* *Full time*	*Part time*
1	2	3	4	5	6	7	8	9	10	11	12
1.	Common workshed unit	13	13	10	10	63,046	81,577	100	62	32,144	2,705
2.	Small common workshed	13	8	8	8	38,483	36,826	49	19	13,155	..
3.	Building material ..	5	5	5	5	58,796	41,099	63	43	24,675	4,011
4.	Brick Bhattis ..	3	2	2	2	7,856	19,334	13	..	3,940	..
5.	Country roofing tiles ..	4	2	2	1	6,053	4,185	9	..	2,017	..
6.	Training-*cum*-production	6	6	6	6	47,919	47,367	88	..	16,524	..
7.	Model production centre	3	3	1	1	1,943	2,080	2	..	756	..
8.	Equipment subsidy ..	3	2	1	1	3,240	3,338	8	8	1,080	153
9.	Units assisted with share and/or working Capital	56	54	53	33	57,809	1,38,450	370	108	50,634	3,265

Details of Potters' Co-operative Society at Ramanagaram

"The Potters Craft Co-operative Society Ltd.," was registered on 21st January 1958.

Ramanagaram is a town and taluk headquarters in Bangalore District at a distance of 28 miles from Bangalore situated on the Bangalore-Mysore Road. The town is connected by rail as well as by road from Bangalore.

The aim of the Co-operative Society at Ramanagaram is to provide marketing facilities to the pottery produced by its members. The area of operation of the Society is not limited to the town of Ramanagaram but also extends to the entire taluk of Ramanagaram.

There are 125 members in this Co-operative Society and they hold 160 shares of value of Rs. 5 each. The paid-up share capital is Rs. 589. The affairs of the society are managed by an elected committee.

The Co-operative Society has received a loan of Rs. 1,000 towards share capital and Rs. 3,000 towards working capital from the 'Khadi and Village Industries Commission. An amount of Rs. 500 has been received from the same agency for putting up of common work sheds. The society has yet to repay the loans.

This Co-operative Society gets orders for garden pots from establishments such as Hindustan Machiee Tools, Hindustan Aircraft, Indian Telephone Industries and for grafting and seed pans from horticultural and sericultural departments. As there is no production unit attached to the Society it gets the pots made by its members and supply against orders. The Society keeps a margin of profit of 6¼ per cent on the products sold. During 1962-63 pots worth Rs. 13,000 were sold by this Co-operative Society.

Training Centres

The Artisan Training Centre at Khanapur in Belgaum District has been functioning from 2nd January 1960. Pottery is one of the subjects taught, the others being carpentry, smithy and leather stitching.

In 1956, prior to State's Re-organisation, the Government of Bombay established a Pottery Demonstration Centre at Khanapur for training candidates in the craft. This centre later merged with Artisan Training Institute on 2nd January 1960.

Training is imparted at this Centre to 30 candidates every year. At present a batch of 20 candidates is undergoing training. An outside trainee gets a stipend of Rs. 30 per month and a local trainee Rs. 20 per month. Candidates are selected by the Block Development Officers and sent to Khanapur. Hereditary potters are preferred for admission over others. Candidates must be between the age of 16 and 25 and must have passed the final primary examination. The duration of training is 12 months commencing from 1st of April.

From 1956 to 1960, 40 hereditary potters were trained in this centre at the rate of 10 each year. Trainees of the earlier batches were paid a stipend at Rs. 15 per month while the last batch was paid at Rs. 40 per month.

After its merger with Artisan Training Institute, 3 batches of candidates have completed training and the 4th batch was undergoing training during the period of survey. The number of candidates trained in the Artisan Training Institute each year is set out below:—

1960-61	..	7 trainees
1961-62	..	7 trainees
1962-63	..	15 trainees
1963-64	..	20 trainees

Among the 7 candidates of the first batch, 6 were hereditary potters. All the 7 of the second batch were hereditary potters while in the third out of 15 only 3 happen to be so. In the present batch none belongs to the profession by heredity.

The syllabus for the course is throwing—jigger jolleying—casting—body—washing—saggar making—wad making—biscuit and glost firing in kilns—painting—engobe applying—glazing—tiles pres-ing-mould making—drawing—estimating, etc.

There are 4 rope driven wheels, 1 kick wheel and 3 ball bearing wheels in the Institute.

The Pilot Production Unit attached to the Artisan Training Institute produces painted clay toys. About 40 toys of articles are made in this unit and they have been given in Appendix I indicating also the price at which they are sold at the show room.

In the Pilot Production Centre there are 3 skilled workers who are being paid on the basis of daily wages. One of them gets Rs. 4 per working day and two others at Rs. 2 each per working day. In the Pilot Production Centre articles are made by slip casting a brief description of which is given in Chapter II of the monograph under Techniques of Production. The following table shows the values of various types of articles produced, sold since the inception o fthe centre and the stock to the date of survey :—

Description	*Production*	*Sales*	*Stock*
	Rs.	Rs.	Rs.
1. Biscuited articles ..	3,475	15	3,460
2. Painted biscuited articles ..	1,928	747	1,181
3. Glazed articles ..	3,091	350	3,041
4. Painted glazed articles ..	852	365	487
5. Plaster of Paris moulds ..	3,423	..	3,423
6. Plaster of Paris panels ..	64	..	64
7. Painted plaster of Paris panels ..	573	42	531
8. Clay models ..	48	..	48

The above excludes the clay valued at Rs. 281 and green articles valued at Rs. 1,046.

Another Training Institute, Ramanagaram

Another training centre run by the Government of Mysore is located at Ramanagaram in Bangalore district. In the year 1939 a Pottery Production unit was founded at Ramanagaram where production of clay toys was carried on till 1959. On 1st October 1959 the production unit was marged with the Artisan Training Institute established at the place. In this centre candidates are trained in preparation of clay, throwing, casting and pressing, firing and kiln constructing.

Since 1959 five batches of candidates have been trained here. The first batch was trained from September 1959 to March 1960. The duration of training for the remaining batches is 12 months from 1st of April to 31st March. Details of the candidates trained since 1959 are as follows :—

Sl. No.	*Period*	*Total candidates trained*	*Hereditary potters*	*Non-hereditary potters*	*Local candidates*	*Others*
1	2	3	4	5	6	7
1.	1959-60	13	5	8	3	10
2.	1960-61	8	8	..	1	7
3.	1961-62	6	6	..	..	6
4.	1962-63	14	8	6	10	4
5.	1963-64	5	5	..	..	5

Stipend at Rs. 20 per month to local trainees and at Rs. 30 per month to outside trainees is paid.

In the Pilot Production Unit attached to this centre there is one skilled worker (moulder and painter) and 4 unskilled workers. All of them work on daily wages. The skilled worker is paid Rs. 4 per working day and the unskilled workers Rs. 2 each per working day.

During 1962-63 articles worth Rs. 6,322 were produced in this unit and articles worth Rs. 5,436 were sold out against orders and also at the show room at Ramanagaram. The total expenditure during the same period on raw materials was Rs. 2,056 and wages Rs. 2,824.

Articles are made by using plaster of paris moulds and by adopting the slip casting as well as pressing methods, the details regarding which are furnished in Chapter II under Techniques of Production. Articles produced at this Centre and their retail price are given in Appendix II. These articles are available at the Handicrafts Emporium in Bangalore.

Central Village Pottery Institute, Khanapur

In 1954, the All India Khadi & Village Industries Commission took up village pottery for country wide development. The Commission decided to establish a training-*cum*-research centre at Khanapur, where good clay, fuel, water and other facilities are readily available. To begin with the centre started functioning in a rented building. Later, as certain difficulties were encountered for its continuance in the same premises, the Commission thought of owning a building. The efforts made in this direction actually bore fruit in 1962 when a new building was put up, on the banks of river Malaprabha by the side of the main road from Khanapur to Panjim. A hostel is also attached to this centre to accommodate 40 trainees.

The training for first batch commenced on the 2nd October 1954. The course lasted for 5 months and 40 candidates were trained. Later the duration of training was extended to 10 months and the number of trainees was reduced to 30.

The Institute is under the control of a Superintendent, the remaining staff being Ceramist-1, Technical Assistant-1, Instructors-3, Master Potter-1 and Supervisor-1. The Institute provides two courses, one for Pottery Supervisors and the other for Master Potters.

Pottery supervisors deal with the general organisational aspects of pottery craft and the master potters acquire proficiency in the various improved techniques of the industry and become sufficiently skilled and efficient for successfully running the village pottery production units.

Details of the candidates trained in the Institute since 1954 are as follows :

Batch No.	Year	Total No. of trainees	Trained for	
			Supervisor's course	Master potter's course
1	2	3	4	5
I	1954-55 ..	35	22	13
II	1955-56 ..	28	7	21
III	1956-57 ..	32	18	14
IV	1957-58 ..	28	19	9
V	1958-59 ..	29	21	8
VI	1959-60 ..	32	14	18
VII	1960-61 ..	30	17	13
VIII	1961-62 ..	28	17	11
IX	1962-63 ..	26	12	14
X	1963-64 ..	36	18	18

Pottery Supervisor's Course

Candidates sponsored by the Potters' Co-operative Societies, Registered Institutions, State Boards and the State Governments are admitted to this course. The minimum qualification for admission is Pre-university course, though graduates are preferred. Candidates must be between 18 and 35 years of age. The duration of training is 10 months from 1st October to 31st July and, in addition, practical training for 2 months.

Candidates who receive training in this course would acquire sufficient technical knowledge and skill to organise and run village pottery craft on sound technical lines and also to supervise the working of the units so organised. They will have a thorough knowledge of all aspects of pottery technique including the preparation of schemes for production units and planning of production programmes.

Master Potter's Course

Professional, experienced and skilled potters sponsored by Co-operative Societies, registered institutions, State Boards and State Governments are usually preferred for admission to this course. Candidates should have passed the final primary examination and should be between 18 and 35 years. The duration of the course is 10 months from 1st October to 31st July followed by practical training for a period of 2 months.

Candidates trained in this course will have a basic knowledge of the trade and would be sufficiently equipped to undertake the making of normal village pottery articles. They will also be competent to adopt new methods of production techniques with the necessary know how of kiln settings, firing, unloading, etc. They also become well versed in testing clays and serving in production, training or demonstration units.

Syllabi for both the courses include history of pottery classification of terracotta-building materials-clay toys, art pottery—selection of raw materials—fuel—preparation of clays for shaping, shaping of claywares by throwing on the wheel, building by hand, pressing to shape in plaster of paris, clay and wooden moulds, Jigger jolleying—casting—drying of claywares—firing of claywares—colouring and painting of earthenwares—simple glazing--simple modelling and moulding.

An examination is held at the end of the training period and certificates are issued to successful trainees. Trainees are paid a stipend of Rs. 45 per month. Besides, travelling expenses from the home place of candidate to Khanapur and back will be borne by the Board. Free accommodation is provided in the hostel run by the Institute.

Vanitha Sahakari Kamagar Sangh

The Vanitha Sahakari Kamagar Sangh at Khanapur is established with the object of providing work for the women folk in their spare time. M/s. Ceramic Products Ltd., Khanapur help the Sangh in several ways. They are giving such work as preparation of sanitary wares and fittings to the Sangh. They have also permitted utilisation of the spare capacity of their grinding and washing equipment and supply them ready clay mix. They have allowed the Sangh to use their spare kilns on a reasonable rent. At the time of investigation the rent to be paid by the Sangh for using the kiln had not been fixed. They have also promised to provide small electric power of 10-15 H.P., and to spare the services of their technical and engineering staff to solve their technical problems.

The Sangh came into existence on 19th January 1963. There are 25 members and 5 sympathisers on the rolls. The share value is Rs. 25. A sum of Rs. 350 has been subscribed towards the share capital by the members and Rs. 600 has been collected from sympathisers. The total working capital of the Sangh is Rs. 18,600 of which Rs. 6,000 has been given by the Government as subsidy and Rs. 8,600 has been advanced by the Chairman of the Sangh as loan and Rs. 4,000 has been advanced by M/s. Ceramic Products Ltd.

The following equipment has been supplied to the Sangh by M/s. Ceramic Products for which no hire is being charged :

Sl. No.	*Particulars*	*No.*	Valve (*Rs.*)
1	2	3	4
1.	Jigger jolley	5	3,000
2.	Press	1	3,000
3.	Th eading press	1	500
4.	Moulds	..	3,000
5.	Work shed	1	10,000
6.	Kiln	1	15,000

Members of the Sangh work on daily wage system. Workers of the Jar section are paid Rs. 1.25 per day. They have to work for 8 hours from 8 A.M. to 12 NOON and from 1 P.M. to 5-30 P.M. with two intervals of 15 minutes each. Jars (stoneware) are made in 36 different sizes ranging from $\frac{1}{2}$ lb. to 25 lbs. in varying shapes with or without screw tops (Plate 55).

Workers of the sanitary section are paid on piece work basis, the rate of wage being Re. 0.33 for a 4" trap, Re. 0.37 for a 6" pan and Re. 0.88 for a 9" pan. These sanitary fittings are supplied to M/s. Ceramic Products in an unglazed condition against orders.

Jars are sent to dealers at Belgaum, Bangalore, etc. During the year 1962-63 Jars worth Rs. 8,464 were sold by the Sangh.

CHAPTER IV

CONCLUSION

Claywares manufactured by local hereditary potters are used mostly by the poorer sections of the people, who cannot afford the luxury of burnished brass vessels or even the cheaper aluminium utensils. Even among some of the affluent classes, there is a belief that food cooked in clayware is more beneficial to health than food cooked in metallic wares, most of which are attacked either by the acids or by salts in food. In consequence these wares are in demand all round the year.

The potters have been conventionally subjected to a social stigma as being inferior to certain other higher castes. Their earnings are also not commensurate with the amount of labour they put in. Being economically weak, they naturally occupy a lower rung in the social ladder.

There is a widespread belief that potters are facing hard days after the advent of metallic wares. This statement cannot be totally accepted. Metallic wares have been in use from time immemorial and if this statement were true the pottery craft should not have survived this long. However, the aluminium ware which is of more recent origin has, on account of its comparative cheapness, come to replace to some extent the clay utensils even in village homes. Due to rapid improvement in the economic conditions of the people in all strata of society after independence, even the poorer section are now in a position to find the wherewithal to go in for small quantities of metallic wares though *these can and will never completely replace* claywares. The belief that claywares do good to health dies hard. Also the earthen pots being liable to breakages require frequent replacement thus creating a never ceasing demand for this cheap ware of essential domestic use to keep the potter's wheel spinning for ever. Even if metal ware, which is a status symbol, replaces earthen pots to some extent, the spread of tiled houses—another status symbol in rural areas will continue to provide employment to the potter for some more time. The potter's life has all along been one of bare subsistence with few luxuries. As the potter leads a simple life with limited wants and the trade involves a small initial outlay, it has been possible for some to pursue this trade.

APPENDIX I

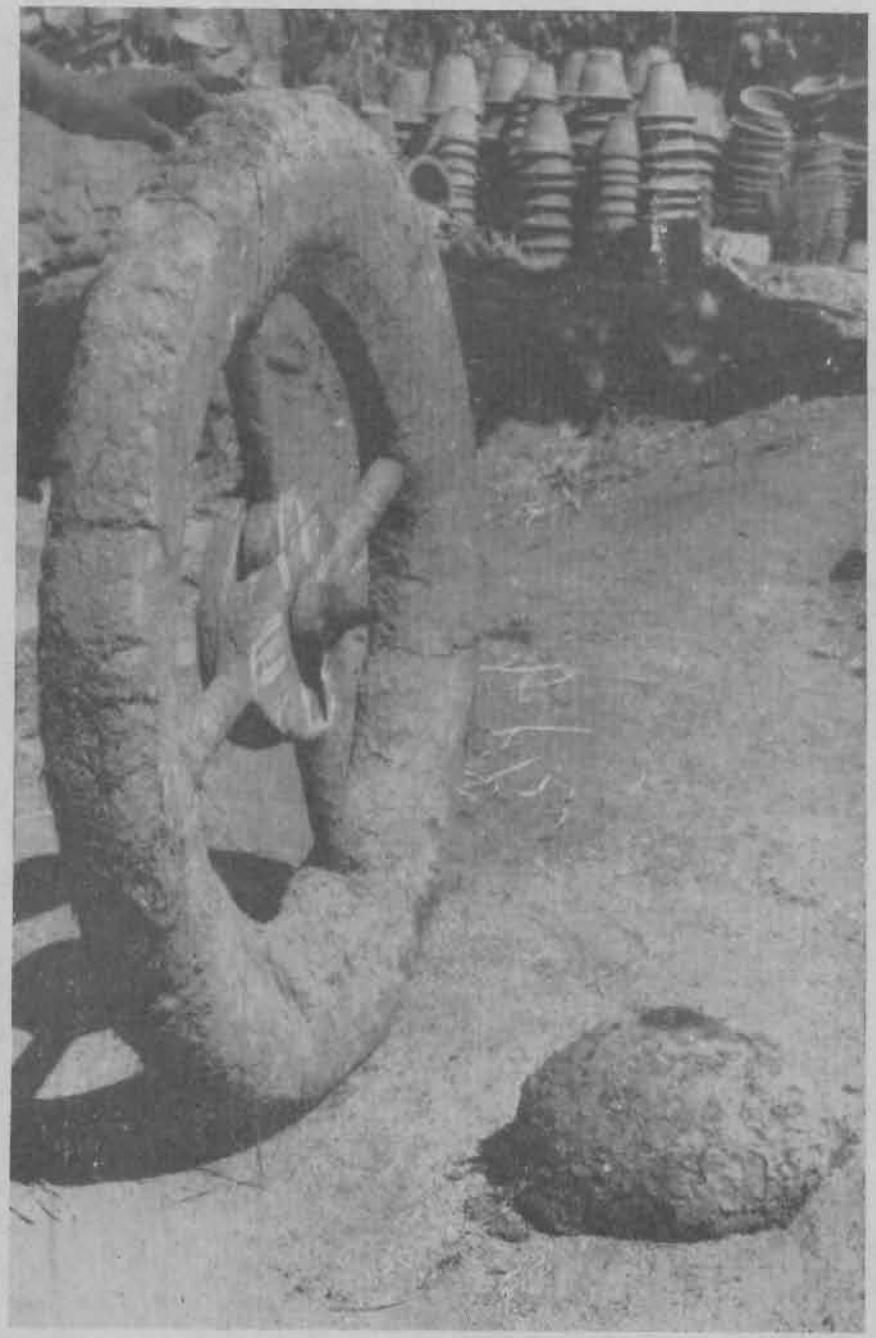
PRICE LIST OF ARTICLES PRODUCED AT THE PILOT PRODUCTION UNIT ATTACHED TO THE ARTISAN TRAINING INSTITUTE, KHANAPUR

Sl. No.	*Name of articles*	*Price*
		Rs.
1.	Bowl (big)	1—00
2.	Bowl (small)	0—82
3.	Ash tr y (big)	0—80
4.	Ash tray (small)	0—55
5.	Sleeping dog	0—60
6.	Buddha	0—90
7.	Dog with fur	0—45
8.	Indian Dancer	1—00
9.	Watch dog	0—70
10.	Gopal boy	1—10
11.	Cat head	0—90
12.	Shagi dog	0—65
13.	Lady with veena	1—30
14.	Sethji	1—00
15.	Sethani	1—00
16.	Small Ganapathi	0—50
17.	Flying bird	6—05
18.	Kothwal horse	1—25
19.	Bagal bird	1—27
20.	Air India Man	1—27
21.	Standing Bhataji	1—00
22.	Marwari girl	1—50
23.	Girl with bracelet	1—00
24.	Hyderabad monkey	1—25
25.	Sitting cat	1—00
26.	Standing dog	0—43
27.	Oriental horse	1—12
28.	Deer	0—90
29.	Small elephant	0—40
30.	D. C. B. Bull	0—40
31.	Sitting dancer	1—30
32.	College girl	1—65
33.	Standing rabbit	0—37
34.	Flower vase	1—54
35.	Flower vase (bamboo type)	1—38
36.	Bowl D. C. C.	1—00
37.	Boy on fish	0—50
38.	Boy on dog	0—50
39.	Krishna with fruit	1—00
40.	Tamburiwala	1—00

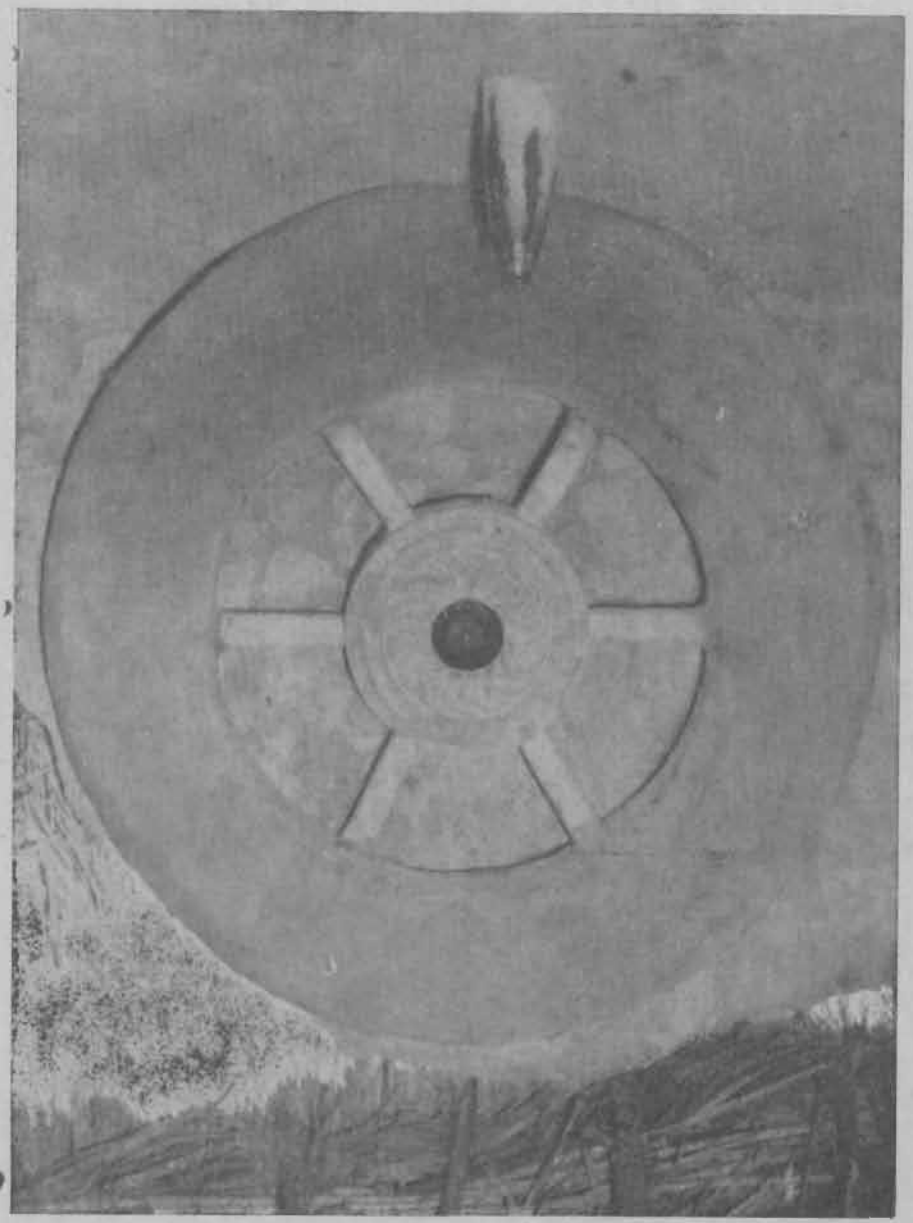
APPENDIX II

PRICE LIST OF ARTICLES PRODUCED AT THE PILOT PRODUCTION UNIT ATTACHED TO THE ARTISAN TRAINING INSTITUTE, RAMANAGARAM

Sl. No.	*Name of article*	*Price*
		Rs.
1.	Swan (big)	0—37
2.	Swan (small)	0—15
3.	Elephant (big)	0—56
4.	Elephant (small)	0—06
5.	Bear (big)	0—50
6.	Bear (small)	0—25
7.	Elephant plate	1—00
8.	Sea bird	0—50
9.	Venkateshwara panel	12—50
10.	Buddha (big)	2—00
11.	Buddha (small)	1—00
12.	St. Teresa	1—00
13.	Radhakrishna	2—00
14.	Namasthe lady	1—00
15.	Horse (Bengal)	3—00
16.	Raghavendraswamy	2—00
17	Decorative plate	2—00
18.	Ganesha	1—00
19.	Ajantha head	0—50
20.	Sitting lady	0—50
21.	Bull (pair)	2—00
22.	Bamboo hanging pots	2—00
23.	Gandhiji	4—00
24.	Gomateshwara	4—00
25.	Belur panel (coloured)	1—50
26.	Belur panel (biscuited)	1—00
27.	Lepakshi panel (coloured)	2—00
28.	Lepakshi panel (biscuited)	1—00
29.	Dasavathara set	0—62
30.	Rana set (4 pieces)	0—50
31.	Tiripuathi set (6 pieces)	1—80
32.	Meenakshi panel	0—50
33.	Assorted panels	0—50
34.	Wall vases	1—15
35.	Jesus Christ	3—00
36.	Shiva-Ganas (5 pieces—coloured)	10—00
37.	Shiva-Ganas (5 pieces—biscuited)	5—00
38.	Bowl—hang pot	3—75
39.	Pot with stand	2—75
40.	Small saving box	0—40
41.	Golka	0—10
42.	Clay pipes	0—87
43.	Cement pipes	2—00
44.	Flat tiles (1,000)	14—00
45.	Light tiles	0—25
46.	Cement cholas	2—00



1. Mysore type wheel having four spokes



2. Dharwar type wheel with six spokes



3. Propelling the wheel with a stick inserted in a hole in the rim



4. A thrower shaping a clayware on the wheel



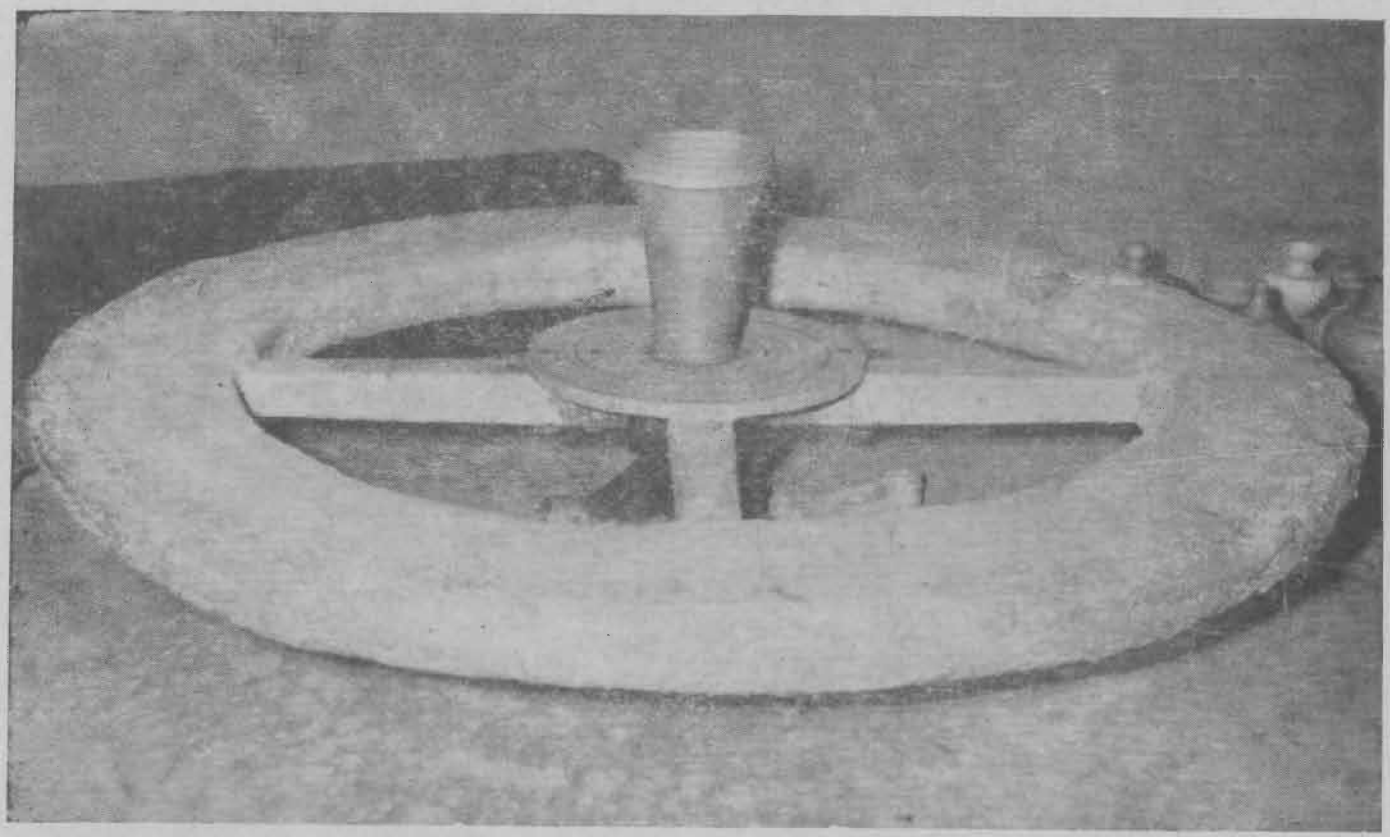
5. Wheel of Kudikebevoor is of the Mysore type but smaller in size. Here a potter is shaping a tiny clay pot.



6. Potters of South Kanara sit on a low stool while throwing. The assistant sits on the ground to propel the wheel. The wheel in the photograph is a solid stonedisc padded on by a thick layer of termitarium earth and coir at the outer periphery.



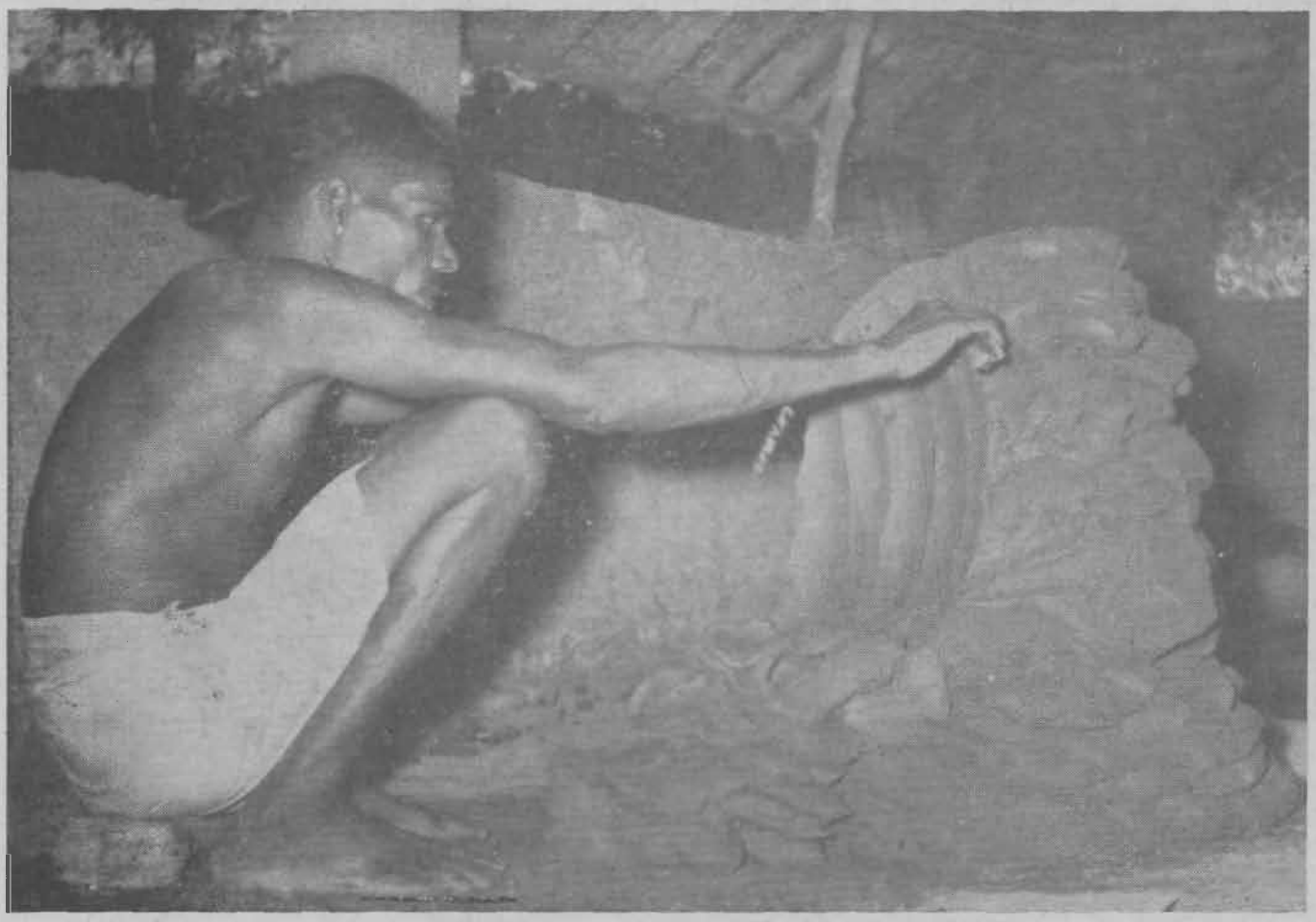
7. A cup shaped wheel of South Kanara—The quantity of clay on the wheel head would suffice to throw 5 to 10 articles



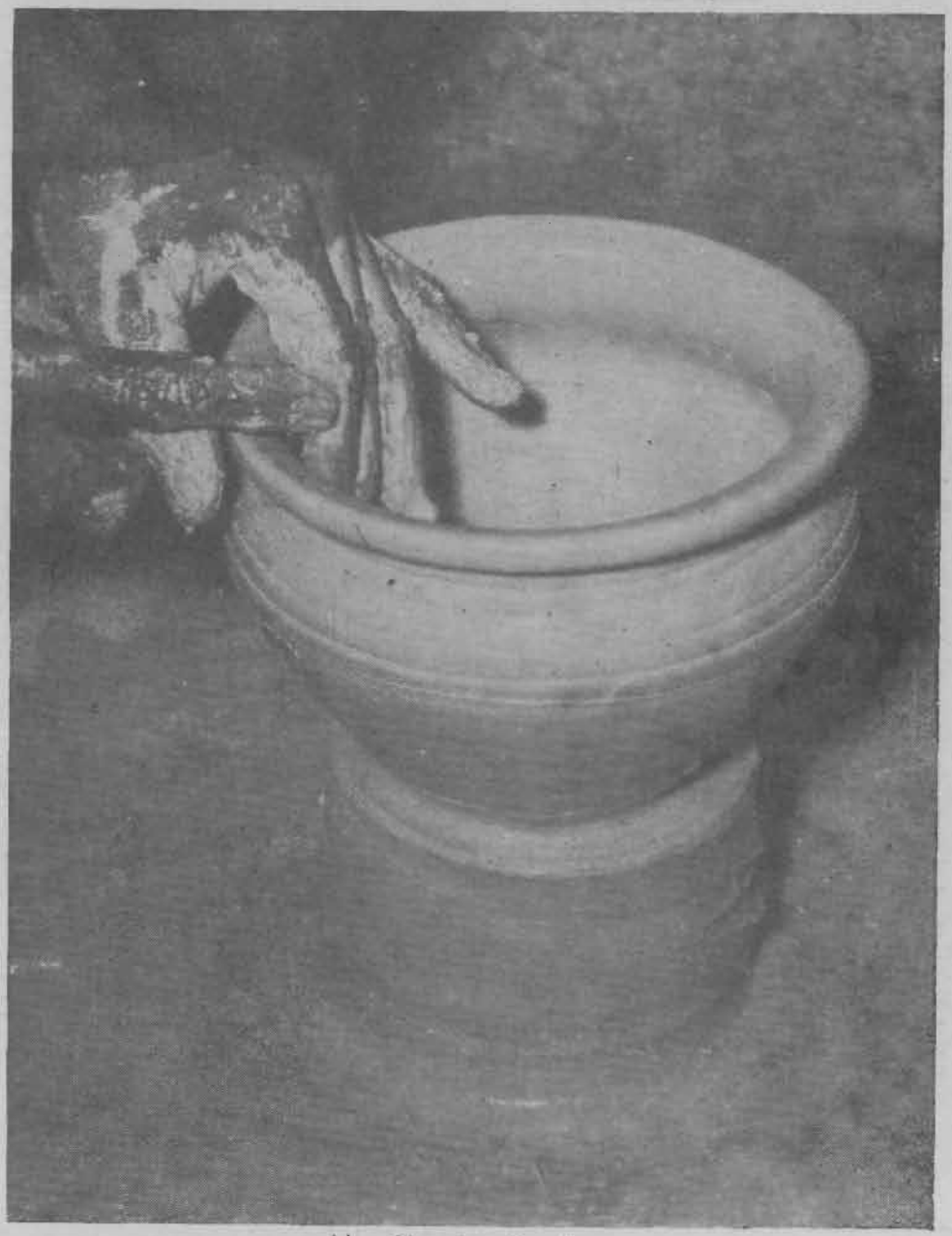
8. Improved type of wheel designed by the Khadi and Village Industries Commission. The wheel is provided with ball bearing



9. Pounding of clay—a preliminary operation



10. Scraping of kneaded clay for removal pebbles



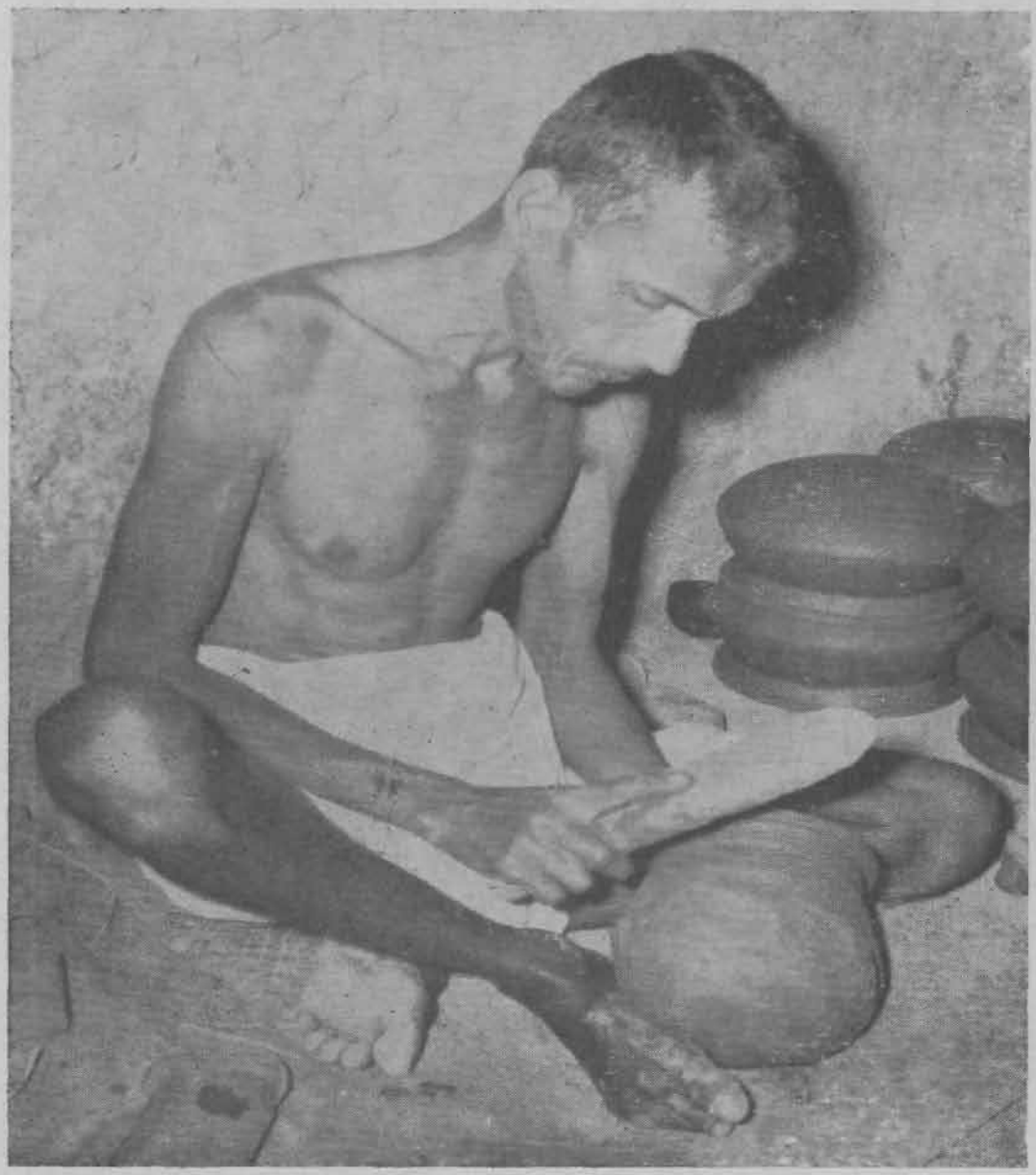
11. Shaping the lip



12. Claywares still in a crude state—being dried in the sun



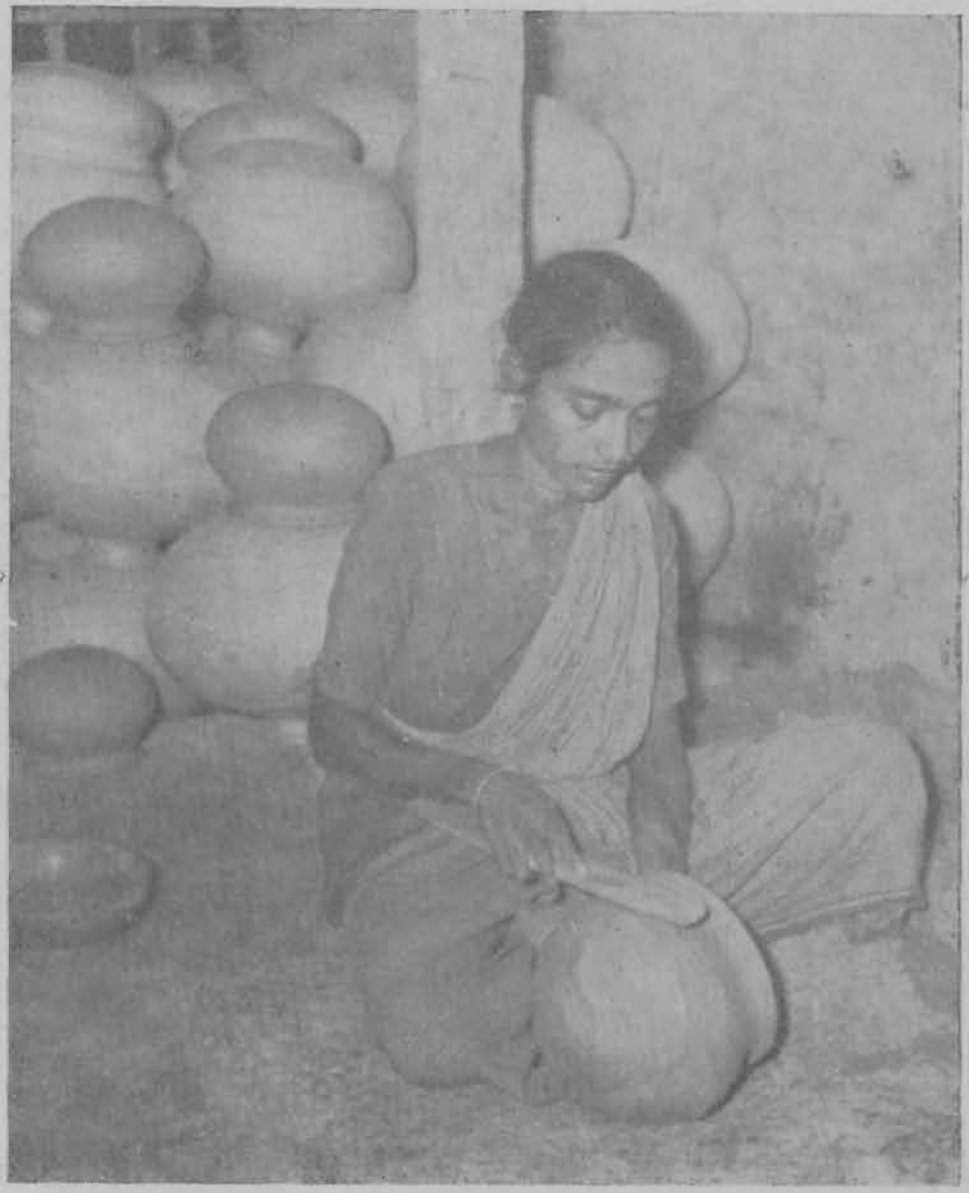
13. Stone and flat mallet employed for shaping thrown articles



14. Beating or drubbing



15. In Khanapur 'Bhing' is smeared on the ware to give an attractive lustre



16. Women also drub the clay wares to shar



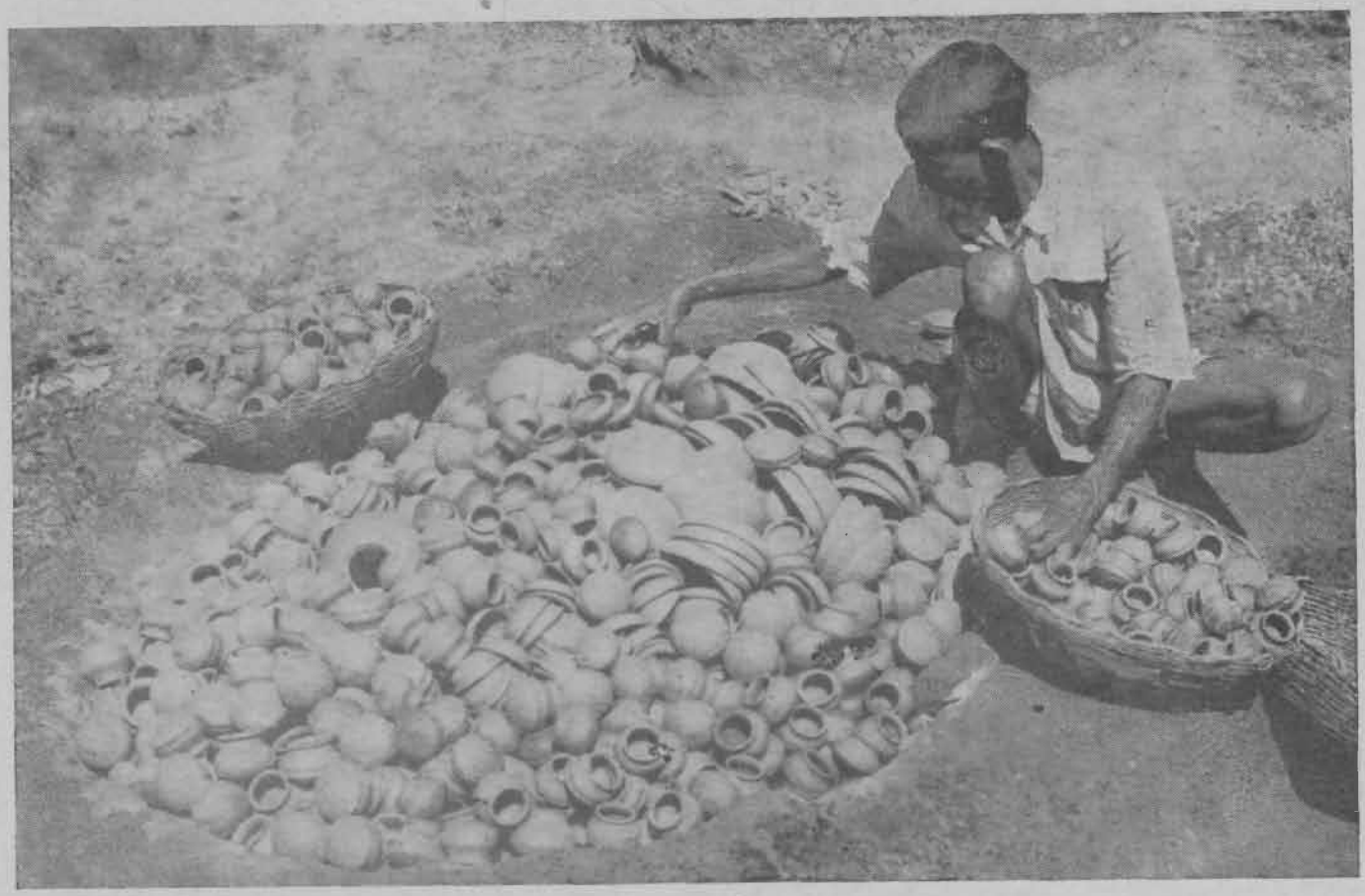
17. Loading of vessels in a kiln



18. After loading, straw is spread over the vessels



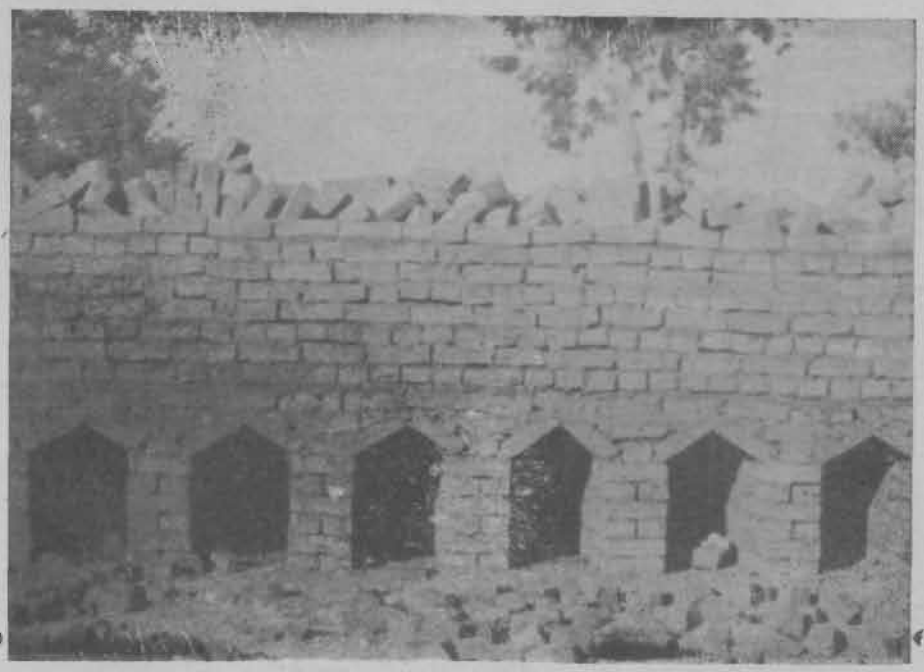
19. Garden pots loading for firing in the kiln. Shards will be used to cover the articles



20. In Kudikebevoor tiny articles are loaded in a crucible type kiln for firing



21. Kiln—Covered with shards



22. A half completed kiln for baking bricks



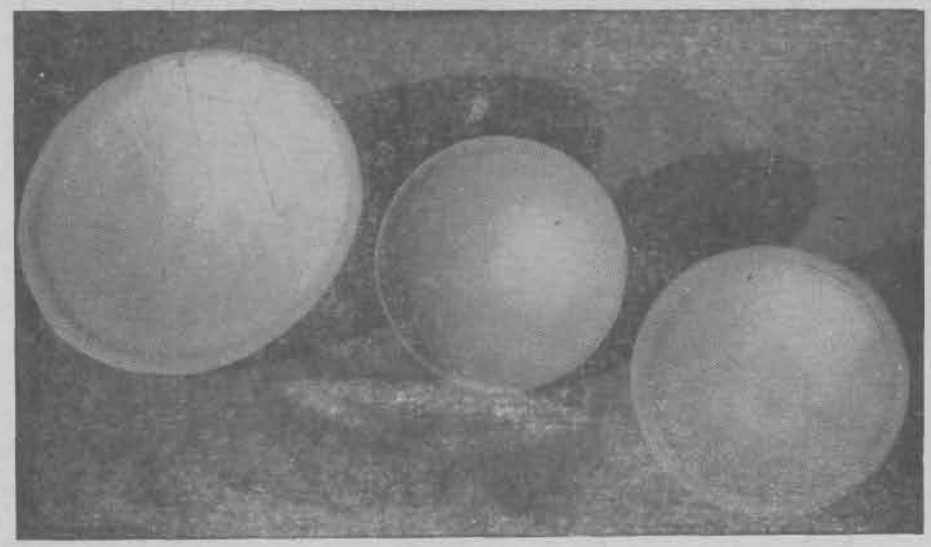
23. A large cauldron of clay



24. Pots—with narrow and wide mouths



25. Clay vessels of Khanapur



26. Clay lids



27. Pots of Kudikebevoo



28. Garden pots of Ramanagaram



29. Water coolers



30. Improved garden pots



31. Making of stoneware by Jigger jolley method at Vanitha Sahakar Kamgar Sangh, Khanapur



32. Finishing a jar

34. Finishing a sanitary ware

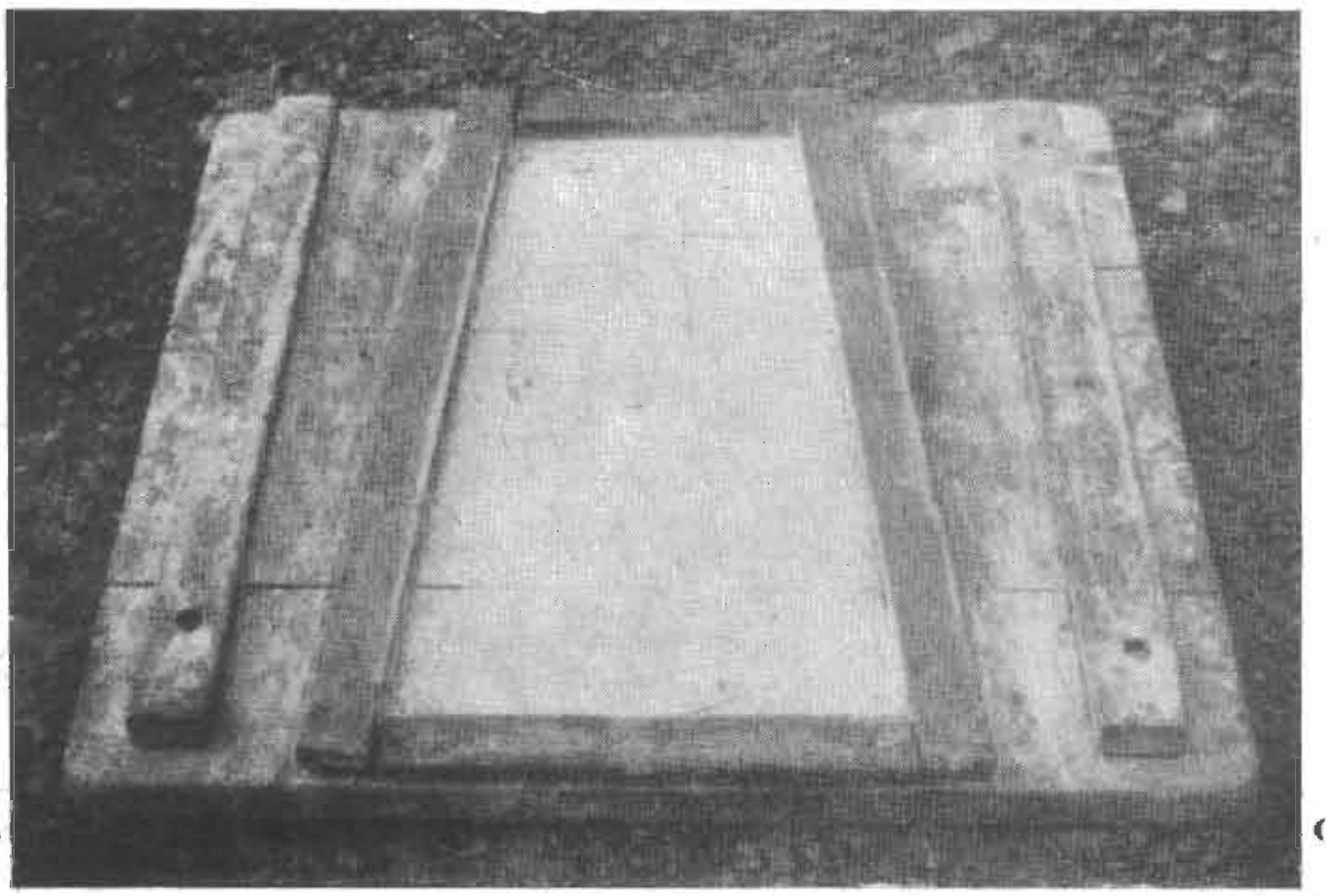
33. Glazing of clay cups



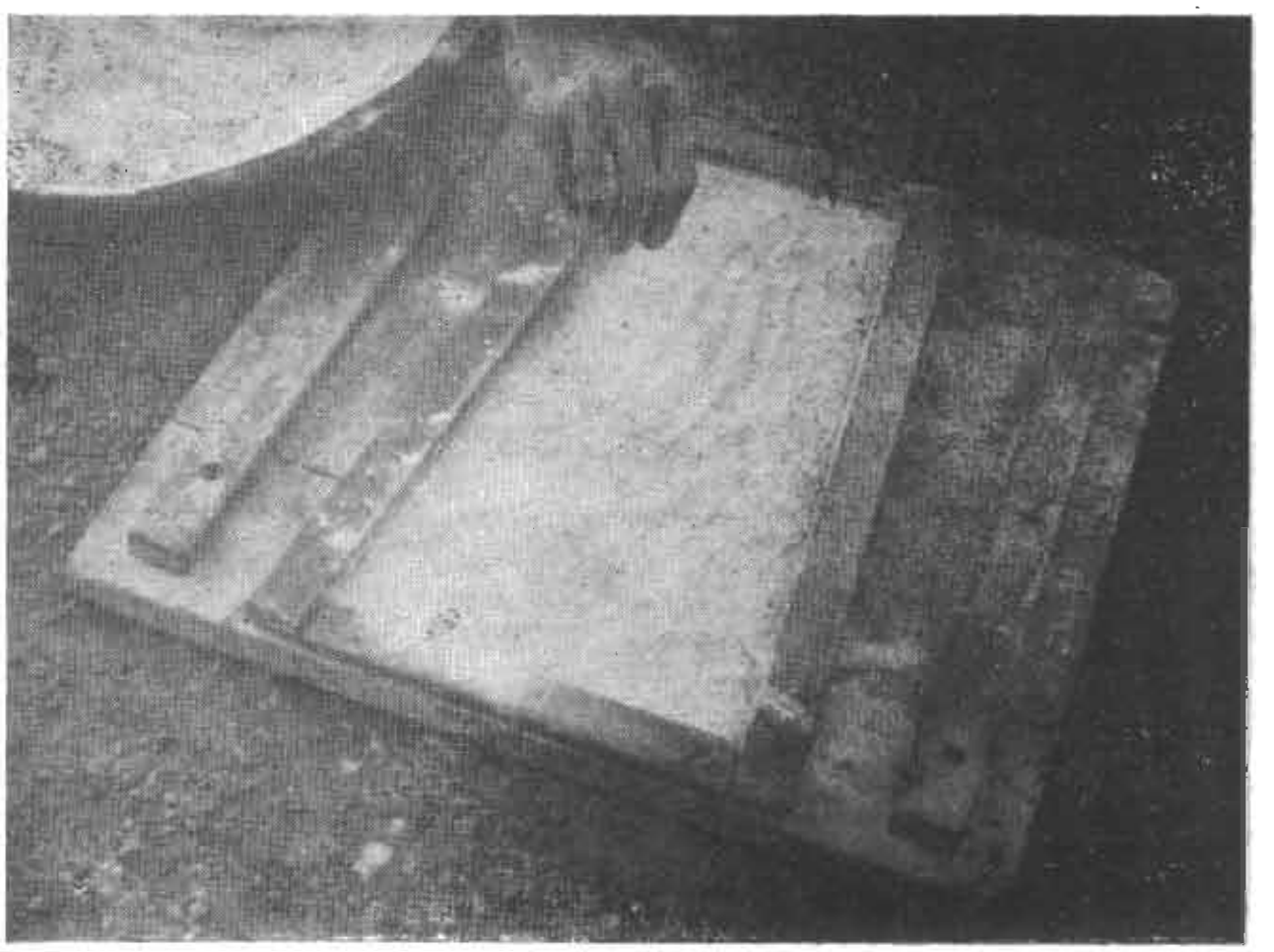
35. Carrying claywares to shandy



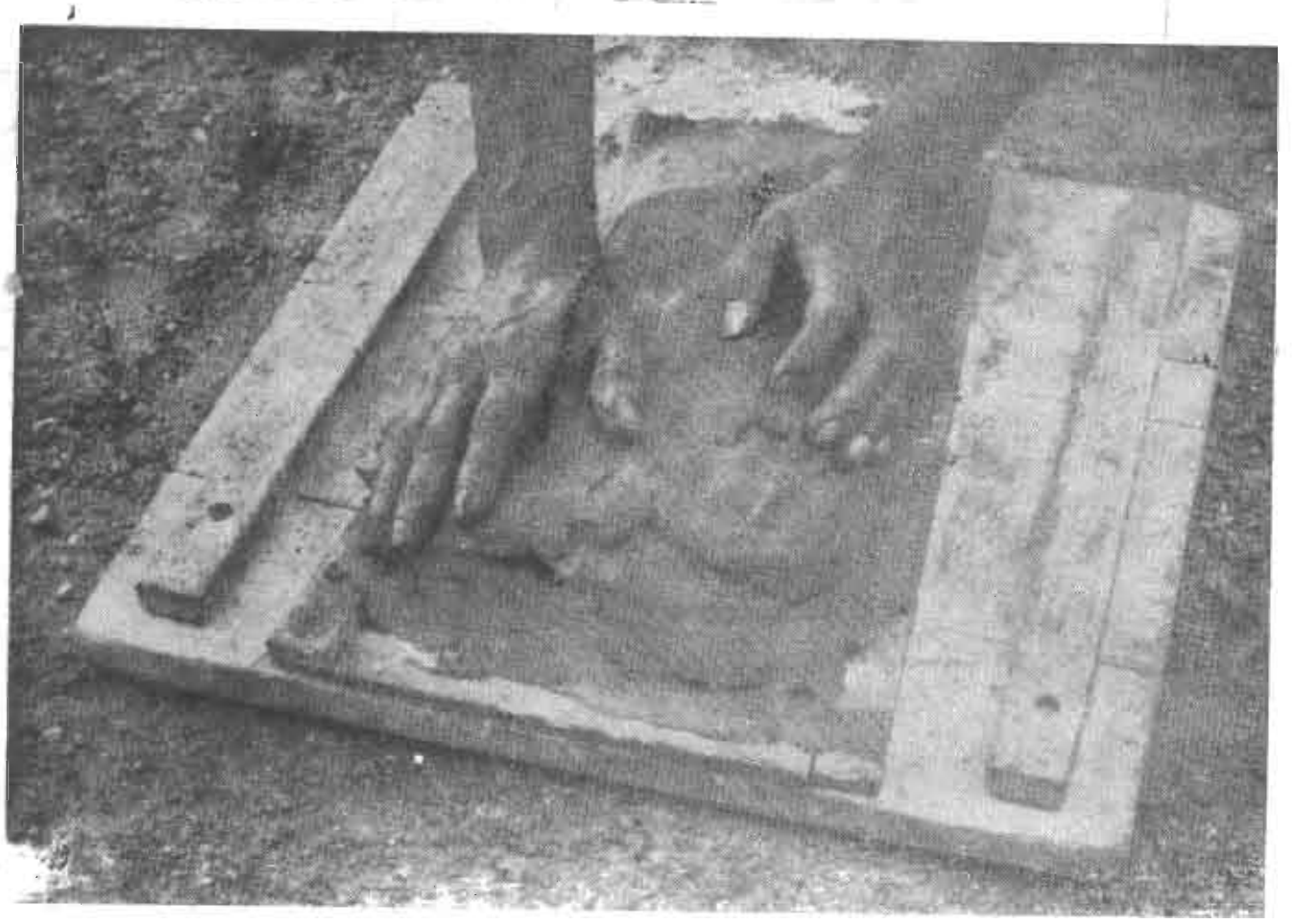
36. Women attend to dispose of the clay vessels in the shandy



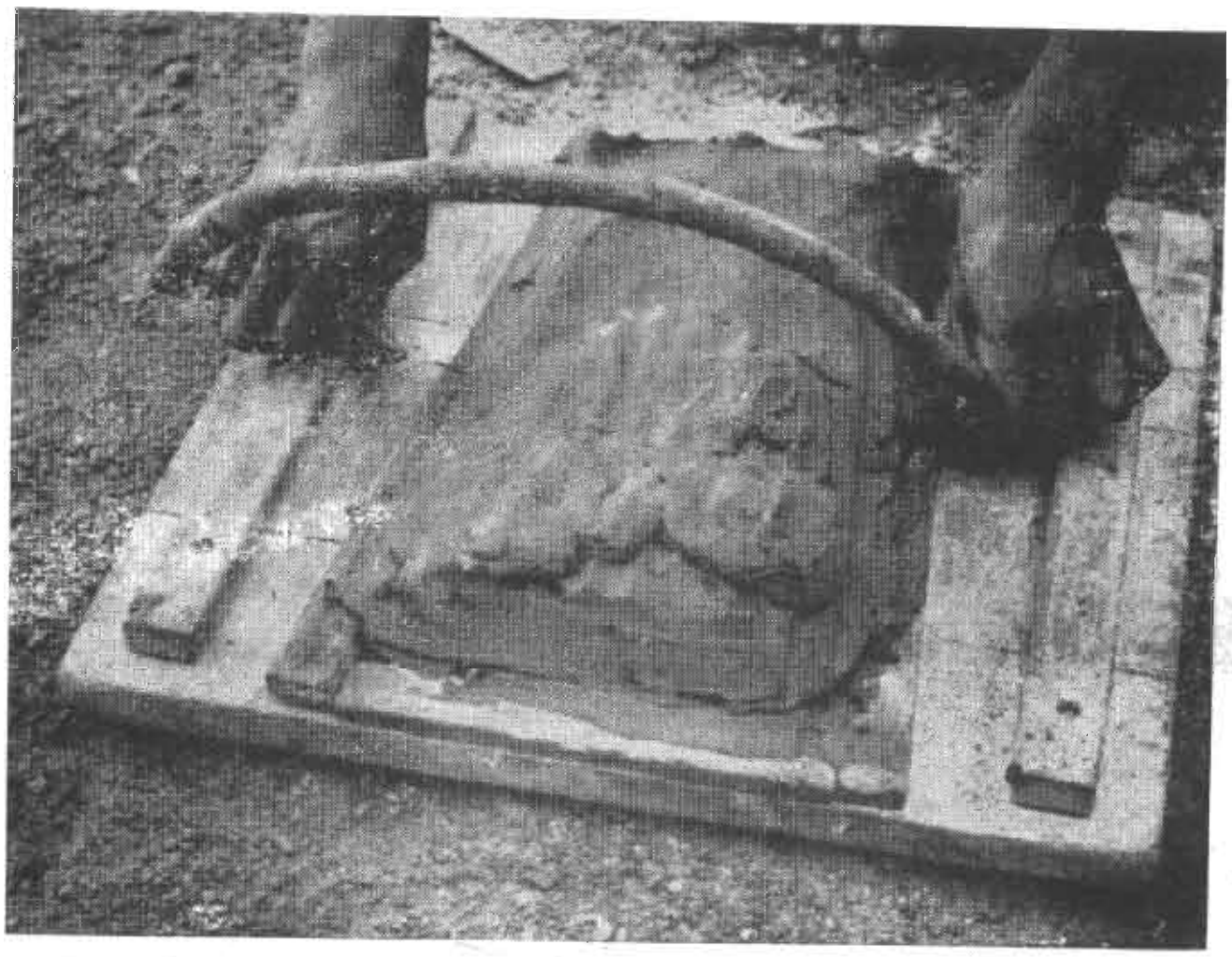
37. Wooden mould used in the making of garden pots



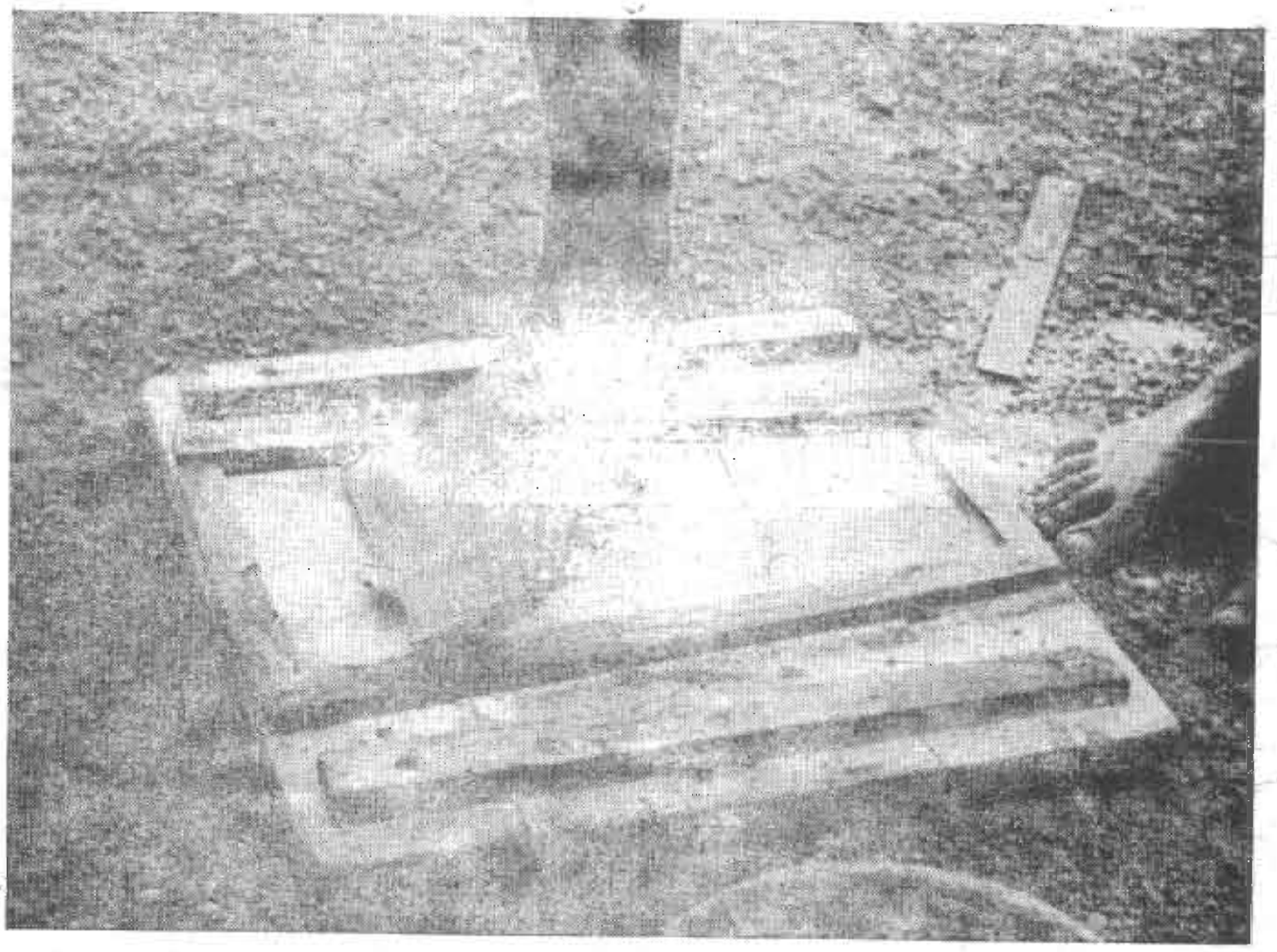
37. (a) The surface of the mould is dusted with ash



37. (b) Pressing the clay into the mould



37. (c) The excess clay is cut off with a wire



38. The moulder removes the clay slab from the mould



38. (a) Clay slabs are placed in the wooden mould and the edges are joined with slip



38. (b) The mould is unlocked



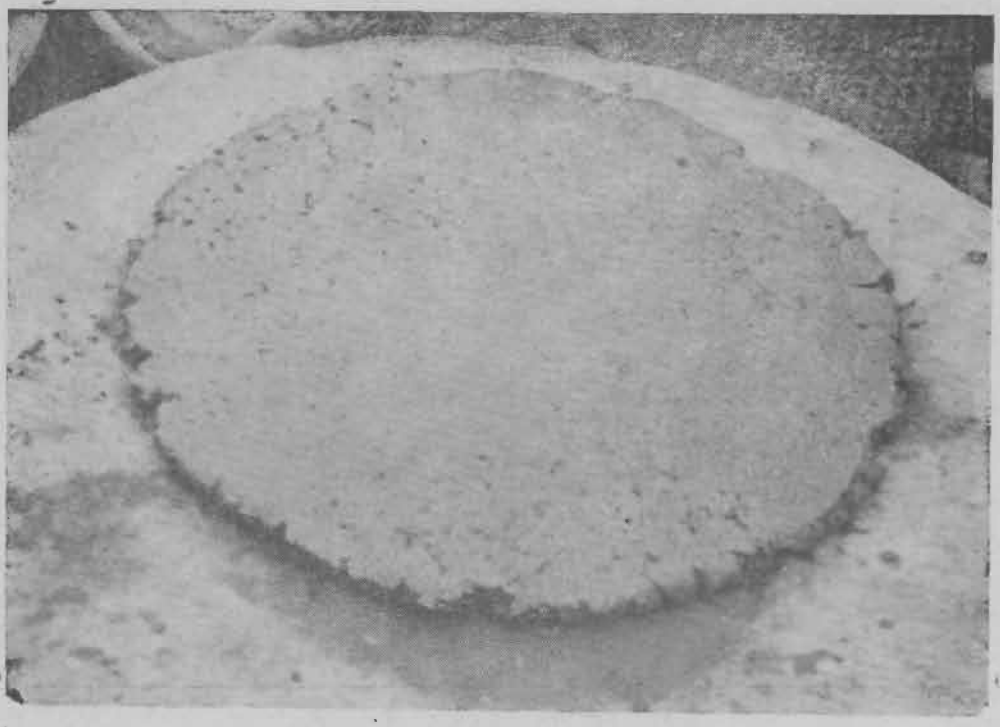
38. (c) A finished product



39. Making of bowl without a wheel—a little quantity of clay is placed on a stone disc.



40. The mass is drubbed with a stud shaped stone to a circular mass



41. Drubbed clay mass



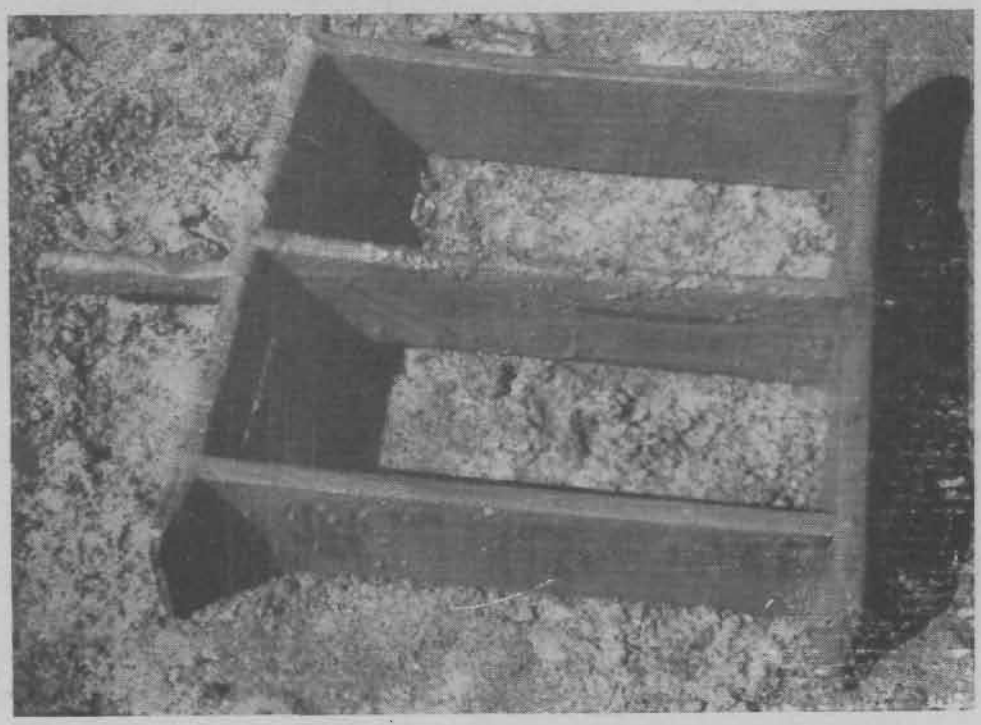
42. Finishing it into a bowl



43. A brick maker at work



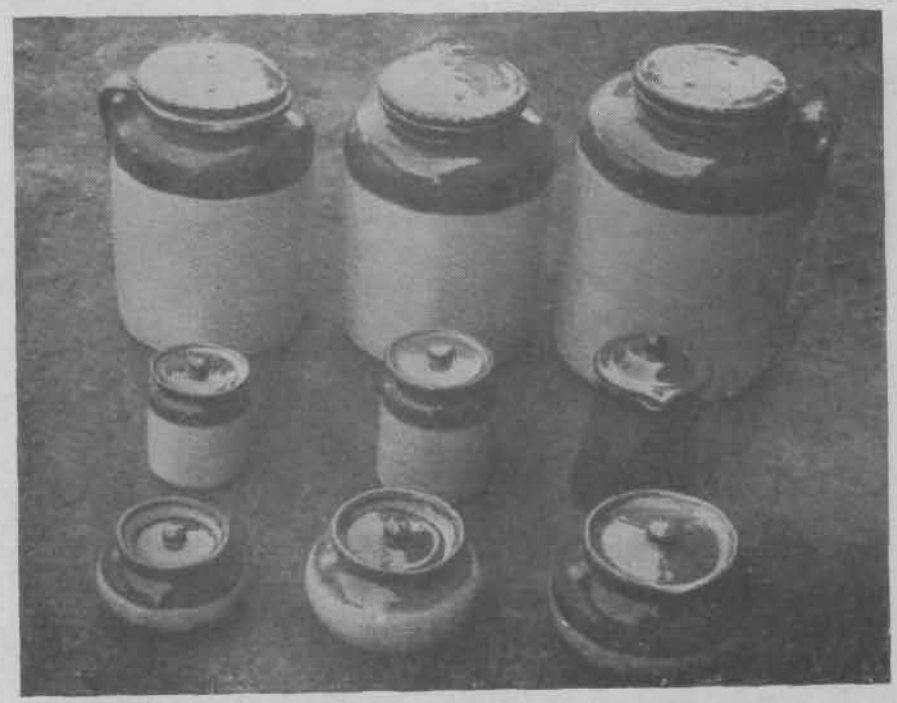
44. Making of flooring tiles



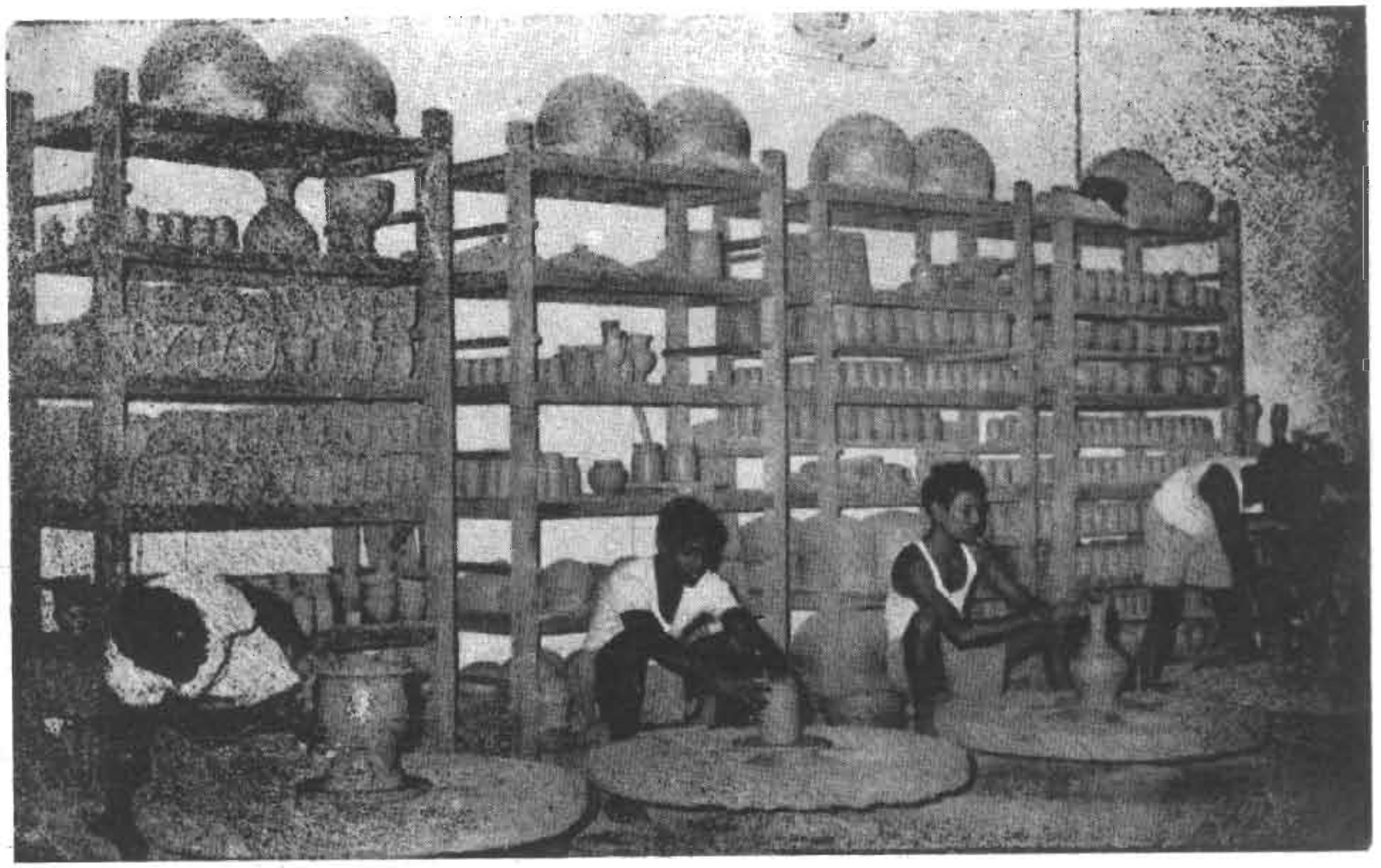
45. Wooden mould for making bricks



46. Pressing of clay into the mould for making bricks. At a time two bricks can be made in a mould



47. Stonewares made in the Vanitha Sahakar Kamgar Sangh, Khanapur



48. Trainees at work—operating ball bearing wheels

CARPETS
OF
NAVALGUND

CHAPTER I

INTRODUCTORY

Introduction

The manufacture of carpets is an ancient industry in India. This industry is not confined to any particular region but is widely dispersed, each region specialising in its own variety. Regarding the introduction of carpets into India, Sir George Birdwood says, "The manufacture of pile carpets was probably first introduced into India by the Saracens". Sri Shanti Swarup writes, "It was once believed that India learnt carpet-weaving from Persia. But the methods and designs of the carpet weavers in our country are so peculiarly indigenous and so distinctly recognisable from those of other countries that this theory has now been abandoned."[1]

Regarding the South Indian Carpets Mr. F. H. Andrews in his article on 'Indian Carpets and Rugs' has mentioned, "Southern Indian Carpets and Rugs appear to suffer from want of feeling. The designs are seldom, or never, indigenous, and what is borrowed is not understood.....These craftsmen of the south may use the finest material and put into their work the most minute care, yet the fail to move us. There is something about the most insignificant saddle bag woven in the north that tell of the daily of the maker. It seems to be part of him and his family. He bought the wool, or grew it, or otherwise acquired it; his womenfolk spun it and perhaps dyed it, or he exchanged the good offices of some village dyer for some commodity bought along on his travels. Each time camp was struck this little treasure of yarn was folded up in his bed, and as regularly when camp was pitched, it was unrolled, the simple loom was set up and he has added some more stitches to the work. Piece by piece ie grew, and as it developed, his delight in it increased; and when it became big enough, it joined the family circle..The pattern was not much thought about perhaps. A richly coloured mihrab arching over a deep blue expanse.....The Wanderer's life and imperfactly understood thoughts playing as a feeble light in his mind from far distant past, seem to be woven into the little piece of work for those to read who can."*

In Mysore, carpets are made of cotton as well as wool. The Bangalore carpets are known for their durability, attractive design and workmanship. The Central Jail at Bangalore and the Central Jail at Gulbarga are reputed or the production of quality carpets. In Mysore woollen pile carpets are known as *Ratnakambli*. They have a warp of strong cotton and the piles of coloured wool are knitted into each warp thread.

Cotton carpets, popularly known os Jamkhana are made of cotton fibres. They are used as bed mats and for being spread on floors for squatting. These pieces are washable and are also durable.

In the Mysore Gazetteer, Sri C. Hayavadana Rao states, "Bangalore carpets are well known for the peculiarity of having the same pattern on both sides. The number of men generally engaged in this industry varies with the demand for carpets, and the number of looms now in use for making carpets may come up to a hundred. From a commercial stand point the industry is not a big one. The total value of carpets manufactured every year by cottage owners does not exceed Rs. 2,00,000. Owing to the fact, however, that the woollen mills have each a department for the manufacture of carpets, the output is at present likely to be increased on a large scale. For making low grade carpets, aniline colours are used and the vegetable dyes are used for better quality. There is not much demand in the local market for plush or pile carpets, though the plain carpets find a ready sale locally. In foreign countries, as England, the United States of America, Australia, etc., there is a steady demand for high grade Bangalore carpets. The Central Jail at Bangalore has had a reputation for many years for production of carpets of good weave and attractive soft colouring. They are made in many excellent old patterns. About 70 convicts are now employed at carpet making. There are 16 looms of different sizes varying in width from 21 to 29½ feet. The wool used in the jail is of local origin and is supplied by a contractor. Vegetable dyes are mostly used. The sizes in great demand are 6 feet by 3 feet and 7 feet by 4 feet. Some of the good designs usually demanded are 'Sirdar' 'Peacock', 'Hashamkhani', etc."**

The carpets of Navalgund, called *Jamkhan* locally, are produced out of low quality fabric. These are used as floor coverings.

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1 :—Arts and Crafts of India and Pakistan by Sri Shantiswarup page 83

* F. H. Andrews. "Indian Carpets and Rugs" in the Journal of Indian Art and Industry Volume XI. Published in 1905-06

** Sri C. HayavaadanRao, Mysore Gazetteer, Volume III (Economic) 1929-pages 244-245.

A well finished Navalgund carpet appears like a woollen carpet, though the cotton yarn employed for its production is not of high quality. The Navalgund carpets are long-lasting and the colours never fade. Further, the designs are the same on both sides of the carpet. The type of loom used by the carpet makers provides scope for producing carpet of any dimension and naturally they are priced rather high.

Centres of Production

The important centres of production in the State are Bangalore, Bijapur and Navalgund and among these the present study is confined to Navalgund. This is a municipal town and a taluk headquarters town in the Dharwar District. It is situated about 28 miles to the North-East of Dharwar, the district headquarters town which can easily be reached by bus. It is situated at 15°33′ north latitude and 75°25′ east longitude. The town is connected by buses to many important centres like Hubli, Gadag, Bagalkot, Bijapur and others. Annigeri which is about 12 miles distant is the nearest railway station on the Hubli-Gadag line. The town is served by electricity since 1958. At the time of conducting this study that is November, 1966 arrangements were under way for supply of filtered water from *Neelavvana kere*, a tank in the town through public taps. The work of laying mains was under progress. The area of the town is 0.30 Square Miles and its population according to 1961 Census is 10,123. There is a bazaar in the town with many retail shops. A weekly market is also held every Tuesday and a cattle market of limited size the same week day. The town relatively to its size and importance affords adequate educational facilities, there being four primary schools and also a high school. There is a general hospital, a veterinary hospital and also an improvised cinema house to cater to the needs of the local people.

A history of the town has been given at the end of this monograph.

Apart from carpet making, the other handicrafts extant in the town are gudar weaving, handloom weaving on a limited scale, blanket weaving by a few households of Kurubas and Pottery making by Kumbars.

Gudar

Gudar is a piece of cotton fabric extensively used by the rural folk in Dharwar and Belgaum districts. The fabric is produced by simple weave and the raw materials used being cotton yarn of 6 counts—3 plys for the warp and 4 plys for the weft. On the loom the fabric is produced to the size of 10 inches in width and 18 feet in length. After weaving, 12 such pieces are stitched together to form Gudar of the size 18 feet by 10 feet, using twisted yarn i 6 plys and a needle made of an umbrella rib. Gudar is used as a floor-spread and for packing jowar cobs and similar materials for transportation from field to rick-yard. Depending upon the size, the cost of a gudar varies from Rs. 80 to Rs. 120. Gudar is produced for purposes of utility and it is not given an artistic finish as in the case of carpets.

The Craftsmen

The carpet makers in Navalgund are Muslims (Musalmans) belonging to the sect of Shaikhs. They speak Urdu at home though all are well conversant with Kannada. The male members have *Jamkhan* as their surnames which signifies their being producers of *Jamkhan* (carpets). They dress just like Hindus with a dothi in *Kacha* style and put on shirt, coat and a turban when they have to visit public places. The women of these households too are clad in Hindu style and wear sarees and blouses.

There are 8 households of these craftsmen at Navalgund and they carry on the craft as a hereditary occupation. All the households of the craftsmen are located in one street of the town called *Jamkhan oni* (carpet lane).

Establishments

According to this survey, there are 8 establishments engaged in producing carpets in Navalgund. All the establishments are proprietary concerns run by individual households. Only household labour is utilised in the production processes and hired labourers are seldom entertained for fear of the trade secret becoming known to them.

CHAPTER II

TECHNIQUES OF PRODUCTION AND CARPETS PRODUCED

Raw Materials

The main raw material used in the craft of carpet making is cotton yarn, and the only other material is synthetic colour powders.

Yarn

The yarn used at this centre is mill made and of a coarse variety. Gokak Mill produces the yarn and the craftsmen buy it from the merchants of Hubli. For the warp, twisted yarn of 3 plys and 6 counts is used and for the weft, strands of 10 counts are used. The twisted as well as untwisted yarns are sold in bundles locally called *moote*. Each bundle weighs 4.54 kgs. made up of 20 *ladis* (skeins).

The cost of twisted yarn is Rs. 24.25 per bundle and untwisted yarn Rs. 21.75.

Colour Powders

Synthetic colour powders are available in one of the local shops and carpet makers buy them in small quantities as they cannot afford bulk purchases without orders on hand. Red, yellow, green and black are the colours used. The retail price of the colour powders per tola, in the town is as hereunder :—

		Rs.
Red	..	0.37
Yellow	..	0.50
Green	..	0.75
Black	..	0.50

Tools

Among the tools used the carpet loom is of prime importance, the other tools being *Rate, Lakkuni, Panja* and a knife.

Carpet loom

This is a rugged vertical loom installed within the house of the craftsmen. It consists of two upright posts and two heavy wooden rollers both made of *mathi* or teak wood. The rollers lie horizontally between the posts, the lower one in a trench and the upper one about 6 feet above the lower roller. The trench is of varying lengths ranging from 8 feet to 22 feet. It is of uniform width and depth, both being 18 inches. The two ends of the roller are shaped flat to a length of about 6 inches on which holes are made to permit of inserting a crowbar and turn the roller.

The looms in use in all the establishments are decades old and the construction of a new loom is estimated to cost Rs. 100.

Rate

This is a draw wheel employed in the preparation of weft. Six skeins of untwisted yarn are mounted on the *rate* and from each skein strands are simultaneously drawn and wound into balls of 6 plys.

Lakkuni

This is a small wooden piece resembling a peg. Using its narrow end the weft is pushed down to the fell of the carpet.

Panja

It is a forked comb made of iron, with a serrated edge. While the *Lakkuni* serves the purpose of pushing down each weft, *panja* is employed to beat down a sending of wefts to the fell of the carpet. *Lakkuni* is operated on each weft but the *Panja* after interlacing a few wefts through the warp.

Techniques of Production

The production process consists of six distinct stages as set out below :—

1. Preparation of warp.
2. Preparation of weft.
3. Mounting of warp on the loom.
4. *Beja kattuvudu* (arrangement for shedding)
5. Weaving.
6. Removing of carpet from the loom.

Preparation of warp

The carpet makers get twisted yarn and are able straight away to prepare the warp, thus being spared the labour of having themselves to twist the strands also.

To begin with, three iron pegs are fixed upright in the ground. The two farthest pegs are placed 35 feet apart. The usual practice is to have warp of sufficient length to weave five carpets per mount in order to minimise the superfluous ends required at the warp ends for winding on the rollers. The third peg is struck between the two outer ones, but quite close to the second one and about a foot outside the line formed between the two outer pegs.

The readymade skein is taken in hand by the warp layer and one end of the yarn tied to the first peg. Then the yarn is wound round the pegs each alternate yarn going round the third peg. This operation is continued till the predetermined number of warp threads are run round the pegs, the breadth of the carpet determining this number. Two bamboo splits of length about 5 feet are inserted in place of the two end pegs and the yarns are slipped on to these bamboo splits in an arranged order. The crossing of the yarn is preserved by inserting two lease rods of bamboo alternately at the cross and the ends of these lease rods are connected with each other with twine so as to prevent their slipping out of the warp. The preparation of warp is thus complete and it is made ready for mount on the loom.

2. *Preparation of Weft*

The yarn for the weft is untwisted and its preparation consists merely of forming a 6 ply. Six skeins of the untwisted yarn are mounted on the *rate* (also called *Khandike suttuva rate*). From each of the six skeins strand is drawn simultaneously to form a 6 ply which is wound into balls.

Preparation of weft includes dyeing of yarn also. The desired synthetic colour powder is added to boiling water under constant stirring. A little quantity of common salt is also added. Then the container is removed from the oven and skeins are immersed in the colour. The yarn, after absorption of colour is taken out and sun dried.

Dyed yarn alone is used for weft. It is only when white designs are required a little length of uncoloured yarn is used for weft.

3. *Mounting of Warp on the Loom*

The warp prepared as explained in stage 1, is rolled up and brought to the loom. One of the split bamboos carrying the warp is tied to the lower beam securely by means of a twine. The other end of the warp which also carries a bamboo split is tied to the upper roller and the warp is rolled on the upper roller. The warp is stretched tight between the rollers, and to provide necessary tension to the warp that is to be woven, the tension rod of the loom is also tightened.

4. *Beja kattuvudu (preparation for Shedding)*

This process involves an arrangement by which the front and the back yarns of the warp can be crossed to form the shed. The loom is provided neither with regular heads nor reed. Each of the front yarn and the back yarn is tied with a loop fastened to two different split bamboos called *bejakolu*. In order to have uniform loops a *bejamane* (a strip of wood) is used. The length of each *bejakolu* is slightly more than the width of the warp on the loom. Both the *bejakolu* are fastened by means of a twine to another bamboo piece called *Kaman*. The *kaman* is held in tension by another bamboo fixed between two posts at a height of about 3 feet from ground level. The upward and downward movement of the *kaman* pulls one set of yarn (either back or front) while the other set is relaxed. The arrangement to form the shed being thus made, the loom is ready for weaving.

5. *Weaving*

By passing the weft between the picks by hand, a little length is woven in the same way as in plain weaving. A carpet of 30 inches width is normally worked upon by two persons at a time, one working on the one vertical half of the loom and the other on the other vertical half. They weave so systematically that the entire width of the carpet gives the appearance of having been worked by a single person. Each worker will have balls of different coloured yarns. The weft is threaded through the warp, section by section by hand, and each time the weft is pushed down to the fell of the carpet with *Lakkunki*, and after threading the warp with a few wefts they are beaten down to the fell of the carpet with *panja*. This process is continued till the whole length of the carpet is completed. As the work proceeds, the woven portion of the carpet is rolled on the bottom roller, which operation automatically brings down the warp for weavnig from the upper roller.

6. *Removing the carpet from the loom*

Weaving of one carpet being over, unwoven warp of about 4 inches is left followed by 2 inches of plain weaving for the subsequent carpet. The carpet which is ready is taken out of the loom by cutting the warp breadthwise at the middle of the unwoven warp. The fringe of the warp is left loose without hemming.

Carpets Produced

The craftsmen of Navalgund produce carpets of several sizes, the common one being 7 feet by 3½ feet. The largest carpet made by the craftsmen is of the size 40 ft. by 20 ft. This carpet was made about 80 years ago, and it is in possession of a well-to-do family of the town. Carpets of 18 inches square for squatting and Namaz carpets of size 3 ft. by 2 ft. are also made.

Both the sides of the carpet will have the same design. The designs employed in the making of these carpets are mostly geometrical patterns and floral motifs. Peacock seems a special favourite. The borders have a band of triangles in a single series or a continuous chevrons. They also consist of croix pattee, lozenges and rosettes of simple coils. However, the carpet makers are capable of producing carpets of any design and size as desired by their customers.

CHAPTER III

ECONOMIC AND GENERAL ASPECTS

Cost of Production

The working cost of a carpet of size 7 feet by 3½ feet as furnished by the local craftsmen is detailed below :

Cost of Raw Materials

		Rs.	Rs.
Yarn for warp	..	2.44	..
Yarn for weft	..	10.87	..
Colour powders	..	1.69	15.00

To weave this carpet 2 persons have to work for 5 days and the selling price of this carpet is Rs. 35.

Of the total cost of production, raw materials account for 42 per cent and labour, which is always household, 58 per cent. The workers get the labour charges of Rs. 2 a day provided the piece fetches Rs. 35.

When a carpet is made, the craftsman pledges it with local money lender for a loan, which is repaid with interest after finding a sale for the carpet. According to carpet makers, a portion of even the little profits they make goes towards interest. This trade is practised solely with household labour and outside labour is never employed. Hence the question of the carpet makers undergoing a loss does not arise at all. However, their margin of profit or to be more precise their earnings by way of wages depend on the sale of their products. If they can dispose of the carpet without pledging it for a loan, they are able to earn a wage of Rs. 2 a day which is slightly higher than other types of labourers earn in the locality.

Capital

The carpet makers pursue their hereditary craft in their household premises and there is no separate investment on buildings for running the trade. The looms in their possession are inherited and no establishment has acquired it in recent years. The total capital on looms in possession of the 8 establishments comes to about Rs. 800. As regards the investment on raw materials, it was ascertained to be about Rs. 500 during the period of this study.

Production

The value of carpets produced by the carpet makers of Navalgund during 1965 was about Rs. 12,000. They have utilised raw materials worth Rs. 5,040 over this period.

Marketing

The carpets made at Navalgund are sold directly to the consumers. The customers are local agriculturists and persons in other avocations residing in the vicinity. Normally they buy these carpets for marriage occasions. The producers are neither in a position to dispose of the carpets as soon as they are made nor in a position to stock carpets till they are sold out. Hence they pledge the carpets and obtain a loan.

Households of Carpet Makers

Household I

Head of household.—Abdulhashim Imamsab Jamkhan.

This household consists of 10 members—4 males, 3 females and 3 children below 14 years of age. Out of the 7 adults, the head, his wife, one of his sons and a son's wife are in the trade. A son is a cleaner in a lorry transport concern and another is blind and cannot take up any job. Another female attends exclusively to domestic duties.

The average monthly income of the household is about Rs. 120.

Household II

Head of household.—Nabisab Imamsab Jamkhan.

There are 9 members in this household with 3 males, 3 females and 3 children. One male member and 2 female members are carpet makers. The remaining 2 males are cycle shop assistants. One lady attends exclusively to domestic duties.

The household's average monthly income is about Rs. 130.

Household III

Head of household.—Maktumsab Aminsab Jamkhan.

There are 5 members in this household—one male, one female and 3 children. The male member (the head of the household) is a cycle shop owner and occasionally works on the loom. The female member is a carpet maker.

On the average the household earns about Rs. 100 per month.

Household IV

Head of household.—Jandisab Rajesab Jamkhan.

This is a 12 member household with 3 males, 4 females and 5 children. Of the 3 male members one (the head of the household) is a carpet maker. One of the sons of the head is a tailor and the other is a carpenter. Of the 4 females one (the wife of the head of the household) is a carpet maker and 3 females are not gainfully employed.

The average monthly income of this household from all sources is about Rs. 220.

Household V

Head of household.—Mohidin Kamal Sab Jamkhan.

This household consists of 6 members comprising of one male (the head of the household) 3 females and 2 children. The male member is a carpenter and the 3 females are carpet makers.

Average monthly income of this household is about Rs. 130.

Household VI

Head of household.—Davalsab Khadirsab Patwegar.

This is a 10 member household. Of them, 4 are males, 2 are females and 4 are children. The head, his eldest son and 2 females are engaged in carpet making. Of the remaining two males, one is a shop assistant and the other is a carpenter.

The household members earn an average monthly income of Rs. 120.

Household VII

Head of household.—Mahboobsab Davalsab Jamkhan.

This household consists of 7 members—3 males, 1 female and 3 children. Only the lady (wife of the head) makes carpets. The 3 adults occasionally work on the loom. The head and one of his sons are painters and another son is a shop assistant.

Average monthly income of the household is Rs. 120.

Household VIII

Head of household.—Hussainsab Muktumsab Patwegar.

Out of the 4 members in this household, one is male, 2 are females and one is a baby. The two female members are carpet makers and the head of the household runs a cycle shop.

The household's average monthly income is Rs. 115.

Economic Conditions

The craftsmen are pursuing the trade only with household labour and no hired labour is employed.

Out of the 8 households of carpet makers, 7 are in the income group Rs. 100—150 a month and one household has monthly income of more than Rs. 150 a month. All these households are staying in their own inherited houses. The 8 houses are old constructions with mud walls and flat mud terrace.

They have their carpet looms in a part of the living room. As the looms are of vertical type only a 16 sq. ft. area is occupied by each loom, except in case of one which has occupied a floor area of 40 sq.ft.

Carpet making is the principal means of livelihood for 3 households and a subsidiary occupation for five. They take two meals a day which consist of jowar rotti with a side dish. The male members are habituated to take tea in hotels.

Co-operative Society

"The Navalgund Jamkhana Mattu Gudara Thayarisuvavara Sahakari Utpadaka Sangha" (meaning The Navalgund Carpet and Gudar Producers' Co-operative Society) was established at Navalgund on 28th July, 1948. The Society has for its object the providing of aid to persons engaged in the production of carpets, *Gudars* and saris.

The membership is 78 of whom 3 are sympathisers. The value of each share is Rs. 5. The paid-up share capital is Rs. 2,192.

Out of the 75 members in the Co-operative Society 15 are carpet makers, 44 are *Gudar* makers and 16 are weavers.

The Society has received financial aid from several organisations.

During the years 1959-60 to 1961-62, the Handicrafts Board, Bangalore sanctioned a loan of Rs. 14,900 of which Rs. 400 was towards share capital and Rs. 14,500 towards working capital. A grant of Rs. 3,700 was also made for meeting the Managerial expenses. Out of this loan of Rs. 14,500 a sum of Rs. 1,300 has been repaid.

The Co-operative Society has received another loan of Rs. 15,600 for the installation of power looms and no part of this has been repaid by the Society so far. Further, the 4 power looms in possession of the Society were not put to use at the time this study was conducted.

The District Industrial Co-operative Bank Ltd., Hubli has advanced a loan of Rs. 3,000 out of which the Society has paid back Rs. 1,213.

The Society supplied raw materials to carpet makers on credit basis on an assurance from the craftsmen that they would supply the finished products to the society for marketing. They marketed the carpets through the Society only in the beginning but did not stick to their assurance later. Since 1962, this Co-operative Society has not been actively functioning and there are quite a good number of defaulters.

CHAPTER IV

CONCLUSION

According to the information contained in the Bombay Gazetteer, there were 8 households of carpet makers at Navalgund during the last century. The present study also revealed that only 8 households are pursuing the trade. There has been no increase in the number of households pursuing carpet making, over this long period of a century. Local enquiries revealed that persons who moved out of the original households on account of partition did not continue their hereditary occupation. No new entrant could also take up this trade due to the expressed reluctance of the hereditary craftsmen to train freshers.

The male members of these households are taking up other avocations such as carpentry, tailoring, painting and the running of a cycle shop, while youngsters prefer working as assistants in one or the other trade. This attitude indicates waning interest in their hereditary craft, owing perhaps to the difficulty encountered in disposing of the products for a reasonable return. The heads of three households aged over 50 years are, however pursuing the craft it being too late, perhaps, for them to think of an alternative. They are, however, not enthusiastic towards training their children in this trade. The female members who work on the loom are without scope for being employed in other types of jobs.

Carpets produced about a century ago in this centre are in possession of a few households in the town. They are even to-day good and preserve their charming colour which speaks to their excellence of quality. Yet the craftsmen are hard put to it to market their product on account of the limited number of buyers. With the available labour power each household can produce on an average one carpet per week. If freshers are not encouraged to take up this craft, the output cannot be increased.

Incidentally it may be mentioned here, that *gudar* making which was introduced in this centre about 30 years ago by a person of Hebsur (a neighbouring village of Navalgund but in Dharwar taluk) attracted many entrepreneurs and there are to-day as many as 30 households of *gudar* producers and 63 households who work on *gudar* making for wages. In all 212 persons, both males and females, are engaged in this industry. Besides persons from all the castes in the town including Chaluvadis are to be found in this industry. The raw materials used in *gudar* making are the same as those used in carpet making.

According to carpet makers the advantage of *gudar* is its easy saleability on account of its better utilitarian value while it involves lesser skill in its making than carpet. It is perhaps this feeling coupled with their reluctance to train new persons that has exerted a baneful effect on this industry.

Aid by way of supplying raw materials oncredit basis made available through co-operative was not properly utilised by the craftsmen.

The authorities of Janatha Shikshana Samithi of Dharwar have started a production unit of Navalgund carpets at Dharwar to help promotion of this languishing industry and the success of its endeavour is yet to be watched.

A study of the situation surrounding this craft has revealed that it is already in quite a bad shape, and if further deterioration is to be arrested, a bold and comprehensive scheme will have to be evolved for attracting new entrants and also make the product remunerative. Adequate facilities should also be created to interested career seekers in the line for a full development of talent. If there is no centralised action for its rejuvenation betimes the craft is bound to be condemned to a listless and lingering existence.

APPENDIX—1

HISTORY OF NAVALGUND

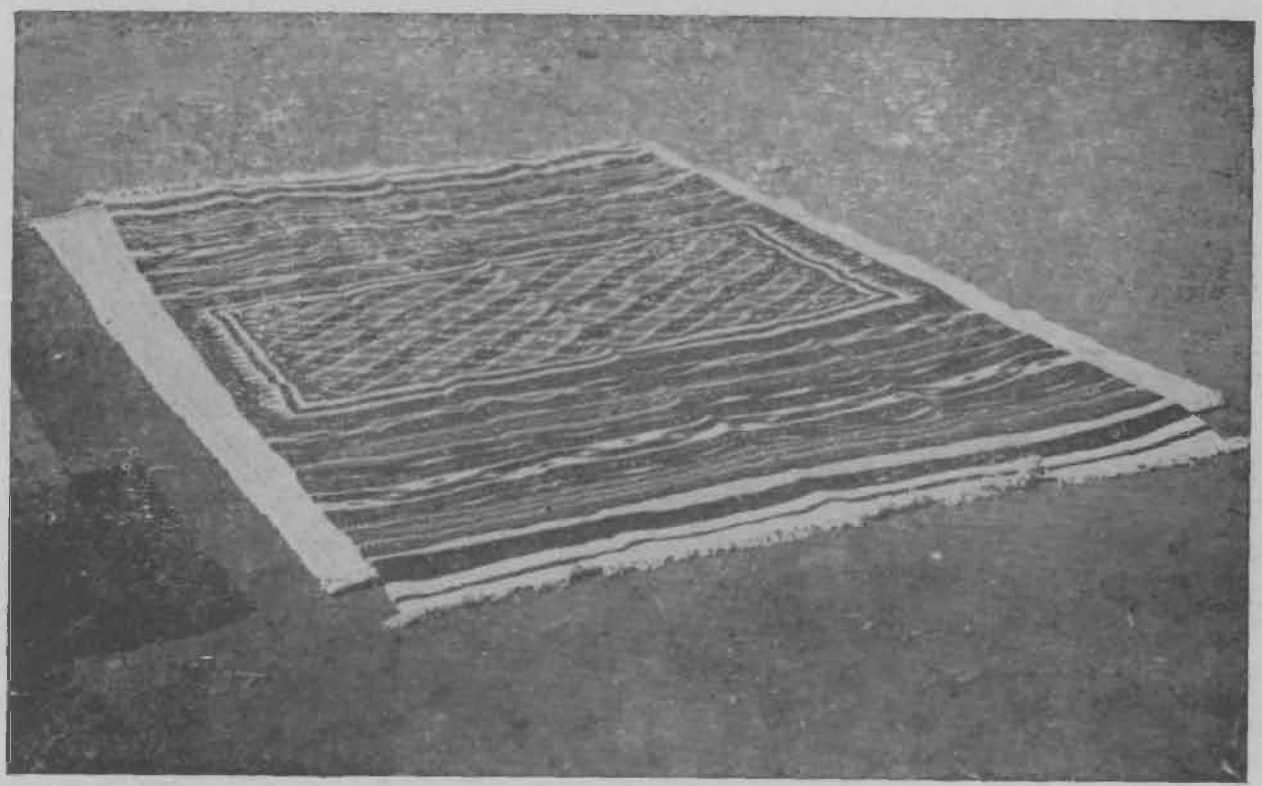
No remains of old temples or inscriptions have been found at Navalgund and it appears to be a new town. Its earliest mention is in 1454 as the headquarters of a *Sarkar* or province governed under the Bahmani king Ala-ud-din II (1435-1457) by his brother-in-law Jalalkhan. In the same year Jalalkhan and his son Sikandar Sah hearing a false report that the king had died, seized on several districts round Navalgund. The king promised a free pardon to the rebels if they submitted. Instead of submitting Jalalkhan called for aid to the Malwa king telling him that Ala-ud-din was dead and that the ministers were dividing the kingdom. The Malwa king crossed Khandesh and came to the Deccan in 1457, but learning that he had been deceived retreated leaving secret orders to capture Sikandar and bring him to Mandu. Sikandar retreated to Navalgund and on the promise of a free pardon gave up Navalgund fort. In the distribution of governorships and commands which followed the death of Ala-ud-din II and the succession of his son Humayun Zelim (1457), Sikandar Shah suffered a disappointment and joining his father at Navalgund began to raise troops. He defeated the force sent against him. Then the king advanced in person, and offered to pardon the rebel father and son if they submitted. As they refused to submit, Humayun ordered an attack. The insurgents fought with the greatest bravery. After a long indecisive action the king who was pressing forward in the centre mounted on an elephant was attacked by Sikandar. The king's life was saved by his elephant which seized Sikandar in his trunk, and threw him from his horse. Sikandar was killed and his followers fled. Next day the siege of Navalgund was begun; and at the end of a week having no hope of relief, Jalalkhan submitted. His life was spared but he remained a prisoner for the rest of his days. About 1690 under Aurangzeb's governor of Savanur Navalgund was the headquarters of a revenue division managed by a hereditary Lingayat officer called the Desai of Navalgund. In 1747 the Savanur Nawab was obliged to agree to a treaty ceding to the Peshwa the whole of the present subdivision of Navalgund along with other parts of the Dharwar District[2]. In 1778 when Haidar Ali became master of the country south of the Krishna, Navalgund was left to its chief on condition that he acknowledged Haidar's supremacy and paid him tribute.[3] I n a Maratha revenue statement of about 1790 Naval gund appears in the Torgal District or *Sarkar* as t he head of *pargana* with a revenue of £7542 (Rs. 75,420).[4] Between 1795 and 1800 in the struggles w hich convulsed the Maratha State Dhondho P ant Gokhla took Navalgund and Gadag from their h ereditary Desai.[5] In November 1817 General Mu ndo appointed one Ramray as the military officer or *amildar* of Navalgund. After his appointment Ramrav quickly took possession of more than half th e district, and on the 19th of December advanced fr om near Navalgund with 500 men to attack Gok hla's son who as in Navalgund with seven hundr ed horses. About 600 of the horses were picquetted i n the streets and in the open space between the to vn and the fort. The rest were mounted and watchi ng Ramrav who advanced at noon so rapidly that he entered the town before the horsemem could mount and leave. Struck with panic the Maratha horse fle d without offering any resistance. Nineteen horses were taken alive and twenty were found dead, on hea ring of his son"s defeat Gokhla came from Badami to j oin him with 550 horse and 200 foot and after gatheri ng the fugitives reached Navalgund on the 22nd of D December. Ramrav retired into the fort, and on the 2 23rd, with ammunition nearly exhausted, he was har dpressed by Gokhla. On hearing that Gokhla had reached Navalgund, General Munro marched fror n Dharwar with two flank companies one of the battal ion guns and a five and half inch mortar under the co mmand of Major Newall. Within two miles of N avalgund small parties of horse were seen; and about a mile further the main body was discov ered moving slowly along side of a rising grc ound at a distance of about a thousand yards. As the enemy seemed to intend to attack Gene ral Munro's baggage, two shells were thrown and t wo horsemen were killed. At this whole body moved off attended by about two hundred foot and were so on out of sight leaving about ten dead in the streets . After the blockade of Navalgund was raised Gener al Munro and Major Newall returned to Dharwar.[6] The Desai family of Navalgund enjoy some inam lands. In 1838 on the death of the grandfather of the present chief adoption was allowed on condition that the chief abolished all duties on tra de, and assimilated his administration to the system prevailing in the neighbouring Government villages .

1. Briggs' Ferishta, II. 447—456.
2. Stokes' Belgaum, 44, 48; West's History, 21.
3. Stokes' Belgaum, 55; West's History, 22.
4. Waring's Marathas, 243/5 Stokes' Belgaum 63.
6. Gleig's Munro, I. 480—82.

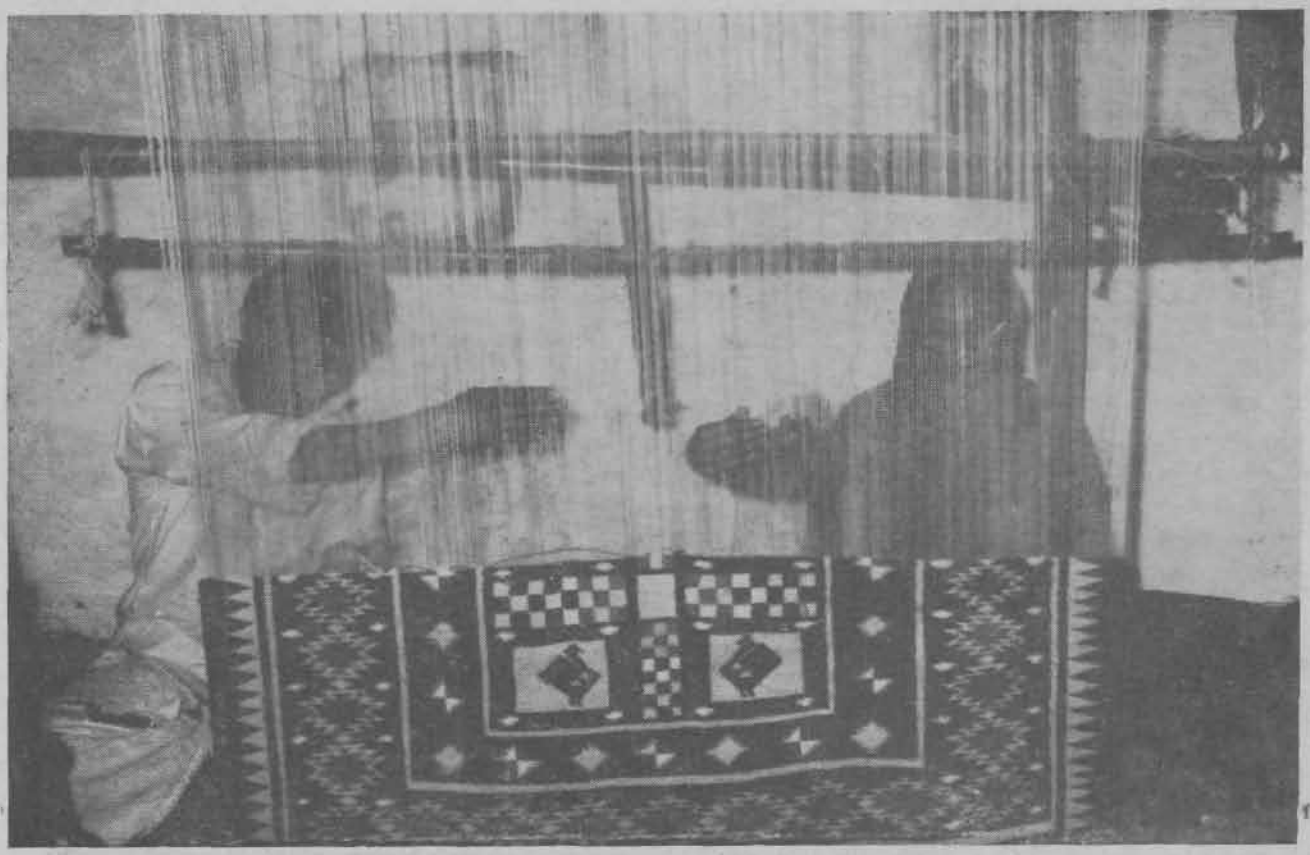
Source.— Bombay Gazetteer, Volume XXII, Dharwar (1884), pages 781–782.



1. A carpet on display



2. A fully spread carpet



3. A carpet in the making : notice the designs in the border and the peafowls in the body



4. A carpet of another popular design



5. A "*Namaj Carpet*" highly cherished by Muslims

SILK WEAVING OF KOLLEGAL

CHAPTER I

INTRODUCTORY

Introduction

Cloth weaving is an ancient and most important industry in India. This handicraft is the monopoly of members of a particular group of occupational caste recognised by distinct names in different regions of the country. The craft ranks next to agriculture in the order of importance, as this is the source of sustenance for millions of craftsmen as their principal occupation.

The Indian weavers produce cloth for daily wear, and also fancy cloth to cater to the tastes of the members of the affluent classes. These traditionally skilled craftsmen have attained perfection in their trade. The beauty of the hand-woven fabrics have been acclaimed for their excellence of design, texture and durability. Man does derive the benefits of mass produced goods to satisfy his needs, but his inner aesthetic urges make for something entirely different which would answer his individual fancies of design, colour and harmony which only the adroit fingers of a master craftsman can produce. Thus amidst the monotonous plenty of machine-made products, handicrafts stand out in pleasing contrast with a warm, human and personalised feeling to the user. Small wonder that hand painted and printed fabrics will not fail to evoke appreciative response of the connoisseur. Hand-woven textiles of India, cotton as well as silk, have been in great demand within and also outside the country.

In Mysore, weaving is essentially a household industry. In a few centres, particularly at Bangalore and Doddaballapur (a town and taluk headquarters of the same name in Bangalore District), handlooms, to a great extent, are supplanted by power looms. However, credit should be attributed to the weavers who have struggled hard and also struggling hard to keep their trade alive, even after receiving a set back on account of the advent of pewerlooms in the industry and facing severe competition from mill goods. Efforts are being made by several organisations and particularly by the All-India Handloom Board to place the craft on a sound footing by affording facilities to the craftsmen.

While cotton weaving is found in many centres scattered throughout the State, silk weaving is confined to a few centres. The City of Bangalore leads the other centres in the production of silk fabrics, where they are produced on handlooms and also on powerlooms. In Kollegal, silk fabrics are produced on handlooms by hereditary weavers.

The Centre of study

Kollegal, headquarters of the taluk of the same name in Mysore District is a Town Panchayat having an area of 9.5 square miles and a population of 22,663 as per 1961 Census. The town is connected by bus and the nearest railway station is Maddur on Mysore—Bangalore line. However, the people of Kollegal avail of the railway facilities from Mysore on account of its convenience and almost equidistance as that of Maddur. The town is situated at a distance of 40 miles towards South-East of Mysore, and district headquarters. Prior to the reorganisation of States in 1956, the town was in Madras State and belonging to Coimbatore District.

As this place possesses characteristics akin to Mysore and a majority of persons of the town and the neighbouring areas are Kannada speaking, there was for a long number of years a desire on the part of the people of this area to join the State of Mysore and this aspiration seems to have been fulfilled as the consequence of the reorganisation of States on linguistic basis.

According to a legend current among the people of this place, the site of this town was the place where, long ages ago, the great sages Kohala and Galava performed penance and the present name of the town Kollegal, it seems, has been derived from the names of these sages Kohala-Galava.

River Cauvery runs at a distance of about 2 miles from this town and the noted Cauvery falls—*Gagana chukki* and *Bhara chukki*—are about 10 miles away, and the Hydro-electric station at Sivasamudram is 9 miles from Kollegal. The town is the meeting place of traders of Mysore and Madras States, as it is an important commercial centre.

The town affords educational, welfare and recreational facilities. It has a College, 3 High Schools and good number of lower grade schools. The town is electrified since 1945 and water supply to the town is through private and public wells. At the time of this study during August, 1967 a scheme for supply of tap water was under execution. There are two cinema houses in this town.

The chief industry of Kollegal is weaving. Pure silk, art-silk and cotton fabrics are produced on traditional pit looms by Devangas, the community of weavers who form a sizeable portion of the population.

Sericulture is a major household industry in the villages round about Kollegal and the cocoons are marketed by auction at Kollegal to licensed reelers. There are many silk reelers and throwsters at Kollegal. There is also a Government Silk Filature. The silk fabrics of Kollegal are as famous as those of Bangalore. For want of authentic data it has not been possible to trace the origin of silk industry at Kollegal.

Devanga

Devanga is one of the occupational castes of weavers and forms a division of the *Neyiges*. Neyige is a general appellation applied to both silk and cotton handloom weavers in the State and this broad group consists of Devanga, Bilimagga, Sale, Katri, Patvegar, Sourashtra, Seniga and Togata. Members of these castes neither inter-dine nor inter-marry. Further, persons belonging to the caste of Bilimagga call themselves *Kuruvina setty* or *Kuruvina Banajiga* and they speak Kannada. *Sales* are divided into *Padmasale*, *Pattusale* (pattu-silk) and *Sankusale*. The *Padmasales* speak Telugu while Pattusale and Sankusale speak Kannada.

The Devangas of Mysore are divided into four endogamous groups: Shivachara Devanga, Kannada Devanga, Telugu Devanga and Hatagararu. The Shivachara Devangas appear to be converts to Veershaivisim from among the other Devangas. The Kannada and Telugu Devangas who, to begin with, happened to be wide language divisions, hardened later into separate endogamous groups.

In Kollegal, the Devangas are mostly Telugu Devangas and Kannada Devangas are only a meagre fraction. Devangas have exogamous divisions or clans.

Among Devangas marriage alliance has to be contracted between members of the same group who belong to different clan. Consanguineous marriages are common. A member may marry his elder sister's daughter. Cross cousin marriages are also prevalent but marriage between cousins who belong to identical siblings is taboo.

The male members wear sacred thread. Brahmins used to officiate as their priests but are now replaced by men of their own caste. Widow remarriage is permitted among them though by local usage this has come to be viewed with disfavour in Kollegal. They lay claim to strict vegetarianism. They follow the usual law of inheritance from patrilineal side. They worship Shiva and also Vishnu with no distinction. Chowdeshwari is their tutelary deity. They bury their dead.

Devangas as a whole have weaving as their occupation. They also follow agriculture. The weavers are generally poor.

About the conditions of the weavers in Mysore, C. Hayavadana Rao writes: "At present, the weaver is illiterate, ignorant and hopelessly conservative. He does not devise new patterns and even if they are brought to his notice he does not readily adopt them. Some important changes have, however, come over the condition of the handloom weaver. (Mysore Gazetteer, Vol. III Page 240).

In the following table* information regarding the persons engaged in silk industry is furnished:—

Description	*Household Industry*			*Non-Household Industry*		
	Persons	*Males*	*Females*	*Persons*	*Males*	*Females*
1. Spinning and weaving of silk textile in Mill.	..	..	..	5,760	4,860	900
2. Spinning of silk	4,538	2,897	1,641	2,092	1,553	539
3. Weaving of silk textile by Handloom.	6,311	3,528	2,783	1,541	1,357	184

* Census of India 1961—Volume XI—Mysore. General Economic Tables—B IV, Part C, Part II B(i).

Establishments

There are 79 establishments engaged in producing silk fabrics at Kollegal. Seventy-seven of the units are proprietary concerns run by households of traditional craftsmen. Of the remaining two units, one is attached to the Government Silk Filatures and the other to the Silk Weaving Centre of Khadi Gramodyoga Kendra. These two institutional units are having 16 and 7 looms respectively in them. Work in the proprietary establishments is carried on purely by household labour and the looms are installed in the household premises.

Sericulture in Mysore

Sericulture is the art of rearing of silkworms under artificial conditions, their feeding, and formation of cocoons. These worms feed on mulberry leaves and are voracious eaters. A report** mentions that Tipu Sultan introduced sericulture industry in Mysore by the end of 18th Century. In the course of less than 200 years, Mysore has secured a foremost place in mulberry cultivation and silk production. During this brief period the industry suffered two severe setbacks—the first was during 1886 and the second during 1914-15 when a strange and deadly disease made its appearance and proved calamitous to the worm resulting in a markedly diminished yield of silk. Government therefore thought fit to establish a separate department in 1914-15 so that continued attention could be paid to the problems facing this industry and its development secured on proper and scientific lines. With the transfer of Kollegal taluk from Coimbatore district (Madras State) to Mysore in consequence of States Reorganisation effected in 1956, Mysore became the biggest silk producing State in India, contributing a little more than three fourths to the total output of the country. The industry is concentrated mostly in the rural areas in the districts of Bangalore, Mysore, Mandya, Kolar and Tumkur. Agriculturists in these districts engage themselves in silk worm breeding as a side occupation and dispose of cocoons to reelers.

Mulberry is raised as bush in rainfed and irrigated lands. About 76,000 hectares of land are under mulberry cultivation in this State. In the rainfed area the annual yield of mulberry leaf is about 1,800 Kgs. per acre while in the irrigated area it is 3,600 Kgs.

Mysore cocoons are greenish yellow in colour. Till 1922, th practive was to rear pure Mysore silk worm and the production was about 1,200 cocoons per gram of seed. The length of bave ranged between 250 to 300 metres. This race lost its potentiality and at present it is used as a female component to cross with Japanese male. Such hybrid races are reared throughout the year and they yield five to six crops annually—the rearing period ranging from 30 to 35 days. This hybrid race is superior to Mysore worm. In that it has a high percentage of neatness, higher silk content, better reelability and a shorter larval period.

At present a silk rearing station has been established at Biligiri Ranga Hills in Yelandur Taluk of Mysore District, for preservation of stock races and their improvement. There are six basic seed farms—three for foreign races and three for local multivoltine races. There are 40 grainages and more than 600 licenesed seed preparers for production of industrial seed. Including the 4 for demonstration centres, there are in all 7 *Chawki* rearing centres.

Raw silk reeling is done in Mysore by traditional *Charkas*, cottage basins and also by modern filatures.

The filature industry came into being in Mysore in 1920 and, to begin with, it had 12 basin Frency type filatures. In 1937 this was made a joint stock company under the banner "Mysore Silk Filatures." During the period of Second World War the filature reeling industry assumed great importance and the number of filature basins were greatly increased. After the war, the organisation is encountering difficulties to run the industry on profitable basis and efforts at modernising production to make the rates competitive are afoot.

The raw silk produced in this State is marketed through *Kothi* merchants of Bangalore. There is also a Silk Marketing Co-operative Society in Bangalore since 1957, and cocoon marketing units in several centres. The silk waste is utilised by "Mysore Government Spun Silk Mills" in Channapatna (This mill was a joint-stock company till 1958 under the name "Mysore Spun Silk Mills, Ltd., Channapatna".). There was also a Sericultural Training School at Channapatna which is now shifted to Mysore City.

**H. Maxwal Lefro, Vol. 1 Page 28 'The Silk Industry'

CHAPTER II

TECHNIQUES OF PRODUCTION AND FABRICS PRODUCED

Raw materials

Raw silk is the chief raw material used in this industry. The other necessary materials are *Jari* (lace) and dyes for colouring the yarn.

Raw Silk

Raw silk is the yarn reeled from cocoons. It is an animal fibre like wool. These two animal fibres differ from each other in chemical as well as physical properties.

Raw Silk is a two stage production—the first being the cocoon raising (which include mulberry cultivation side by side) and the second, raw silk reeling.

The cocoon filament is produced as a fluid in the salivary glands of mulberry silkworm *Bombyx mori*. The life cycle of Bombyx mori takes about six weeks to complete from egg back to egg. Each cycle has a four stage passing. The first is from egg to larva, the second from larva to pupa, the third from pupa to silk moth and fourth the silk moth laying eggs again to start the life cycle afresh.

The female silk moth lays about 400 tiny eggs called seeds. After about 10 days ant-like worms of about one eighth of an inch hatch out of eggs. During the metamorphic process which lasts for 20 to 26 days the caterpillar consumes mulberry, moults four times each time sloughing off its own skin. When it reaches its maximum growth, it ceases to eat, its weight diminishes and its colour becomes creamy white. These ripe worms are picked up and mounted on *Chandrike*. The worms on Chandrika from a pair of glands running the length of their body, emit through the spinneret a viscous solution which emerges out as silk filament. The worm spins the cocoon around itself and a fully ripe worm normally completes the work in about 24 hours. Then the cocoons are harvested by separating the good from flossy cocoons. In order to prevent the moths emerging out and spoiling the cocoons they are subjected to dry heat and the moths inside the cocoon are killed. The cocoons are soaked in boiling water in reeling basins and the threads from about 10 cocoons are reeled into a joint thread.

Production of raw silk in Mysore for the year 1965 is as follows :—

	Production (Kgs.)
1. Charaka ..	9,40,000
2. Cottage basin ..	1,79,000
3. Filature ..	1,04,000
4. Dupion ..	22,000
Total for the State ..	12,45,000
Production in other States during 1965 ..	3,88,602
Total ..	16,33,602

More than 75 per cent of the Mulberry silk is produced in Mysore, and Kollegal too is an important raw silk producing centre.

Raw silk is reeled in hanks from cocoons and this silk is not sufficiently strong to be used on the loom. It has to be twisted before it is passed on to the loom. The process of twisting is normally not attended to by the weavers of Kollegal as they get ready warps from throwsters of the town. There are as many as 15 silk twisting units under private sector and one unit attached to the Government Silk Filatures in the town.

Ready warps (Huri)

Raw silk is coiled on a bobbin from hanks in order to form a yarn package convenient to handle. At this stage of transfering the raw silk on to the bobbin it is imparted 20 twists per inch. Next is the stage of doubling in which two plys of the twisted raw silk is combined to form a compound yarn. At this stage 3 twists are imparted per inch. In the next (and the final) stage the two ply-yarn is imparted 15 twists per inch. This yarn intended to be used as warp is called organzine and its local name is *Huri* or *jodi Huri*. Then, strands of organzine are wound on the warping wheel and the length of a warp is generally 60 yards in the locality.

The twisters produce warps for sale or produce them to order in which case they charge Rs. 16 per Kg. of raw silk used in the preparation of warp.

Ready wefts (Sappe)

The silk yarn intended for weft is called tram and the local term is *Sappe* or *Sappe Huri*. The raw silk strand is wound on to bobbins with no initial twisting. Then three strands of raw silk are combined to form a compound yarn at which stage it receives 3 twists per inch. In the final stage of twisting the yarn is imparted 9 twists per inch. More twisting is necessary for organzine as it has to withstand the strain of weaving.

In order to relieve of its spiraling character gained on account of twisting, the silk yarn is subjected to streaming for a period of 10 minutes in a vessel used as a steam chamber.

Both the organzine and tram are wound in hanks of 42 inches in circumference. The hanks are reduced into skeins and packed by paper wrapping.

The cost of organzine was about Rs. 175 per Kg. and that of tram was Rs. 110 per Kg. at the time of this study.

Lace (jari)

Lace is produced from filature raw silk, silver and gold. Fine silver wire is wound round silk yarn in such a way that the yarn is completely concealed within the coil of silver wire. Then this is subjected to gold plating and thus the lace is produced. This material is imported from Surat and the local craftsmen get it from the dealers at Bangalore. The unit of transaction of lace is *Marc* which is about 240 grams in weight either in the shape of eight skeins or four bobbins (reels). The cost of lace is Rs. 125 per marc.

Incidentally it may be mentioned here that manufacturing of gold lace was an important industry in Bangalore till the year 1870. The imports of lace from France where the industry had made great headway killed the local industry. The preparation of gold lace was the occupation of 'Sarigeyavaru' a caste found chiefly in Bangalore District.*

* This information is based on 1931 Census Report.

The other materials required for degumming and dyeing are washing soda, soap, colour powders and acetic acid.

TOOLS

The loom and its many accessories constitute the chief tools of this industry. The weaving machinery in addition to the loom includes a few preparatory machines which are quite simple in construction.

Loom (Magga Settu)

The loom is the machine for weaving cloth in which two sets of threads, warp (*hasu*) and weft (*hokku*) are interlaced. Warp is the collection of threads spread out lengthwise on the loom and weft are the threads that run crosswise along the width of the warp.

The handlooms can be classified into groups either on the basis of raw material used for weaving or on the structure of the looms.

On the basis of the raw material used for weaving the looms can be classified into the groups :

(1) Cotton weaving looms ;

(2) Silk weaving looms ;

(3) Woollen weaving looms ;

(4) Looms weaving fibres other than the materials included in the first three groups.

Considering their structure for categorisation, hand looms can be classified as :

(1) Primitive looms ;

(2) Pit looms ;

(3) Frame looms ;

(4) Semi-automatic looms.

The primitive looms, as the term itself indicates, have remained unchanged since generations. In this State, woollen blanket loom and carpet loom come under this category. These looms are simple in structure and the weft are threaded by hand for interlacing the warp ends. Their cost is meagre and the production capacity is low.

Pit looms are the most widely employed handlooms in this State. They are of two types—the throw shuttle and the fly shuttle.

The frame loom has come into being as an improvement of pit loom. Frame looms have become popular on account of their many sided advantages.

The semi-automatic looms are improved frame looms similar to a power loom. These looms are in use in places where electric power is not available. Only a limited range of fabrics can be produced on this loom. The out-put is about 3 to 4 times more than that of a handloom and about half of that of a powerloom.

In Kollegal weavers produce silk fabrics on fly shuttle pit looms. Only two of the weavers in the town weave on throw shuttle pit looms.

As the name implies the loom stands on a pit. Till the advent of fly shuttle, throw shuttle pit looms were in use. The main difference between the two looms is that in the throw shuttle sley, the shuttle are thrown across the shed from one end to the other by hand and in the loom with fly shuttle sley, the shuttle is propelled from one shuttle box to the other by pulling a cord attached to the picker.

The Throw Shuttle Pit Loom

This loom consists of a sley without a race board, a cloth beam (*kunte*) and country healds (*achu*). The healds are operated through treadles (*avuge chakke*) by feet in a pit (*maggada guni*) at a depth of 2½ feet. Ball warp is arranged at the back of the loom. After weaving a little length the warp is let off. This releases the chord tied to the warp and the length of woven cloth is wound on the cloth beam. This process is repeated as the weaving is carried on. The sley of the loom does not have a race board but carries a country read (made of jowar straw). The whole is supported by a beam resting on the connecting rods of the four posts fixed to the ground—two at each end by the side of the pit. The weft is beaten to fell of the cloth by swinging the sley at the end of each pick.

This type of loom has many advantages. Its cost is low and it provides vast scope for weaving a large variety of fabrics with extra weft designs. Further, this loom is more suitable where design necessitates change of weft for each pick. It is easy to adjust the pre-dyed weft for the correct formation of tie-dye patterns of the weft. Fabrics having borders of soild colours require three or more shuttles which operation cannot be easily effected on a fly shuttle pit loom.

This loom is suitable for long warps and for weaving as it puts minimum strain on the warp. Despite its simple construction it causes no vibration while weaving as the frame posts are firmly fixed.

The Fly Shuttle Pit Loom

The fly shuttle pit looms are in use to a very large extent at Kollegal. It has become quite popular as its production capacity exceeds by 3 to 4 times that of ordinary throw shuttle pit loom. It has all the advantages of a throw shuttle pitloom excepting the weaving of intricate weft patterns.

The introduction of fly shuttle looms has strengthened the handloom industry to a great extent. Wide range of choice designs can be produced on this loom in combination with dobbies or jacquards.

The fly shuttle pit loom is similar to a throw shuttle pit loom excepting for this major difference. In the fly shuttle loom the sley carries a race board and two shuttle boxes (*lali pettige*) on either side, with a picker (pikker) propelled by means of strings. The fly shuttle oscillating sley works at a higher speed than the throw shuttle sley and can have 20 to 30 picks per minute and this higher speed results in an increased rate of production.

Description of the parts of the loom—Sley (magga)

The sley or slay is the swinging frame of a loom having the reed guiding the warp threads and carrying the race board and shuttle boxes. It has to and fro movement which enables it to beat up the weft to the edge of the cloth.

Healds (Achu)

Healds, olso called heddles are that part of the loom mechanism used to raise and lower the warp in a loom. It consists of an eye formed of twine through which the warp thread is drawn. A large number of healds are mounted to a shaft in each loom.

Reed (Thattu or Panne)

It is a comb-like arrangement of flattened steel wires (or of jowar stalk) fixed in a frame. Its functions are to keep the warp threads in position to form a guide for the shuttle and to beat up the weft to the fell of the cloth. It also helps to determine the number of warp threads per inch. The

number of threads per inch indicate the quality of fabric. As the number of threads per inch increases the quality becomes superior.

Race board (Lali mane)

This is the part of the sley in a loom along which the shuttle travels. This is also called shuttle race. Each end of the race board is provided with a shuttle box (*lali pettige*), from which the shuttle is thrown to and fro when the loom is working.

Shuttle (Lali)

This is a device which carries the weft across the loom through the shed (*Ani*), *i.e.*, the horizontal opening formed between the warp threads. It is made of teak wood, boat shaped with a metal tip (*Lali kuppe*) at each end, and one of the ends has an eye (*lali mani*) through which the weft passes. A small wooden bobbin called pirn (*Khandike*) carrying the weft fits the shuttle.

Beam (Kunte)

It is a flanged wooden roller which carries warp threads in a loom when they are in position. Each loom consists of two beams, one a warp beam on which the warp threads are wound which also provide necessary tension and the other a cloth beam on which the woven length of fabric is wound as the weaving proceeds.

Next to loom the following equipments are essential in the weaving industry.

Warping Charaka

It is a machine made locally. It comprises of a cycle wheel with hub and spokes fixed in a wooden fork and a handle is fixed to the hub which facilitates imparting motion to the wheel. This wheel acts as a fly wheel as it imparts motion to a rotating wheel carrying a spindle for receiving pirn (*khandike*).

Arate

This is a device made of bamboo splinters for taking yarn before the same is wound on to the pirn.

Thoduva mane

This consists of two bamboo pieces each of about 2½ feet in length. The yarn is placed in the *Thoduva mane* while it is wound on to the *Arate*.

Techniques of Production

The weavers of Kollegal get readymade warp and weft yarns, and as such the preparation of warp and weft from raw silk need not be done by the weavers. The following stages of work are attended to by the weavers in the production of silk fabrics:

(1) Degumming;
(2) Dyeing;
(3) Arranging of warp yarn;
(4) Winding of the weft yarn on the pirns;
(5) Weaving;
(6) Finishing.

Degumming

This is the process to remove the gum contents in the silk yarn and it is essential for dyeing the yarn. About one and a half gallons of water is boiled in a copper vessel. A mixture of soda ash textile soap and Hydrasulphate is added to the boiling water and stirred well. This degumming solution is allowed to boil for a few minutes. The hank of yarn to be degummed is dipped and rotated in the solution for a period of one to one and half hours till it becomes soft-white losing its yellowish tinge and there is a loss of weight to the tune of 25 per cent. It is removed from the solution and dried. If the yarn has to be dyed immediately there is no need for drying.

Dyeing

This process is generally done by the weavers themselves. Two to three gallons of water is placed in a copper vessel and heated to boiling point. The colour powder is mixed to the boiling water. The colour powder is first dissolved in a little quantity of cold water and then the solution is poured into the boiling water and stirred well. The temperature of the water is reduced a little by reducing the heat in the hearth. The degummed hank of yarn is dipped in the colour solution and rotated in it for about an hour. Samples of coloured yarn are tested for the fastness of colour and this is based on the experience of the craftsman. Then, the hank is removed from the colour bath and a little quantity of acetic acid in liquid form is added to the solution and the hank is again soaked in this colour solution and rinsed for about 15 minutes. Afterwards the coloured hank is dried in shade. The quantity of the colour powder to be used in the preparation of colour solution depends upon the

shade to be imparted to the yarn. The quantity is more for dark shades and it is less for light shades, but the difference in cost is not appreciable.

Arranging of warp yarn

The warp yarn in hanks have to be stretched out before transfer to the loom. This work is done in the open area for want of enough space in the household premises. The warp frame consists of four bamboo pieces, two on each side within a distance depending on the length of the warp (usually 60 yards), each of these two pieces being fixed cross-wise and firmly secured by a rope to a peg fixed to the ground. The warp is then stretched over this frame. Broken ends, if any, are carefully mended. This process of stretching out the yarn over the frame is locally called *Madikolu suttuvudu* or *Banke hakuvudu*. A number of lease rods are placed in the warp breadthwise with a spacing of about a yard between them. Since 5 years a roller has been used to roll up the warp threads and this has saved the use of too many lease rods. This process of rolling the yarn into a roller cannot be done by a single person and 3 to 4 persons have to attend to this operation on account of the unwieldy length of the warp.

The rolled up warp is taken to the loom, the free end is out and each pick is joined to the warp ends of the fabric already finished on the loom. This process is called *Achukechuvudu*. Normally the weaver himself does not attend to this operation. There are experts who finish in a day and a half this work of joining the ends of the new warp to the ends of a portion of the fabric already woven for a normal charge of Rs. 4 only.

In the next stage the picks of the new warp are drawn through the healds and reeds and wound on the cloth beam.

Winding of the weft yarn on the pirns

While the above processes are attended to by men, the female folk of the household will be engaged in supplying the weft yarn to the weavers. The hank of weft is placed in the *Thodura mane* (two bamboo pieces) and the yarn is wound on to an *Arate*. This process facilitates the winding of weft yarn on the *pirn* (*kandike*). The pirn is fixed to the spindle of the *charaka* and the yarn from the *arate* is wound on to it.

Weaving

With the warp laid on the loom, *i.e.*, after the reed and heddles are adjusted, the weaver commences the work of weaving the cloth.

He puts the shuttle containing weft bobbin in the shuttle box at his right and presses the right pedal with his right foot. When this is done the heddle attached to it goes up along with the warp threads passed through it. This separates the warp yarns into two "layers" and the opening so formed is called a 'shed'. This shed should be large enough to enable the shuttle to pass through it smoothly. When the shed is formed the weaver pulls the string of the loom which connects the picker with force in such a way that the shuttle passes swiftly from one end to the other carrying the weft thread along with it. When the shuttle reaches the other shuttle box the weaver brings back the sley so that the weft yarn is brought to the "fell" of the cloth.

He then releases the pressure on the right pedal and presses the left one with his left foot and again the pre-determined warp threads go up and a shed is formed. The shuttle which was resting at the other shuttle box is brought back to its original position by pulling the cord connected to the picker. The weft thread is again brought to the "fell" of the cloth with the help of the sley.

This alternating process is continued till a sufficient length of fabric is woven after which the weaver gives a turn to the cloth beam over which the woven cloth is wound. The weaver has to keep a steady watch over the movement of the shuttle to ensure that the weft yarn passes through the shed unerringly. Sometimes the yarn snaps and the weaver stops the operation, joins the broken ends of the weft and continues his operation.

Finishing

After weaving a full length of sari or fabric, the weaver allows a little length unwoven, and then weaves a little length of the subsequent fabric on the same warp. It has to be noted that one full length of warp facilitates the weaving of 5 to 6 sarees depending upon the length of the saree which varies from 5 to 6 yards. Then, between the finished end of the first fabric the warp is cut and the woven fabric is taken out from the cloth beam of the loom.

Then the sari or fabric is folded and wrapped with a kraft paper.

Fabrics produced

The silk weavers of Kollegal produce sarees, shirting, coating, turban and blouse pieces.

The length of a sari varies from 5 to 6 yards. Sarees of 8 to 9 yards are made to order. The width of a sari is about 45 inches. The turbans of Kollegal are in good demand in North Karnataka and Maharashtra areas. The turban is a cream piece of fabric with no designs, measuring 8 yards in length and having a width of 28 inches. In the following table information regarding the number of looms on which different types of fabrics are produced at the time of this study is furnished :—

Type of Fabric	Private Sector		Government Filature	Khadi Centre
	No. of looms			
	Handloom	Powerloom	Handloom	Handloom
1. Saree	30	..	13	1
2. Shirting	38	3	3	4
3. Coating	5	..	..	1
4. Turban	13	..	..	..
5. Blouse pieces	..	..	..	..
6. Dothi	1	..	..	1
Total	87	3	16	7

Designs

The silk sarees of Kollegal are popular for the attractive designs, colour and types of borders. Designs of other types of fabrics are not worth mentioning and fabrics like turban and shirting are made with no designs. Following are the popular designs found on the borders of saries :—

1. Rudrakshi design.
2. Double Rudrakshi design.
3. Jalary (mesh) design.
4. Hamsa (swan) design.
5. Kamala (lotus) design.
6. Vanki (spiral) design.
7. Bentex design.
8. Bulb design.
9. Mango design.
10. Leaf design.
11. Star design.
12. Moon and Star design.
13. Heart design.
14. Banaras design.
15. Thilakam design.
16. 'S' design.
17. Cadroi design.
18. Circle design.
19. Anarkali design.
20. Leaf and flower design.

These designs are used separately or in combination. There was a good designer at Kollegal but he has left Kollegal for Delhi and the local weavers are following the same designs he evolved and they are unable to produce new designs for want of skill. They are yet to make use of the new designs innovated by the Weavers' Service Centre of the All India Handloom Board, Bangalore, and the Handloom Research and Designing Centre, Bangalore.

CHAPTER III

ECONOMIC AND GENERAL ASPECTS

Most of the weavers at Kollegal work on their own looms, but produce fabrics for the master weavers. Fourteen looms are plying in establishments which produce their own fabrics. Out of 73 craftsmen working for the master weavers, 68 own looms and 5 work on hired looms. The hire charges per loom per month is Rs. 3. Two of the loom owners hire weavers on piece-rate basis.

In the handloom unit of the Government Silk Filatures the looms are owned. In the silk weaving centre of Khadi Gramodyoga Kendra, the weavers have installed their looms in the premises of the Kendra. The number of looms that were plying in these two units during the course of this study was 16 and 7 respectively.

Cost of production

The following is an itemised cost statement of raw materials, labour and over-head charges as ascertained from the Government Silk Filatures, Master-weavers and Owner-weavers :—

Government Silk Filatures

I. Sari : 5 Saries of 5.5 metres each. Design 17 dents of brick design both sides jari and self—

	Rs.	Rs.
Cost of raw materials—	(0.00)	(0.00)
1. Yarn for warp (725 gms. at 221.64 per Kg.) ..	160.69	
2. Yarn for weft (922 gms. at Rs. 202.93 per Kg.)	187.10	
3. Gold lace ..	82.27	
4. Dye stuffs ..	10.75	
5. Other materials ..	2.50	443.31
Cost of labour:—		
1. Weaving ..	78.12	
2. Alta winding and dyeing ..	8.84	
3. Pirn winding ..	12.60	99.56
Overhead charges (such as G.P.F. E.S.I. and leave benefits to craftsmen) ..	26.35	26.35
Total cost of production ..		569.22
Profit at 12½% ..		71.15
Total ..		640.37

Selling price of each piece of Sari is Rs. 640.37/5 *i.e.*, 128.08 (Rs. 128.08 being rounded off to Rs. 128.10).

II. Shirting—

Woven with good warp and sub-standard weft.

	Rs.	Rs.
Cost of raw materials :—		
1. Yarn for warp (730 gms. at 221.64 per Kg.) ..	161.80	
2. Yarn for weft (1961 gms. at 111.00 per Kg.) ..	217.67	
3. Dye stuffs ..	4.75	
4. Other materials ..	2.50	386.72
Cost of labour :—		
1. Weaving ..	44.98	
2. Alta winding and dyeing ..	15.20	
3. Pirn winding ..	12.60	72.78
Overhead charges ..	22.93	22.93
Total cost of production ..		482.43
Profit at 12½% ..		60.31
Total ..		542.74

Selling price per metre is Rs. 20.25

III. Sari—

Length of warp : 27.5 metres. 5 saries of 5.5 metres each 15 dents of hearth design, both sides jari and self mundani.

	Rs.	Rs.
Cost of raw materials :—		
1. Yarn for warp (700 gms. at Rs. 221.64 per Kg.)	155.15	
2. Yarn for weft (974 gms. at Rs. 202.93 per Kg.)	197.65	
3. Gold lace (104 gms.) ..	62.46	
4. Dye stuffs ..	4.75	
5. Other materials ..	2.50	422.51
Cost of labour :—		
1. Weaving ..	78.12	
2. Alta winding ..	5.96	
3. Dyeing ..	3.20	
4. Pirn winding ..	12.60	99.88
Overhead charges ..	28.75	28.75
Total cost of production ..		551.64
Profit at 12½ per cent ..		68.96
Total ..		620.60

Selling price per piece is Rs. 124.15 (Rs. 620.60/5).

V. **Coating—**

Length of warp : 26.3 metres.

Cost of raw materials :—

		Rs.	Rs.
1.	Yarn for warp (1,046 gms. at Rs. 221.64 per Kg.)	231.84	
2.	Yarn for weft (3,309 gms. at Rs. 141.00 per Kg.)	466.57	
3.	Dye ..	8.75	
4.	Other materials ..	2.50	709.66
	Cost of labour :—		
1.	Weaving ..	51.21	
2.	Alta winding ..	23.32	
3.	Dyeing ..	3.20	
4.	Pirn winding ..	12.60	87.13
	Overhead charges ..	24.78	24.78
	Total cost of production ..		821.59
	Profit at 12½% ..		102.70
	Total ..		924.29

Selling price per metre : Rs. 35.14
or Rs. 35.15

Cost of production as furnished by

(*a*) *Master Weaver :—*

Sari—

Length of warp 60 yards, with ½" border—

	Cost of raw materials :		
	Yarn for warp (1.3 Kgs. at Rs. 155 Kg.) ..	201.50	
	Yarn for weft (2.2 Kgs. at 125 Kg.) ..	275.00	
	Dye ..	45.00	
	Jari ..	85.00	606.50
	Cost of labour :—		
	Twisting and warping ..	35.00	
	Colouring ..	10.00	
	Weaving ..	95.00	140.00
	Total ..		746.50

(b) Owner Weaver :—

Sari : Length of warp 50 yards
8 saries of 6 yards each, with ½" lace border—

	Cost of raw materials :—		
	Yarn for warp ..	175.00	
	Yarn for weft ..	220.00	
	Lace ..	95.00	
	Colouring ..	15.00	505.00

The weaver has worked for about 15 days with the assistance of a lady for pirn winding. He has sold the piece for Rs. 570 realising a profit of Rs. 71 and he has earned at the rate of Rs. 5 a day.

Shirting : Length of warp : 60 yards—

		Rs	Rs.
	Cost of raw materials :—		
	Yarn for warp ..	216.00	
	Yarn for weft ..	450.00	
	Dyeing ..	16.00	682.00

The weaver has sold the whole length of piece for Rs. 765. He has realised a profit of Rs. 83. The total number of days spent by him in the production of this piece is 16 and his earnings per day is Rs. 5, almost equal to what he gets if he should work for a master weaver.

It is perhaps for this reason that most of the weavers work for master weavers which rather involves no further investment on their part towards raw materials. The proportion of overhead charges is seen to be higher in the public sector.

Wage Structure

The weavers in the handloom unit of the Government Silk Filatures get piece work wages at the following rates shown against each item of work :—

		Rs.
1.	Plain shirting (width 45", 32 yards)	49.00
2.	Plain Dothi (width 54", 32 yards)	54.00
3.	Plain coating (width 45", 32 yards)	57.00
4.	Sari (plain with no dobby work, width 45", 32 yards) ..	49.00
5.	Sari (with dobby of less than 50 dents) ..	62.00
6.	Sari (with border design above 50 dents) ..	67.00

for the subsequent dents charges at Re. 1 for 10 dents or fraction thereof are paid).

For saries with designs extra charges are paid at the following rates :

For self, jari combined border of quarter inch and 2¼ yards at self Re. 1.

For Butta mundani (self) Rs. 4 per self.

For single self or mundani upto 200 dents Rs. 4 per self.

For double self or mundani above 200 dents below 400 dents Rs. 8 for each self.

	Rs.
7. Pavadi (plain with no dobby work 30" width, 32 yards warp) ..	44.00
8. Pavadi same as above with dobby work ..	57.00
9. Dothi (54" width, 32 yards warp)	60.00
10. Dothi (same as above with dobby work of less than 50 dents) ..	77.00

Butta charges for saries are paid at the rate of Rs. 5 for 100 butas of less than 24 dents and Rs. 6.50 for 100 butas of 25 dents and above.

Wages paid to weavers by the master weavers are :

	Rs.
1. Turban (28" width and 45 yards warp) ..	38.50
2. Shirting (50" width, 60 yards warp)	70.00
3. Dothi (50" width, 60 yards warp and ½" jari) ..	108.60
4. For sari of 45" width and 60 yards warp with ½" border ..	95.00

The weavers working at the silk weaving Centre of the Khadi Gramodyoga Kendra receive wages at the following rates :

	Rs.
1. Sari, per metre ..	2.20
2. Shirting, per metre ..	1.60
3. Dothi, per metre ..	2.20
4. Coating, per metre ..	1.00

Wages paid to the weavers in the handloom unit of the Government Silk Filatures exclude preparatory charges which the concern itself would meet while the master weavers and the silk Weaving Centre of Khadi Gramodyoga Kendra do not themselves meet these charges and the wage they pay is inclusive of this item.

The craftsmen who work for master weavers are assured of their wages for the work done, whereas the weavers who work on their own earn almost the same profit that too having invested substantially on raw materials.

Capital

The productive capital in the silk industry at Kollegal is Rs. 2,52,000 of which Rs. 12,000 is invested on looms and accessories and Rs. 2,40,000 serves as the circulating capital. About 67 per cent of the capital is the contribution from the private sector and 33 per cent from the public sector.

Production

The annual production of silk fabrics at Kollegal is valued around Rs. 14,40,000 from both the private and public sectors.

Marketing

The silk fabrics of Kollegal find a market in all important commercial centres of Mysore and in the neighbouring States of Madras, Andhra Pradesh and Maharashtra. The Handloom Export Commission has placed orders for coating and shirting with the master weavers for export. The rural folk around Kollegal go in for these silk saries on marriage occasions. Kollegal turbans are in good demand in North Mysore and Maharashtra.

The master weavers supply the fabrics against orders. They are also sold through the Emporia attached to the Silk Apex Society of Bangalore. The Silk Filatures is also having a show room in Kollegal for its own products.

According to the All India Silk Board, Silk fabrics valued Rs. 74 lakhs and Rs. 81 lakhs were exported to foreign countries during the years 1959 and 1960 respectively.

Co-operative Society

The Kollegal Silk Handloom Weavers (Production and Sales) Co-operative Society Limited, was established in 1957. There are 143 members on the roll, all from Kollegal, though the entire taluk of Kollegal has now been brought within its fold. The paid up share capital of the society is Rs. 5,043.

The Society has received a loan of Rs. 7,875 towards share capital and Rs. 37,500 towards working capital from the Government and the Apex Society. It has also received a grant of Rs. 1,300 towards managerial expenses.

The affiairs of the Society are managed by a Committee consisting of 9 Directors of whom one is a President. A paid assistant attends to work relating to accounts and sales.

In the year 1964-65 the Society supplied silk yarn to 48 members of the Society and paid to the members weaving charges on piece rate basis.

On the date of Survey the Society had stock of fabrics worth Rs. 13,084 and raw materials worth Rs. 2,020.

The Mysore State Silk Handloom Weavers Central Co-operative Society.

This Apex Society was registered on the 5th of March 1956. Its area of operation extends over the entire State of which Kollegal Society is a member. This institution has for its object the extending of every asistance for the smooth working of the primary Societies.

The Apex Society supplies raw silk, warp, weft and gold lace to the primary societies for distribution among its members. The Apex Society has also a Central Store for marketing the products of the primary societies. It has also established sales emporia in important centres like Bangalore, Hubli and Davangere within the State, and also in Madras and Madurai of Madras State.

Government Silk Filatures

The Silk Filature at Kollegal was started in the year 1930 as a private company and was taken over by the Government of Madras during World War II. After the Government took over, its activities were enlarged to meet the growing needs of parachute manufacture. The centre was managed on the lines of a commercial concern and came to be transferred to Mysore in consequence of States Reorganisation in 1956.

The Factory has silk twisting unit in which 3,000 spindles ply, producing about 12,000 Kgs. of organzine. Another unit at Mamballi functions under its control. The annual production is about 27,000 Kgs. of raw silk and 12,000 Kgs. of twisted silk.

A handloom section is attached to this unit at Mamballi. At the time of this survey 16 looms were working. The weavers of this unit belong to Devanga caste.

Households of Weavers

The weavers are concentrated in the Devangapet of the town after whom the locality takes its name. The craftsmen's houses are mostly built of mud walls, floorings and country tiles. Only a few houses are electrified.

Statistics furnished in the following paras pertain to households engaged in silk weaving in Kollegal irrespective of the establishment in which they work :

Out of 100 weaver households covered in this survey, 4 are 2 member households, 17 are 3 member households, 23 are 4 member households, 18 are 5 member households, 16 are 6 member households, 6 are 7 member households, 6 are 8 member households, 5 are 9 member households, 3 are 10 member households, one is 11 member household and one is a household with 17 members.

Their population is 530 consisting of 173 males, 178 females and 179 children below 14 years of age.

The heads of all the households are weavers. Out of the 100 households covered in this study, 93 households are depending upon weaving alone for their livelihood, while for 7 households weaving is the principal occupation with some other subsidiary occupations.

In these 100 households, 330 persons are gainfully employed, including ladies who assist in the preparatory process of weaving. No lady of a weaver household idles away her time.

CHAPTER IV

CONCLUSION

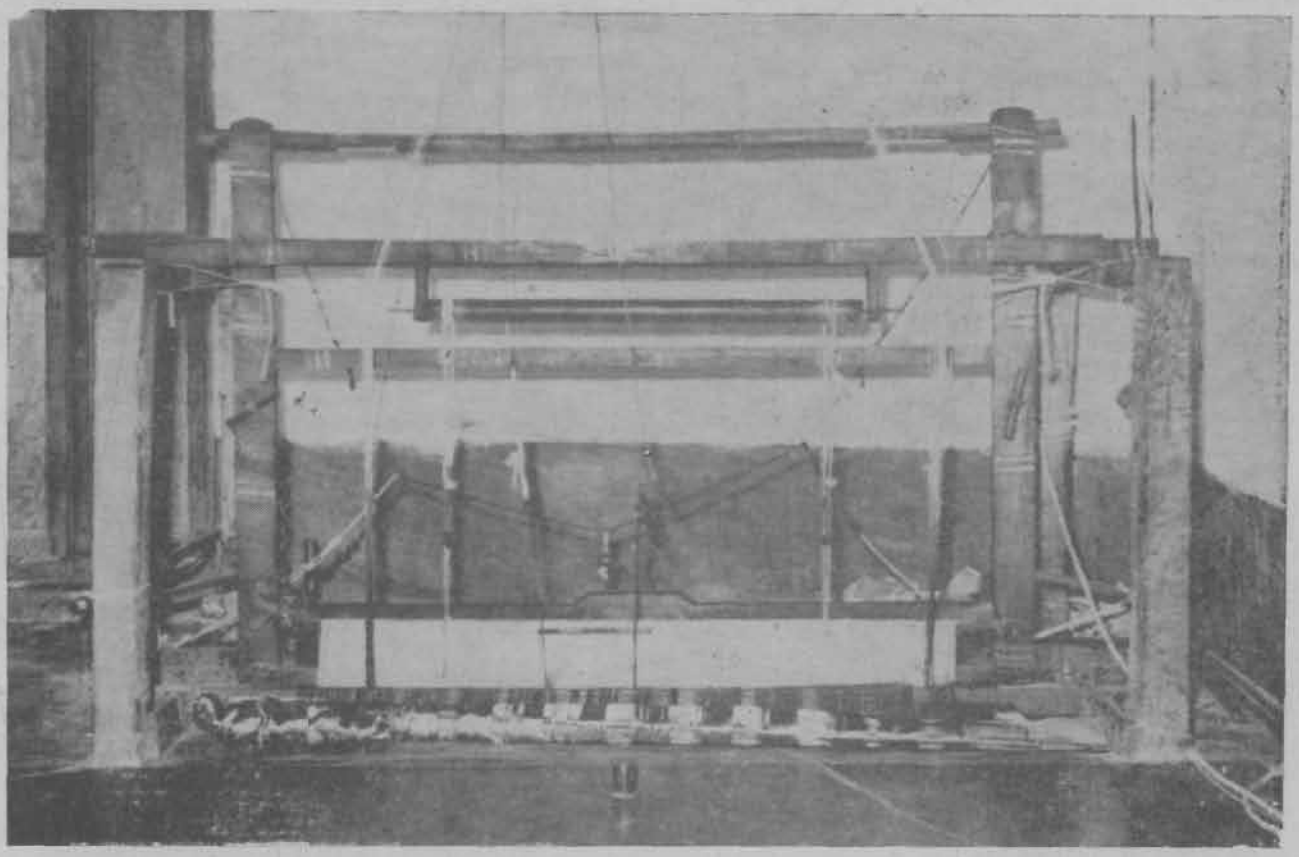
Silk weaving is a full-time occupation for 100 households in Kollegal. During the last few decades the weavers of this centre have been a prey to a series of adverse developments which threatened to push the industry to the brink of disaster. First, pure silk weaving came into distress before World War II on account of the competition it had to face from fabrics made of cheap artificial fibres. Next during the war, severe restrictions were imposed on the import of silk, nay, it was even suspended followed by the commandeering of most of the indigenous production for raw purposes. Thirdly, due to the inflationary tends of post-war years, the price of raw materials sky rocketted. These adverse circumstances coming as they did, one on the heel of the other led many a weaver of this centre to shift his preference from pure silk weaving to art-silk weaving.

Silk has a vital role in the nation's economy. Long before World War II the industry used to absorb all the raw silk produced in the country thus giving a fillip to its sustained growth. Then a decline in the offtake of indigenous silk became manifest due to competition from foreign producers. But in recent years the export of silk fabrics has considerably picked up mainly due to an increase in the world silk consumption year by year. These currently favourable circumstances presage a better future for the industry as a whole, and the Kollegal centre should also naturally share the boom. What is required is only the creation of conditions favourable for the production of raw silk and silk fabrics by the local weavers and their easy saleability.

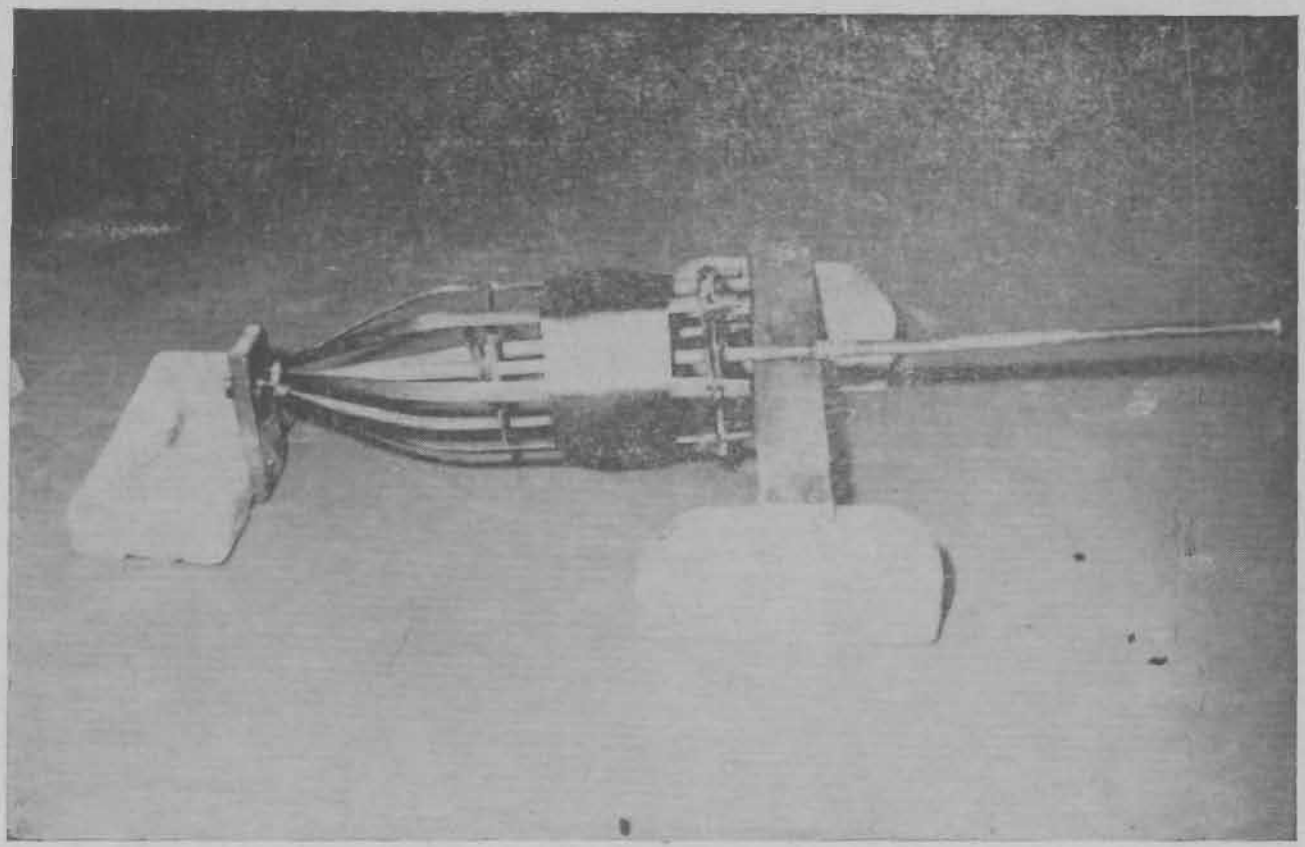
While the outlook for this industry appears generally satisfactory, this centre seems to need better organisational approach both regarding production and marketing should it be enabled to share the general prosperity of the industry. The weaver of Kollegal who ought really be a proud partner in the venture is in fact reduced conspired by circumstances, to the status of a wage-earner. This anamolous position is likely to be redressed were it be that a Co-operative Society is established which would cater more generously, to the needs of the weavers and help them earn profits commensurate with the labour they put in.

Unfortunately the Weavers' Co-operative Society now functioning in this Centre does little in this direction. Consequently the interests of the members in the society are quailing. Fraustration is writ large on the weaver's face.

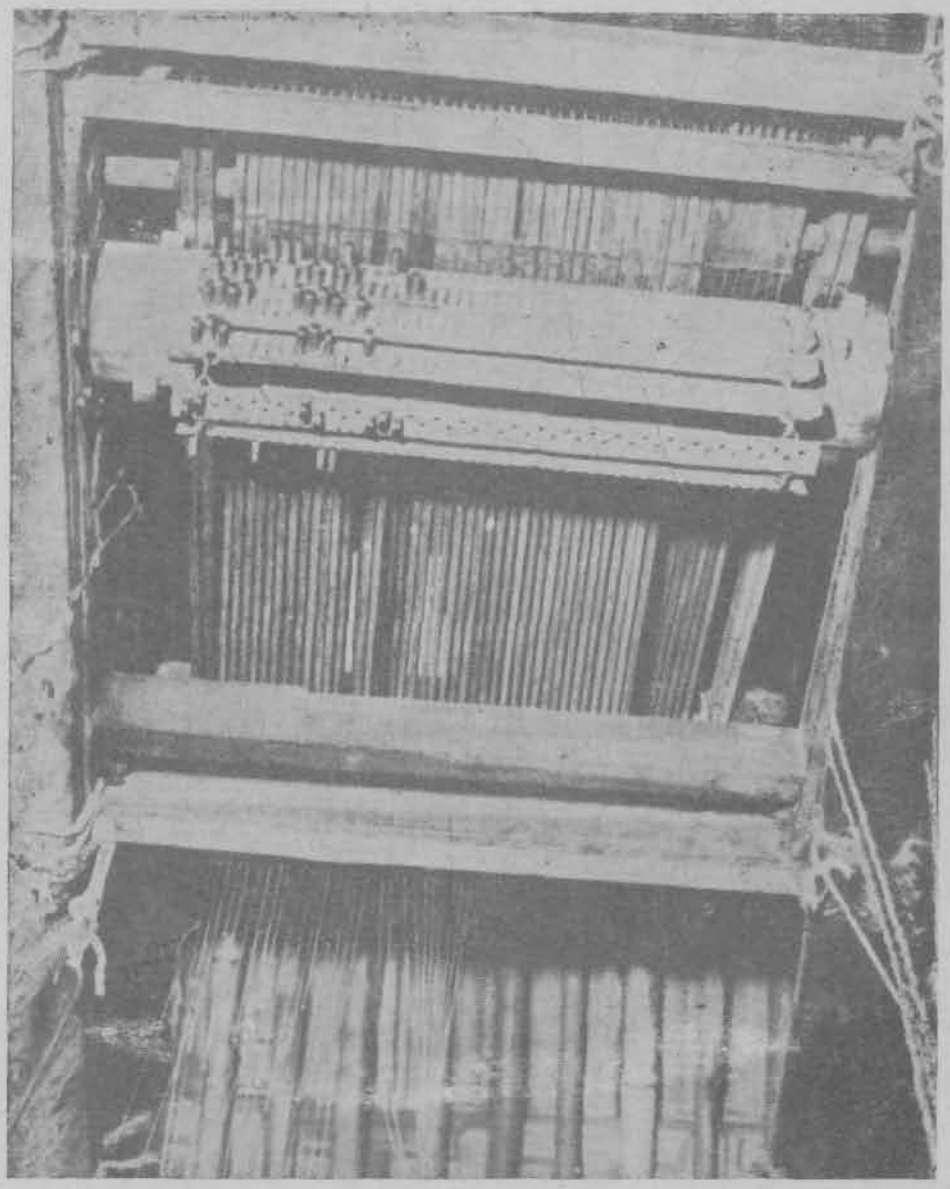
Things may change for the better if the working of the Society is improved, and the pale of its benevolent influence sufficiently enlarged as to make it worthwhile for the worker to take a more abiding interest in this institution. In effect, for this laudable objective to be achieved, the Society should endeavour to secure an upliftment of the status of the weaver from that of a mere wage earner to that of a partner in the industry, and a sharer in the profits earned by the Society. This is a problem which, in the last resort, has to be tackled by the Government. The remedy for the paradox that despite the existence of demand and supply, the industry languishes appears to lie in better organised and more efficiently managed Co-operative efforts. It is only the Government that can supply this lacuna.



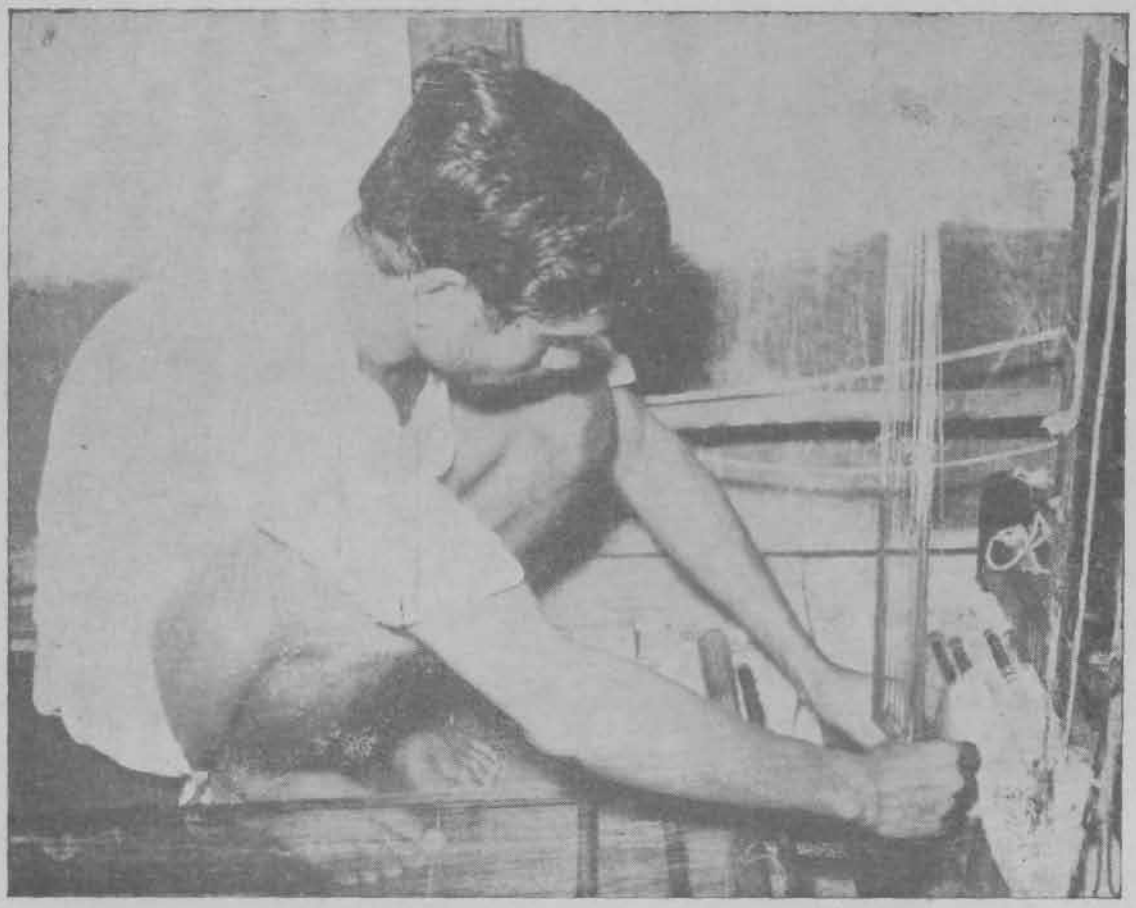
1. A front view of an idle, fly-shuttle pit-loom



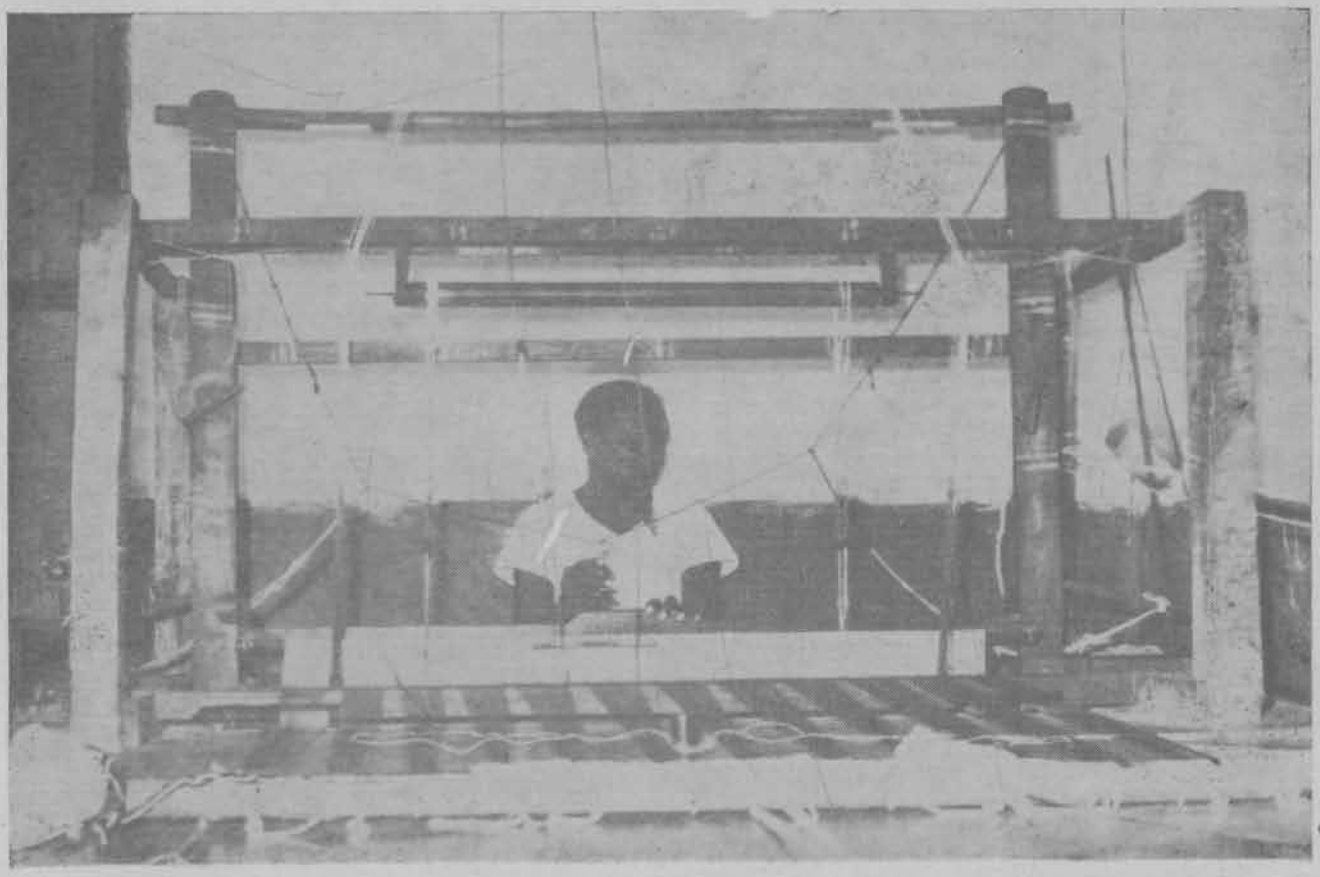
2. 'Arate' the bamboo bobbin



3. A view of the jacquard arrangement



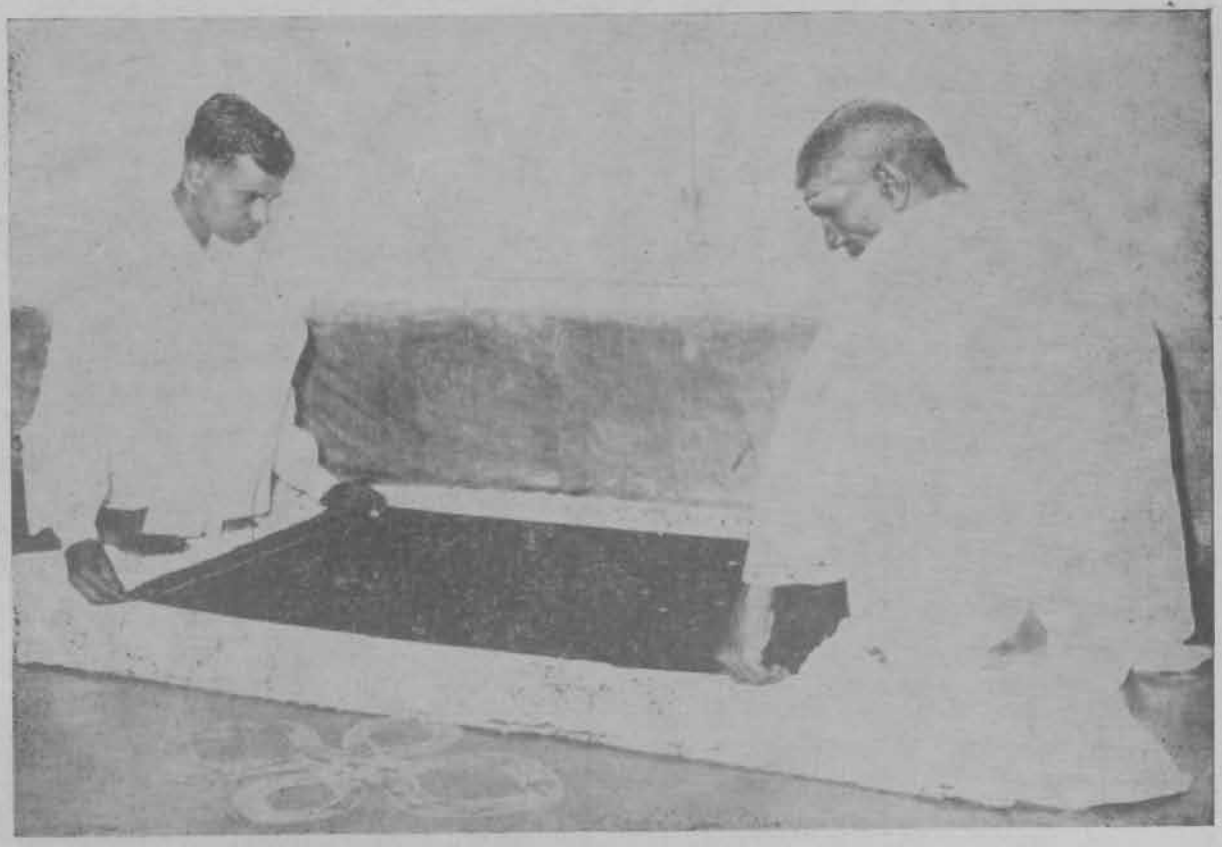
4. Setting the jacquard for the desired design



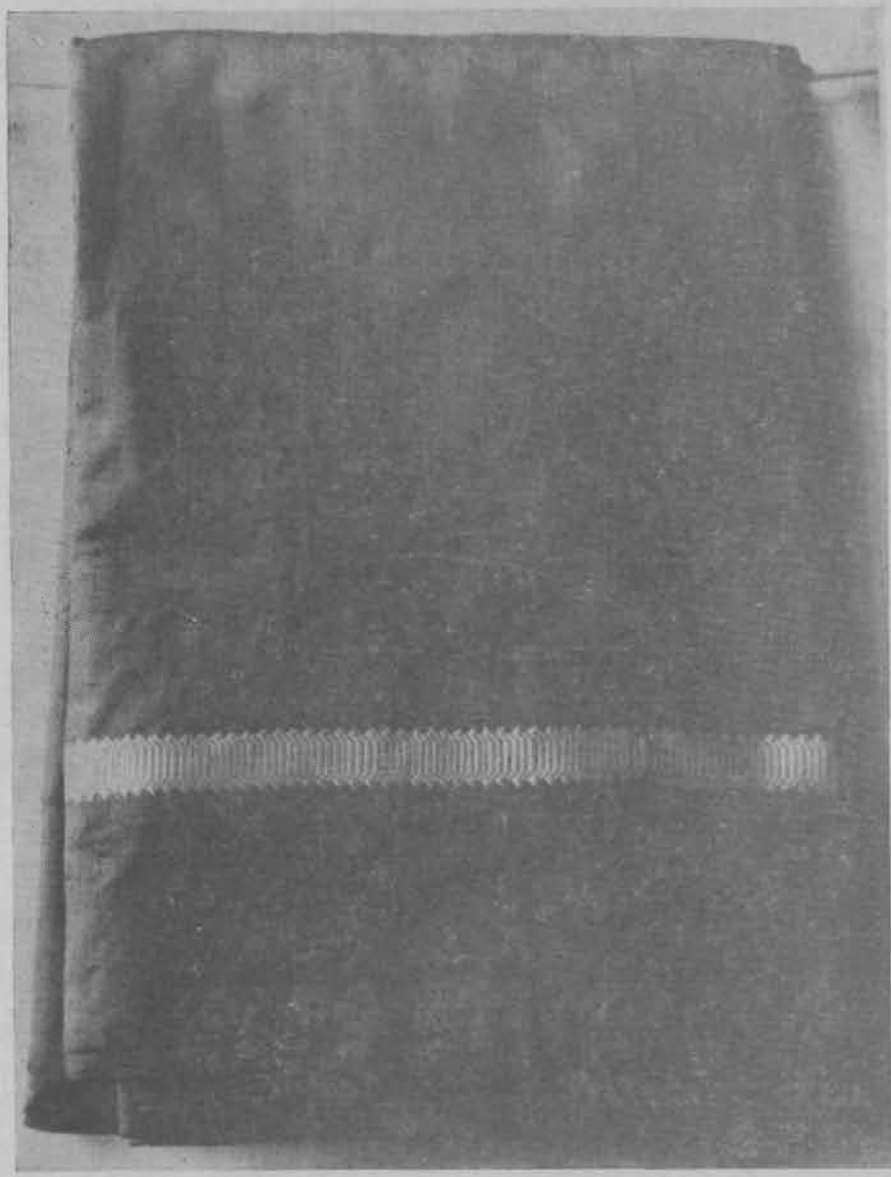
5. Front view of the loom in action



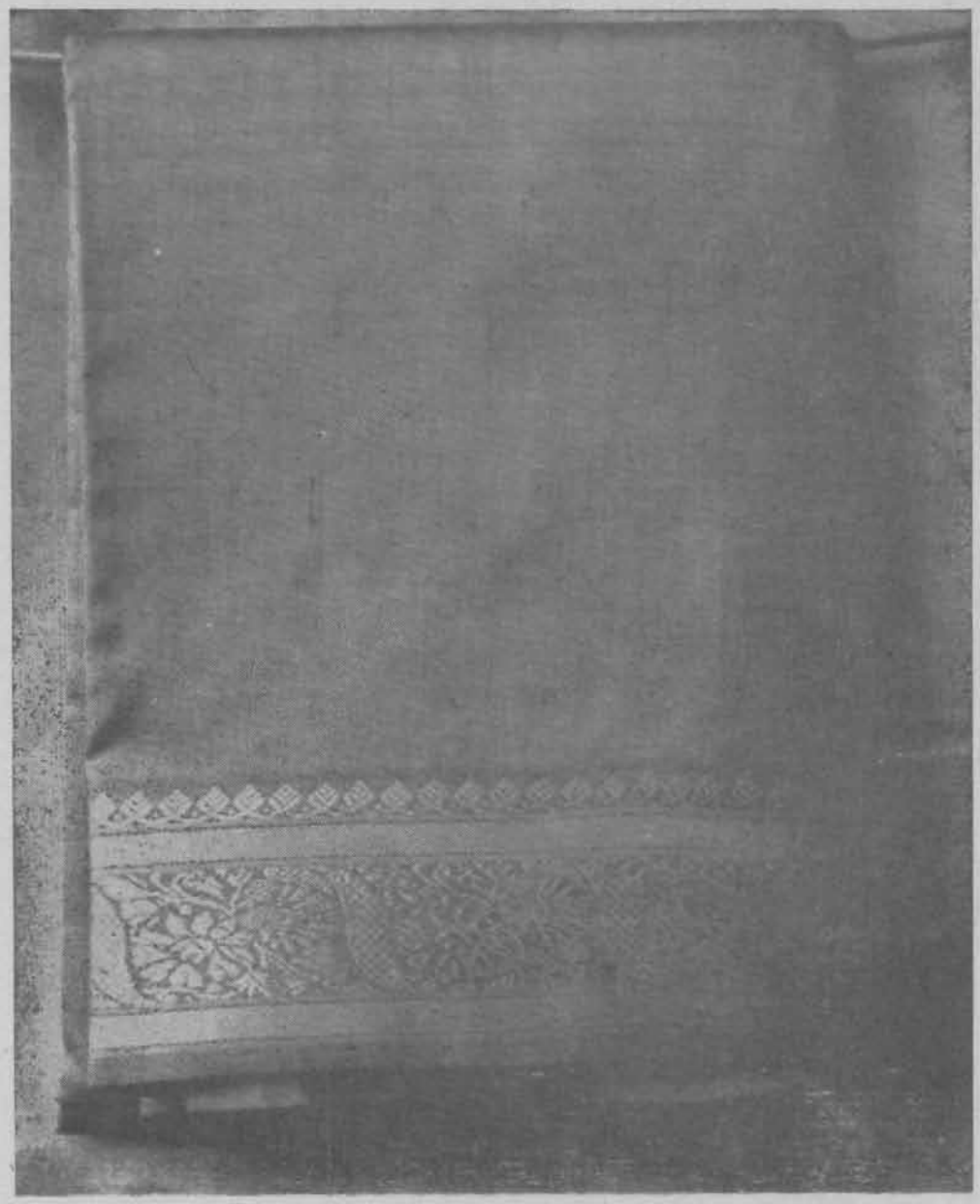
6. Side-view of the loom in action



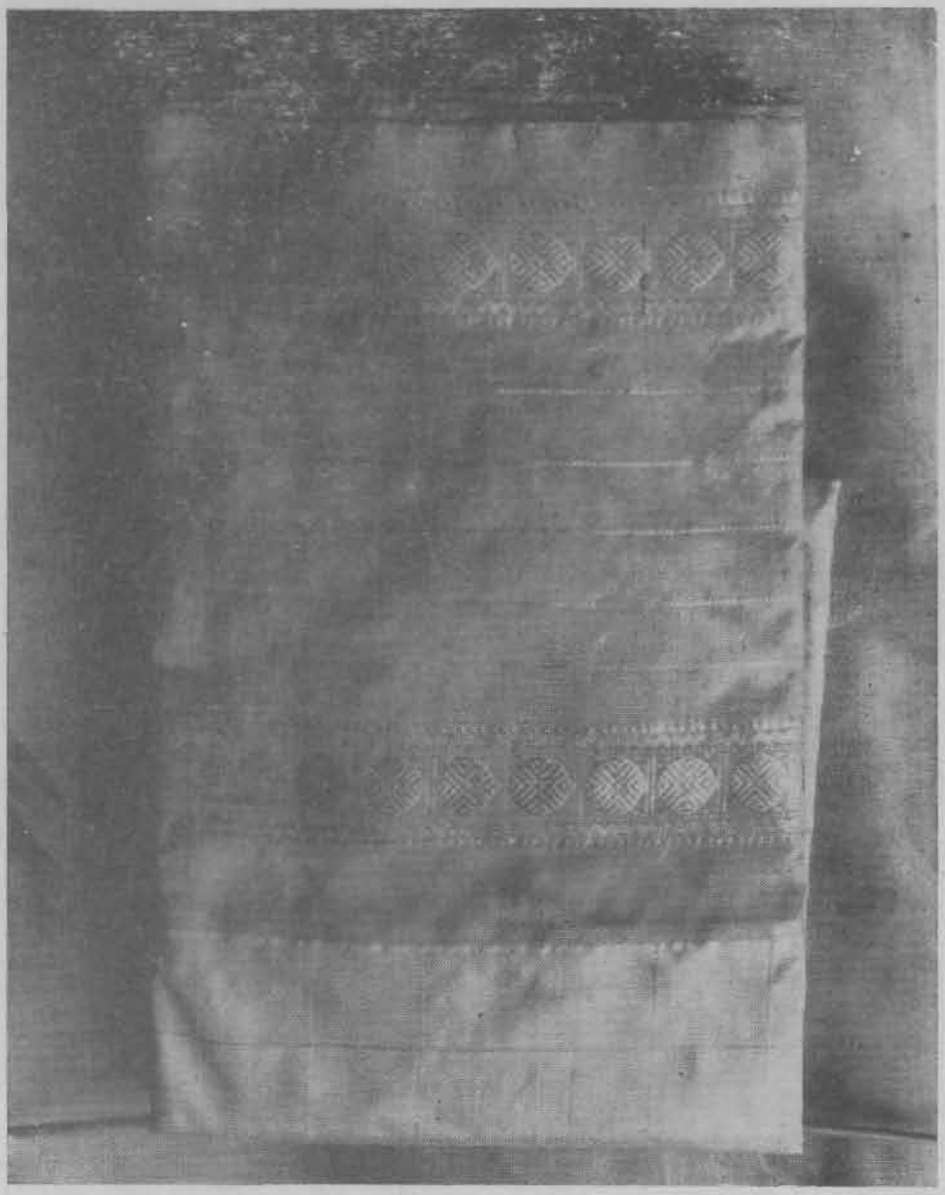
7. Folding a finished piece of saree



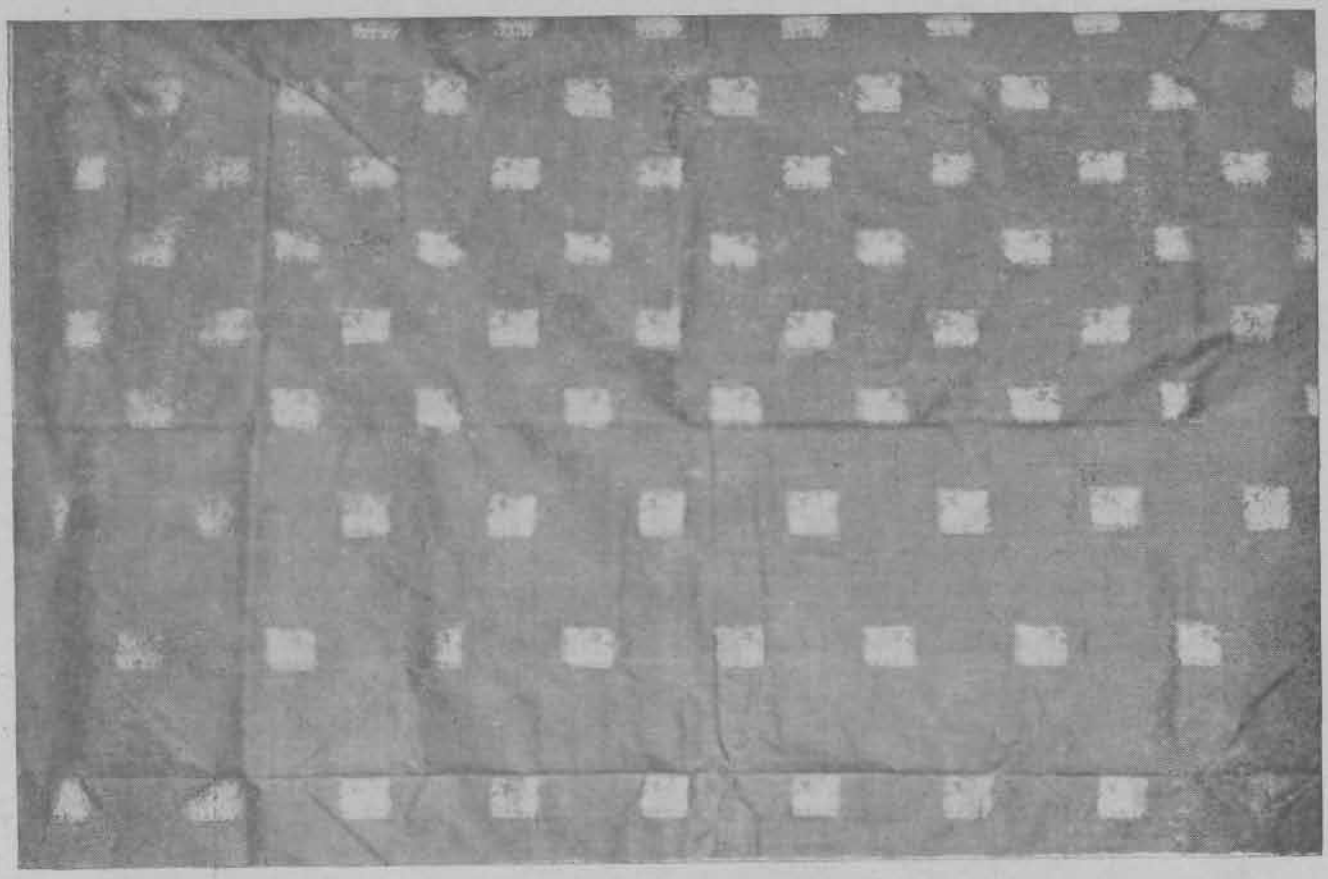
8. Saree folded and hung on a rod shows a popular border design



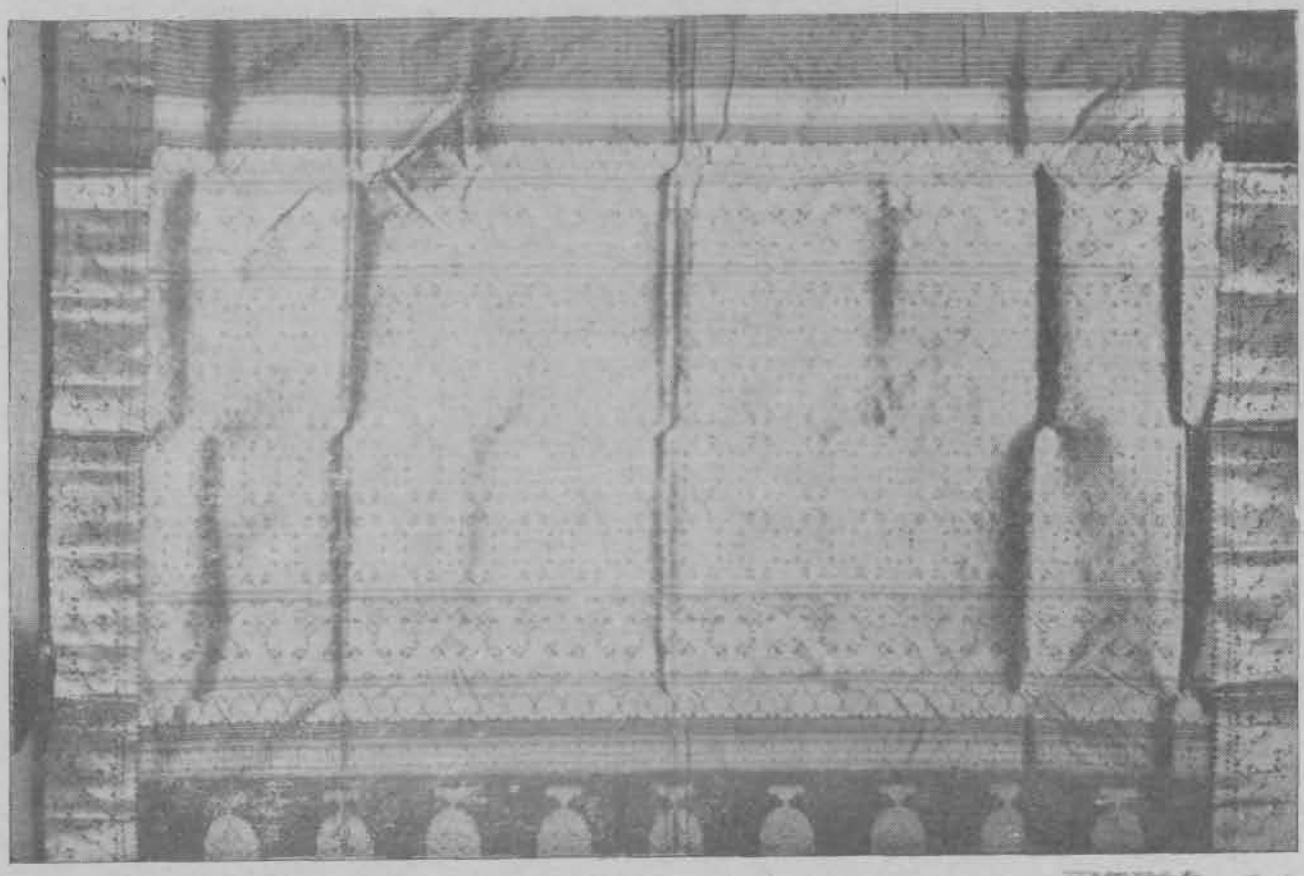
9. Popular border design



10. Popular border design



11. Lace (*Jari*) design on a saree



12. Intricately designed *Jari Seragi* of a saree

SILVER JEWELLERY

CHAPTER I

INTRODUCTORY

Introduction

Jewellery is a collective term used for jewels and their making. Jewels are ornaments made either purely of precious metals or with an inlay of precious stones for personal adoration.

In India, ornaments have been worn from times immemorial both as a means of adornment, and for religious and superstitious reasons. The origin of jeweller's art in this country goes to the obscure past, and down the ages it has played its role in history, arts and mythology. When the art of writing was unknown, rings have been the insignia of office or of authority, almost equivalent to the passport that people carry now-a-days. If these be the roles in royal circles, the rings with individual designs fashioned by fancy or calliography have been considered as abbreviated signatures and hence the term "signet ring" came about. Religion enjoins or recommends the wearing of certain jewels. Jewels were also worn as an amulet and protection against evil, each having significance according to shape and precious jewels used. Throughout the ages, jewellery has thus been a thing of great importance in religious, regal, commercial and private matters in this country. The following excerpts taken from the Encyclopaedia Britanica Vol. 3, page 35 on the Jeweller's Craft in India may be of interest to the reader :

"The Jeweller's Craft in India is of the highest antiquity. The form of ornamentation of the jewellery described in the ancient Hindu epics is said to denote an unbroken continuity of tradition from those times of shadowy history to the present day and even the names have suffered little change. The code of Manu, which is believed to have taken its present form about 2,000 years ago, contains a description of the jeweller's craft, and mentions the fines for bad workmanship and punishment for debasing gold ".

"A Hindu drama", "The Toy Cart", written about the same time, describes a jeweller's workshop where craftsmen examine pearls, topazes, emeralds, sapphires, lapis lazuli, coral and other jewels. Some set rubies in gold. Some string gold beads on colour thread. Some string pearls, some grind lapis lazuli, some cut shells, some turn and pierce corals. Sir George Birdwood points out the close relationship of such operations to the practice of the present day. A dialogue in the drama has reference to the skill with which jewellery was even then imitated.

"Few early examples of Indian jewellery have been preserved to the present day. The sculptures of Sanchi, Bharhut, Amravati and Orissa, and paintings such as those of Ajanta, demonstrate the similarity in appearance of the ancient jewellery to that still made and worn. Numerous representations of the Hindu Gods, whether human or animal, illustrate the early use of tiaras, necklaces (sometimes hanging in festoons to the waist), armlets at the elbow, bracelets, anklets and other forms of jewellery".

"One of the oldest known examples of ancient Indian jewellery in existence is a small relic casket found in a Buddhist shrine in the Kabul valley near Jellabad. It is of gold, studded with balas rubies, and when found it contained burnt pearls and coral, and beads of sapphire, agate and crystal, besides a number of small gold ornaments. Coins found with the casket show that its workmanship is to be attributed to the 1st century B.C. It betrays Greek influence, due to the conquests of Alexander the Great".

"The Indian goldsmiths are expert in the economy of the precious metals, beating gold and silver into the thinnest plates. Bracelets often end in the head of an animal ; earrings represent the flower of lotus ; and various blossoms are fashioned for hairpins. It is principally in the South India that elaborate gold jewellery is made with subjects in relief with Hindu mythology".

Sri C. Hayavadana Rao in his Mysore Gazetteer Vol. III pages 246-247 has the following to say about this craft :—

" Gold and Silver have always been employed to a very large extent in making jewellery and this has been the favourite method with the masses of investing their savings. There are certain

areas in the State where a small quantity of gold must once have been obtained from the washing of the alluvial soil. At present there is a regular trade in gold and silver bullion. In ornaments proper as manufactured articles, there is hardly any carrying trade worthy of being noticed and the import of such articles by private persons for their own use does not constitute an important item of trade in them from a commercial point of view".

"The common agency for the distribution of the precious metals inside the State is that of "Shroffs", an indispensable complement to the goldsmiths' trade and in many cases, the shroffs act as capitalist middlemen between the intending customers and the goldsmiths".

Sri C. Hayavadana Rao has also made mention of the working conditions of the goldsmiths in Mysore in the following terms:—

"The village goldsmith often works alone and sometimes takes his near relations to work as apprentices. He confines himself generally to the manufacture of simple ornaments and a single artisan will often turn his hand to what would in large centres of trade be looked upon as separate occupations as embossing, chasing, etc.

"Further, the goldsmith and the silversmith are almost universally the same in rural parts and there has been no clear distinction between the two branches of trade except in large towns. The village goldsmith is not always appreciated by his customers and the popular ideas about him are never flattering. His procrastination is proverbial. He is as often as not in debt and the silver or gold placed in his hands with to-day's order is invariably utilised in making ornaments ordered months ago.

"Goldsmiths as a class are not always in a prosperous condition and most of the members of the class in the interior parts of the State are poor and it is this poverty that may compel them to have recourse to doubtful practices often complained by their customers. Such of the goldsmiths as are prosperous have acquired their wealth by money lending or agriculture or some other occupation.

"Goldsmiths are generally paid for their work at a fixed rate per *tola* on the weight of the finished article, the material on which they have to work being usually supplied by the customer. The remuneration of a goldsmith is therefore, practically the payment for his labour only and it is regulated according to the nature of the labour required. The actual profits of the trade, if any, constitute a matter on which it is very difficult to get definite information. The wear and tear of tools, consumption of charcoal and the like, form the outlay to be incurred by the goldsmith. When he is employed by the customer to procure him gold and silver on which to work, as well as to do the work itself, he will have greater opportunities to work for making profits".

It may be mentioned here that the goldsmith is one of the twelve village functionaries under the Barabaluti system. B. Lewis Rice in his Mysore Gazetteer Vol. I, pages 579-581 has the following to say about this system:

"The following offices were hereditary, and established in all towns and villages, under the general name of Ayagar in Canarese and Bara Baluti in Hindustani:—

1. Shanbhog, Accountant.
2. Gauda, headman.
3. Kammara, Ironsmith.
4. Badagi, Carpenter.
5. Agasa, Washerman.
6. Panchangi, Calendar.
7. Nayinda, Barbar.
8. Madiga, Shoe maker.
9. Akkasale, Goldsmith.
10. Talari, Watchman of the village.
11. Niraganti, Watchman of the tanks.
12. Kumbara, Potmaker.

"Thhe duty of the *Akkasale* or godsmith was to measure the *songuru* or half-share of the crop which the ryots paid to the Sarkar, and to shroff the money collected in the village in payment of the revenue. For any other work done by him he might take payment, but for these the *hore-hollu* and *mura-batta* were his perquisites.

"The above twelve were the village servants; their offices were hereditary, going from father to son; and they were authorised to sell or mortgage their office when in distress."

In Mysore the traditional craftsmen engaged in the making of jewellery are producing articles in purely Hindu style marked by high artistic value. The reputed centres for jewellery in the State are many and as is well known, every large village and every town has its own goldsmith. There is, therefore, no point in speaking about any centres of jeweller's craft as such and a detailed study of the craft in all the centres is also impracticable. The present study is, therefore, confined to the one town of Udipi.

Centre of Study

Udipi is municipal town and a taluk headquarter in the South Kanara District. South Kanara belonged to Madras State till 1956 when it was transferred to Mysore under the scheme of Reorganisation of States on linguistic basis. South Kanara is a District in the coastal belt to the west of Western ghats.

The area of Udipi Town is 3.80 Sq. Miles and its population 24,610 according to the 1961 Census. It is at a distance of 37 miles from Mangalore connected by an all-weather road. It is an important pilgrim centre. This town came into existence more than a thousand years ago as could be substantiated by the two great temples of Chandreshwara and Anantheshwara of the place. The name Udipi for the town appears to have originated, according to a legend, from the temple of Chandreshwara in the town. The word "Udupa" means Chandra or moon and one who wears Chandra *i.e.,* Chandreshwara is "Udipi".

Udipi has been shedding spiritual lustre from the days of Shri Madhvacharya and holds this position of pre-eminence even to this day. The town is great in the educational field also. Not only there are several High Schools at Udipi, but there are also institutions of higher learning such as the Mahatma Gandhi Memorial College, Poornaprajna College etc. There is a Sanskrit College in the town whose fame as a seat of higher learning in oriental studies has spread all over South India. The heads of the eight mutts (monasteries) at Udipi established this institution. Manipal, known for its Engineering and Medical Colleges is only about 3 miles from this place.

Udipi is connected by bus to many important centres like Mangalore, Mysore, Bangalore etc. The nearest railway station to this town is Mangalore. The nearest port is Malpe about 4 miles from the town.

The Craftsmen

In Udipi the traditional goldsmiths are found in two groups *viz.* "Daivajna Bahmins" and "Viswa Brahmins". The trade, in so far as the manufacturing side of it is concerned is confined purely to the traditional craftsmen. Persons of other castes who have taken up to this trade, are only concentrating on the business aspect of it.

Daivajna Brahmins

Daivajna Brahmins also called Sonars, are stated to have come to these parts from Goa after its conquest by the Portugese in 1510. The Gods and Goddesses they worship are Mahlsa, Shantadurga and Mangesh in Goa. Local reports aver that they were attracted by the glory of Sonda chiefs in North Kanara when leaving Goa. In the past they were probably considered good astrologers which probably accounts for the caste name 'Daivajna' (on who knows the fate).

They have generally stuck to goldsmithy their traditional occupation, though some have taken of late to other avocations such as cultivation, trading. service etc.

Daivajna Brahmins have exogamous clans or gotras. They are Vaishnavites and owe allegiance to Vadirajaswamy. Their mother tongue is Konkani. Their claim that they are Brahmins is not accepted by others. Male members take the word Shet after their names (*vide* the list of workers in Appendix). They gird their boys with sacred thread which they renew every year in the month of Shravana. They accept food only from Brahmins. No other caste accepts food from them either, though they occupy a higher place in the caste hierarchy by virtue of their food and habits. The brahminical custom of shaving the heads of widows is prevalent among this community. They make pilgrimage to Tirupathi.

Viswa Brahmins

Viswa Brahmins at Udipi are Viswakarmas and call themselves Viswa Brahmins in the same manner as Sonars call themselves, Daivajna Brahmins. The classes pursuing the five superior crafts go by the name of Viswakarma. They claim descent from

Viswakarma, the celestial architect. Viswakarma comprises five groups *viz.*, Manu (carpenter,) Maya (Blacksmith), Throushtu (bell-metal worker), Shilpi (carver and sculptor), and Viswagnya (goldsmith). In Mysore they go by the names of Badagi, Kammara, Kanchugara, Shilpi and Akkasale respectively. They are found distributed all over the State, though called differently in different parts of the State.

Viswa Brahmins, according to local reports, are migrants to Udipi from Mysore. They do not associate with Sonars and claim superiority over them. They are vegetarians and their mother tongue is Kannada. Like Sonars, they work in gold as well as silver. They are religious minded and worship Kalamma, which is their tutelary deity. They wear sacred thread following the Brahminical custom. Widows are not allowed to marry again, but widows do not shave their heads as among the Sonars.

The position of Viswa Brahmins in the caste hierarchy is superior, but still no caste accepts food from them. Their women do not assist the male members in their trade.

There is little or no difference between Daivajna and Viswa Brahmins in their daily life. But yet they neither interdine nor intermarry.

Establishments

In Udipi 58 establishments are engaged in the making of jewellery. All these are proprietary concerns owned by traditional goldsmiths. Three establishments engaged in the mere trading of the finished products are owned by others.

CHAPTER II

TECHNIQUES OF PRODUCTION AND ARTICLES PRODUCED

Raw Materials

Gold and silver are the principal raw materials which the craft needs. These two metals are used for different purposes. While gold is used for making ornaments, larger articles of household utility are made of silver. Precious stones serve the purpose of embellishing ornaments of gold.

Gold.—

Gold is a quality metal on which one could work with ease on account of its highly ductile and malleable properties. Gold weighing only one grain can be drawn to a wire of about 500 feet long and can also be beaten into a very thin sheet. Gold is the universal symbol of great treasure.

The local goldsmiths buy their gold from the jewellers in Mangalore. The need for their purchasing this metal is limited as it is invariably supplied by the customers themselves. Gold in its purest form is known as *Aparanji*. The sovereign (gold coin) is an alloy of gold and copper, gold being 22 parts out of 24. It is called 22 carat gold. The traditional units of weight for gold are 'tola' and 'sovereign'. The sovereign is 11/16th of a tola. Metric weights are gradually coming into vogue. The local goldsmiths use old silver rupee coins which weigh a tola for weighing gold. The *gulaganji* (Abrus precatorius), the little scarlet grain with black top supposed to equal 4 grains exactly is the smallest unit adopted.

Gold is mixed with copper for manufacturing jewellery as it is difficult to work upon pure gold on account of its high malleability. The alloying hardens gold and renders it workable.

The most familiar way of assaying gold is by rubbing the metal on a touchstone (oregallu). This is a piece of soft blackstone on which gold is rubbed and by the colour of the mark it leaves, the purity of the metal is assessed.

Silver.—

This is also a greatly malleable metal. It is of a brilliant white colour and is resistant to atmospheric oxidation. This is cheaper than gold and its possession is also a prestige symbol. Articles such as plates, cups, tumblers and vessels for household use and ceremonial occasions are made out of this metal. The local goldsmiths buy silver from the jewellers of Mangalore.

Precious Stones.—

On the use of precious stones by jewellers, Sri Jamila Brij Bhushan has the following to say in his work "Indian Jewellery, Ornaments and Decorative Designs":

"The use of precious stones in early times as amulets and talismans is shown in many ancient records and the belief in the magic efficacy of stones may have given rise to their use as objects of personal adornment.

"Not only were precious stones endowed with these qualities by the sages, they were supposed also subject to disease, old age and death. They even take offence if an injury be done to them and become rough and pale."

"Most precius stones are found in crystalline form, but this characteristic is destroyed in cutting. Upto the 14th century pierced stones cut *en cabochan* were the greatest fashion. In India gems were polished according to their original shapes and colours and the object was always to preserve them as much as possible."

Other materials.—

A few of the chemicals only that are used by goldsmiths need mention. Borax is used as a flux in melting. Mercury, nitric acid and sulphuric acid are required in the purification process. Emery

paper and polish powders are helpful in the polishing of wares. The cost of these and others is indicated below :—

		Unit	Rs.
1.	Flux (Borax) ..	12 gms.	0.10
2.	Lac ..	12 gms.	0.12
3.	Nitric acid ..	1 oz.	0.50
4.	Sulphuric acid ..	1 oz.	0.40
5.	Polish ..	12 gms.	0.15
6.	Enamel colour ..	12 gms.	12.00
7.	Emery paper ..	a sheet of 10" × 8"	2.00
8.	Mercury ..	12 gms.	4.50
9.	*Sanka pashana* ..	12 gms.	3.00
10.	Copper Sulphate	10 gms.	0.12
11.	Blades for saw ..	Each	0.45

Fuel.—

The fuel used is charcoal obtainable from the local dealers.

Tools

The tools and implements in use with the goldsmiths are few and simple. The apparatus for heating and melting of metals in a furnace (*aggistike*), a crucible (*Kove* or *moose*) and bellows (*Thidi*) or blow pipe. The furnace is an improvised one made of an earthen pot or garden pot, and the crucibe which is of graphite is factory made.

The other tools more commonly in use are listed below with costs :—

Tools		*Cost*
		Rs.
1. Anvil (*Adigallu*)	..	25.00 to 30.00
2. Hammer (*Suthige*)	..	1.50 to 6.00
3. Tongs and Forceps (*Ikkula*)	..	1.50 to 3.00
4. Pincers (*Chimata* or *Dhandasu*)	..	1.50 to 3.00
5. Scissors (*Kathari*)	..	0.50 to 2.00
6. Files (*Ara*)	..	1.00 to 5.00
7. Chisels (*Chana*) 1/16" to 1 ¼")	..	0.50 to 3.50
8. Drill	..	10.00
9. Saw frame (*Guragasa Kaman*)	..	10.00
10. Vice	..	2.00 to 10.00
11. Whetstone or hone (*Sane kallu*)	..	12.00 to 20.00
12. Wire drawing scale (*Kambechu*)	..	2 00 to 8.00
13. Dies (*Achu*) (several desings)	..	1.50 to 25.00
14. Touchstone (*Oregallu*)	..	5.00
5. Crucible (*Kove* or *Moose*)	..	0.50 to 1.00

Goldsmiths of Udipi obtain the tools either locally or from dealers at Mangalore.

Techniques of production

The technique of manufacture is much alike for gold and silver and is simple. It calls for a great deal of skill and dexterity on the part of the worker. The manufacturing process is marked by five distinct stages *viz.* :—

1. Converting the metal to a workable bar.
2. Reducing the bar into sheets and wire.
3. Shaping of sheets and wire.
4. Finishing.
5. Polishing.

1. *Converting the metal to a workable bar*

The goldsmith is normally given old ornaments, sovereign or ingots by his customers to make new ones of their choice and description. The metal, in whatever form it be, is first cleaned by 'pickling' for doing which the metal is placed in a bath of sulphuric acid diluted with water. A few moments of immersion in the acid will help dissolve the dirt on the surface of the metal.

The metal is then placed in a crucible and melted in the furnace, As already mentioned an earthenware waterpot or garden pot serves the purpose of a furnace. Air is supplied to the furnace by the aid of bellows or a blower. Borax is added as a flux to accelerate melting. The molten metal is run into narrow channels of a machine tile where it cools and solidifies into a thick workable bar of gold. This bar readily lends itself to being cut, bent or hammered as desired.

If the ornament is to be prepared out of a certain weight of the metal, the artisan has to first decide on the allocation of the metal between the several parts of the ornament. Important parts will be made first and the various components will be joined together at a later stage.

2. *Reducing the bar into sheets and wire*

The bar of gold is then beaten into thin sheets or drawn into a wire. The bar is beaten on the anvil into convenient size and shape, being heated frequently all the while to make it pliable. The process of heating the metal into a dullred on the forge which burns off deposits of dirt and evens out any stress and strain so as to render it soft enough for work is called "annealing".

For making wire, the bar is first beaten to a workable thickness and reduced thereafter to the required size by passing it through holes of a wire-drawing scale or draw-plate, which is locally called *Kambechu*. Tongs is used to apply the pull force. This tool is an essential aid to a goldsmith, but used rarely by other metal workers. It is a hardened steel plate containing a series of holes of different gauges. The wire whose gauge has to be reduced is heated to a dull red and drawn through the holes in the *Kambechu* commencing the process with the hole equivalent in gauge to the wire and then moving on to the next until the wire attains the required size.

3. *Shaping of sheets and wire*

The gold sheet or leaf is pressed on the *achu* or die for shaping. The achu is a cube of bell metal with many circular hollows of different sizes on its sides. Dies of different design are also used with the help of which the desired pattern of the material is fabricated.

The wire is wound into tiny rings or twisted into a band the shape of which depends upon the article made.

4. *Finishing*

Ornaments made are either solid or hollow or a combination of both. Hollow pieces are first made in two halves and then joined together.

Most of the neck ornaments are made by joining several pieces. As many of the pieces as are required for a particular ornament are made and they are joined together in a chain by soldering. Before soldering, the pieces are made absolutely clean to facilitate an even spread of the solder on the joint. Giving proper shape and look to the various components and cutting or carving of the various designs requires skillful workmanship. Hammers and files of different small sizes are used in all the processes of work, depending upon the delicacy involved.

Rings, ear-rings, nose-rings and a few types of necklaces are generally studded with precious stones. The goldsmith makes sockets in the ornaments by chasing the surface to a depth sufficient to embed securely the stones in them. The stones are carefully and securely fixed in these sockets.

5. *Polishing*

This process needs considerable care. After finish, the article is thoroughly cleaned in a pickling bath. Thereafter it is rubbed with an emery paper which removes the film of oxide, if any. It is then washed in hot soapy water and dried. An application of polish on a chamois leather gives the article a brilliant glittering.

In order to produce quality jewellery, a piece is usually made by a single craftsman from start to finish.

The process of working on silver is similar in its broad detail to that of gold described in the preceding paras.

To make a vessel of silver, a sheet metal of required gauge is marked out and cut to correct size. After pickling, the sheet is brought to the shape of the vessel by being beaten with a hammer on a hollow block of wood. The piece is then placed on a steel or wooden stake and by further beatings with a hammer its shape is gradually perfected. The vessel by being beaten with a hammer on a hollow annealing at frequent intervals becomes quite a necessity to soften it. When the vessel is thus beaten into a perfect shape, it naturally carries on it the hammer markings. These marks are removed by beating with a special type of hammer having an almost flat steel face. This special hammer is so wielded as to secure a close overlapping of the flat marks it leaves on the vessel which are later smoothed over by a careful polishing.

In case soldering is necessary, borax is mixed with water to form a creamy paste and this paste is painted at the spots where the solder is required to run.

Articles produced

Due to World War II and its aftermath the price of gold and of precious stones reached unprecedented heights. This prohibitive cost necessitated economy and a taste developed fast for simplicity. Heavy ornaments of old, made of solid bar without any soldering to avoid a debasing of the metal, for a better store value than for appearance, went out of fashion. Sophistication, modern education and wider contacts with the outside world accelerated this change. It may be no exaggeration to say that

goldsmiths of Udipi were engaged after 1940 mainly in converting the old heavy ornaments into modern simpler pieces. The traditional jewellery in this region is now almost extinct. It is generally the financial ability that decides sinking of money in gold. While richer women deck themselves in gold, the poor can ill afford to do so. But even then, any Hindu lady will possess at least a "Thali" in gold. Such is the lure for gold in Indian society.

The following gold ornaments are made by goldsmiths of Udipi and they are commonly come across in all parts of South Kanara district.

Head ornaments

Jade Bille—It is a broach worn on the scalp or queue. It is round or heart shaped and studded with precious stones.

Ear Ornaments

Bendole or ear-rings.—The common patterns made are the following :—

Hamsa.—An ear-ring in the form of a swan, often set with jewels.

Sudarsana.— A wheel shaped ear-ring.

Parijatha.—An ear-ring in imitation of Nycthalnthes flower.

Bandha set and Kulla.—Ear-rings studded with precious stones.

Nakshatra.—Star shaped ear-rings studded with precious stones.

Rings.—Ring shaped ear-ring.

Step.—Ear-rings resembling a flight of steps.

Kenne Sarapali.—A chain worn from top to the lobe of the ear.

Neck ornaments

Kothambari sara.—A necklace consisting of hollow gold beads in the shape of coriander.

Batani sara.—A necklace consisting of hollow gold beads in the shape of peas.

Coffee beejada sara.—A necklace made by joining together a number of pieces in gold made into the shape of coffee seeds.

Rope chain.—A necklace resembling the shape of twisted rope.

Para chain.—A chain-work of oval shaped gold leaves.

Cycle chain.—A chain-work of gold leaves with serrated margin.

Mohan mate.—A necklace comprising of large gold beads string in a gold thread.

Godhi sara.—A chain work of gold pieces each shaped like a wheat grain.

Addige.—A chain-work of tiny gold rings.

Misri or Kasina sara.—A necklace made of gold coins. The coins are fashioned by the Jeweller himself.

Plate chain.—A necklace with diamond shaped gold leaves.

Sringara Karimani.—A chain made by linking pieces of gold resembling many varieties of vegetables.

Karimani Kanti.—This is a rope for the Mangalyam.

A few more designs of neck-chains are *Chakra, Radio chain, Flynig chain, Three-ring chain, Chandraleka and Mushti.*

Nose ornaments.—

Mooguthi.—A nose screw with a wheel or a stone.

Besari.—A nose screw studded with precious stones.

Nathu.—A large nose-ring (used by the Muslim ladies in the locality) held up by a chain attached to a hair by a hook to relieve the strain on the nose.

Wrist Ornaments.—

Bale or Banale.—They are of the same shape but of different designs. They are either plain or studded with stones or pearls.

Kompina bale.—Bracelet set with rubies.

Muthina bale.—A bracelet resembling a band of pepper grains.

Bentex.—A bracelet shaped to resemble wrist watch chain.

The other designs of bracelets are *cutting bale, Sindhikatti, Bombai bale, Misri, Mangamma, Vasantha, Bridge, Tayar, Jangiri, golsu, Vajra, Choode, Suragi* and *Mungai.*

Finger ornaments.—

Ring or ornament for finger is called *Ungura.* Rings are made in different designs.

Plain Ungura.—A plain ring with no extra material such as enamel or stones.

Haralungura.—A ring set with precious stone or stones.

Shanka Ungura.—A conch shaped ring with or without stones.

Rekend.—A engagement ring used by the Christians of the locality.

Ody ungura, oval, metro, step, bandh ring are a few more designs of rings.

Apart from these, another important ornament made is *Thali* or *Mangalya,* a pendant adorning the neck of married women as a symbol of married status.

The silver articles produced by the jewellers are *Kalungura* and *pilli* (toe-rings worn by married women), *Kalu sarapali* (a chain for anklet) *Udu-dara* (a waist band for boys), *Sooji* (hair-pin), *Gejje* (anklet with pendants which clink together when the wearer walks), 'Bale' (bracelets worn by women in the lower income group of families), *Thayati* (mascot or talisman), *Harake Samanu* (tiny articles such as vessels, ear-rings, necklaces, belts, bangles and bracelets and many others for offerings by devotees to temples in fulfilment of vows) and *Murthi* (small size images of Hindu gods and goddesses). Further, household utility articles such as cups, plates, dishes, tumblers, etc., are made which are largely used by people of affluence. They are also used as gift pieces on wedding and other ceremonial occasions.

CHAPTER III

ECONOMIC AND GENERAL ASPECTS

Cost structure

It is rather difficult to furnish the cost structure relating to this craft in Udipi, as articles here are made to order, and not for sale as is done by Shroffs in larger centres. The chief raw materials *viz.*, gold, silver and precious stones are mostly supplied by the customers themselves. It is sometimes possible that customers may advance money for their purchase. According to the local craftsmen, their main job is conversion of old ornaments into new. Orders for making them from fresh gold are rare. They make the jewel according to specification and receive wages therefor, the amount depending upon the design and intricacy of the work involved. The making charges of a few items are enumerated below :

		Rs.
Rings	..	3 to 4
Bangles	..	6 to 35
Neck chains	..	8 to 12
Necklaces	..	25 to 50
Ear-rings	..	3 to 12
Nose-rings	..	2 to 3
Jade bille (hair pins)	..	10 to 15

The jewellers meet minor expenditure on chemicals, fuel and such other petty items.

The concerns which maintained workers on wages have after the advent of the Gold Control Order closed down their working units. There is no establishment now working with hired labour. The craft is carried on by household labour.

Out of the 58 establishments, 20 are working in rented shops, one is having its own workshop and the rest work in their respective household premises. The total amount of rent paid by these establishments per annum is about Rs. 2,400. The total investment on tools and equipments of all the establishments is about Rs. 12,000. Materials such as chemicals, etc., in stock with them account for another Rs. 3,000. They are not in a position to invest on gold or silver.

Households of Craftsmen

In Udipi, there are 48 households of Daivajna Brahmins, of whom 36 are engaged in their hereditary occupation and 12 in other trades. In these 36 households 65 persons are engaged in the work of goldsmithy. Eighteen of these households consists of single workers, 10 of 2 workers, 7 of 3 workers and one of 5 workers. Nineteen of the households run shops in different areas of the Bazaar and the other 17 work in their own houses.

There are 22 households of Viswa Brahmins engaged in the craft and the number of workers in them is 28. Two have rented workshops and the rest do the work in their own house.

Only the male members are engaged in the craft, and female members keep out. A total of 93 persons in the 58 establishments are jewelsmiths.

The craftsmen in this centre have no defined holidays. They do not, however, work on festive days and other important occasions. Want of work may also keep them idle for some part of the year.

A craftsman in this trade earns on an average Rs. 3 to Rs. 4 a day depending upon the orders secured. This compares favourably with the earnings from any other craft in the locality.

CHAPTER IV

CONCLUSION

In Udipi, the jeweller's craft is of a peculiar nature. The traditional craftsmen, whether they belong to Daivajna Brahmins or Viswa Brahmins are painstaking, efficient and experts in their field. They are capable of producing an exact replica of any given design, but only lack originality. No goldsmith of the locality has been able to produce any new design till now which has become distinctive or significant of the town. They have their training at home.

This study was made after the coming into being of the Gold Control Order. This order imposing, as it did, severe restrictions on the acquisition and possession of primary gold became necessary as a result of an increased tendency in smuggling, hoarding and speculations noticed among a wide net-work of racketeers in this metal. The discrepancy between the official international price and the market price of gold made the risk a worthwhile and paying proposition. Under the Gold Control Order originally promulgated the use of more than 14ct. purity metal for jewellery was made an offence. Most of the craftsmen practised to work only with 22 ct. gold found the change irksome and many lost their livelihood. Rehabilitation programmes were set afoot quickly to alleviate their distress, but even they made little impression, and the plight of the jewellers continued to be deplorable. Later owing to incessant pressure brought to bear on Government from various quarters, the order was liberalised and its rigours reduced by a series of amendments. Though there is no restriction now on using gold of higher purity for making ornaments, it has to be melted and refined in an authorised refinery only. The middle man between the owner and the customer who formerly constituted an important and traditional link has practically disappeared. The sweeping changes that have been brought by law in the age long customs and practices have given the industry a violent jolt. The information gathered particularly concerning the economy of the trade is found to be far from satisfactory. Hence no elaborate discussion of the economic aspects has been attempted in this monograph.

As has already been stated the wearing of gold ornaments in India is necessary not only for personal embellishment of the fair sex generally, but also because religion and superstition enjoins their wear. This socio-religious compulsion has been responsible for the workers yet to obtain some orders for making jewellery, despite the restrictions of law. It is on this account that they have been able to stick to their traditional avocation, and make at least a marginal living.

JEWELLERY

APPENDIX I

LIST OF GOLDSMITHS IN UDIPI WHO ARE ENGAGED IN THE TRADE

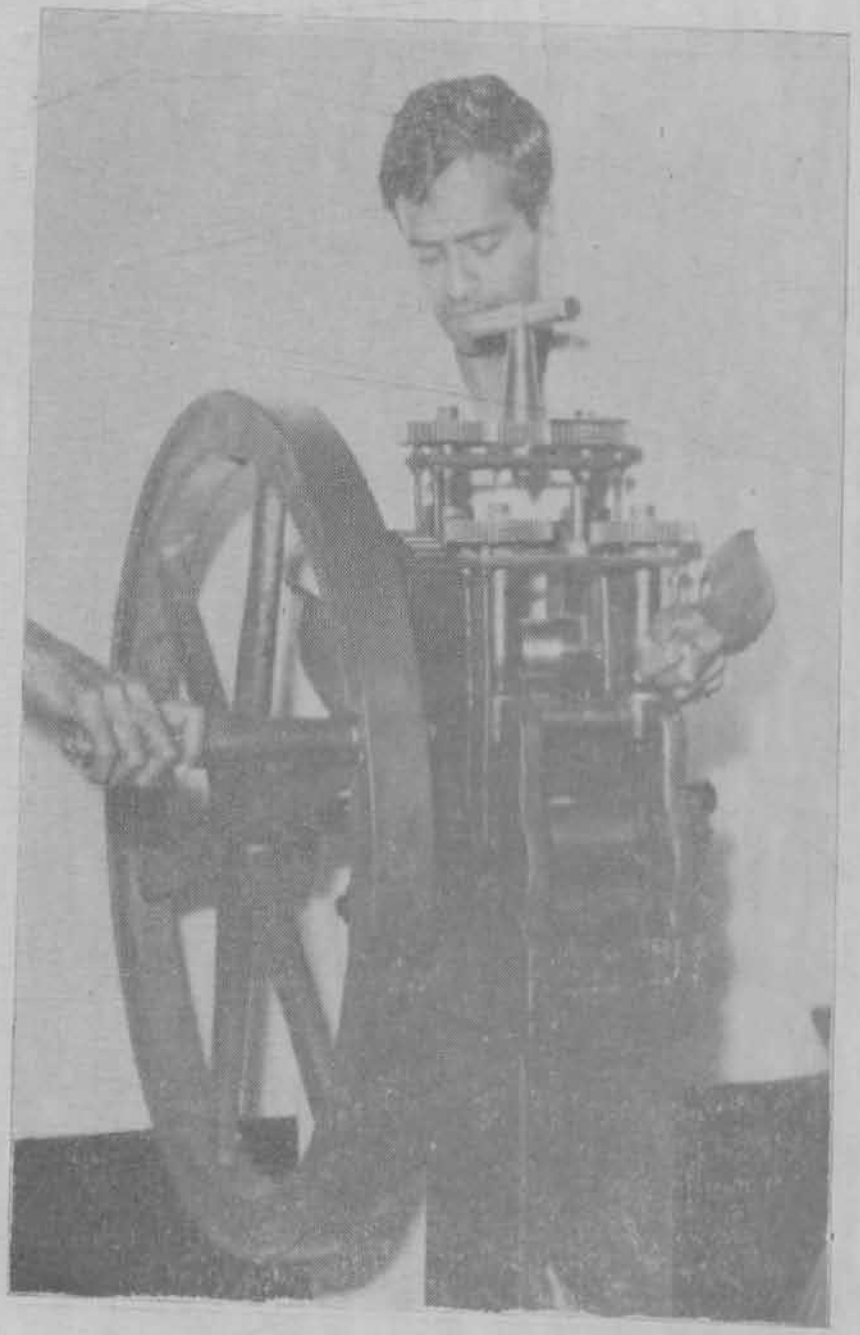
Sl. No. of Household	*Sl. No. of Worker*	
		Daivajna Brahmins
1	1	M. Rama Shet
2	2	C. Subbaraya Shet
	3	Sundar Shet
	4	Kumaraswamy
3	5	Sankaranarayana Shet
4	6	Gopal Shet
	7	Srinivasa Shet
	8	Somasekhar Shet
5	9	Krishna Narayana Shet
	10	Bhaskar Shet
6	11	Bhavani Shankar Shet
	12	Shantaram Shet
	13	Sunder Shet
7	14	K. Sanjeeva Shet
8	15	Madhava Shet
	16	Gajanana Shet
9	17	Laxman Shet
10	18	S. Padmanabha Shet
	19	Kogga *alias* Annappa Shet
11	20	Chandrasekhar Shet
	21	Sunder Shet
	22	Keshava Shet
	23	Subbaraya Shet
	24	Gururaja Shet
12	25	Kone Manjunatha Shet
	26	Vasudeva Shet
13	27	V. Krishna Shet
	28	Sadananda Shet
	29	Damodara Shet
14	30	S. Anantha Shet
	31	Bhaskar Shet
15	32	S. Panduranga Shet
16	33	Srinivasa Shet
17	34	Pundalika Shet
18	35	Gopalakrishna Shet
19	36	Nagesh Shet
	37	Gopal Shet
20	38	V. Shivaraya Shet
	39	Ramananda Shet
21	40	Nagappa Shet
	41	Srinivasa Shet
	42	Bhaskar Shet
22	43	Narasimha Shet
	44	Bhaskar Shet
23	45	Manjunath Shet
	46	Panduranga Shet
	47	Subbaraya Shet
24	48	V. Rayappa Shet
25	49	V. Krishna Shet
26	50	V. Mohan She
27	51	M. Sandar Shet
28	52	Dattatreya Shet
29	53	K. Rama Shet
	54	Laxmana Shet
30	55	Jalandar Shet
	56	Balakrishna Shet
31	57	S. Rama Shet
32	58	Krishnanahada Shet
33	59	U. Vasudeva Shet
	60	Vadiraja Shet
	61	Ram Shet
34	62	V. Vasudeva Shet
	63	Bhasker Shet
35	64	H. Rama Shet
36	65	Ganapathi Shet
		Viswa Brahmins
1	1	H. Venkataramanachar
2	2	K. Sridharachar
3	3	K. Mohanachar
4	4	B. Sanjivachar
	5	B. Vamanachar
5	6	M. Seshappachar
6	7	M. Bhadraiahachar
7	8	S. Narayanachar
8	9	P. C. Vasudevachar
9	10	V. B. Vasudevachar
10	11	M. Sankarayachar
	12	M. Ganapathachar
	13	M. Sadashivachar
11	14	P. M. Damodarachar
12	15	Y. Vamana Rao
13	16	K. Janardhanachar
	17	K. S. Sridharachar
	18	K. S. Harishchandrachar
14	19	M. Srinivasachar
	20	M. Harischandrachar
15	21	M. Ananthachar
16	22	K. Shivappachar
17	23	K. Padmanabhachar
18	24	P. Ganapathachar
19	25	K. Devappachar
20	26	K. Narayanachar
21	27	K. Janardanachar
22	28	T. Sridharachar

Trading units—

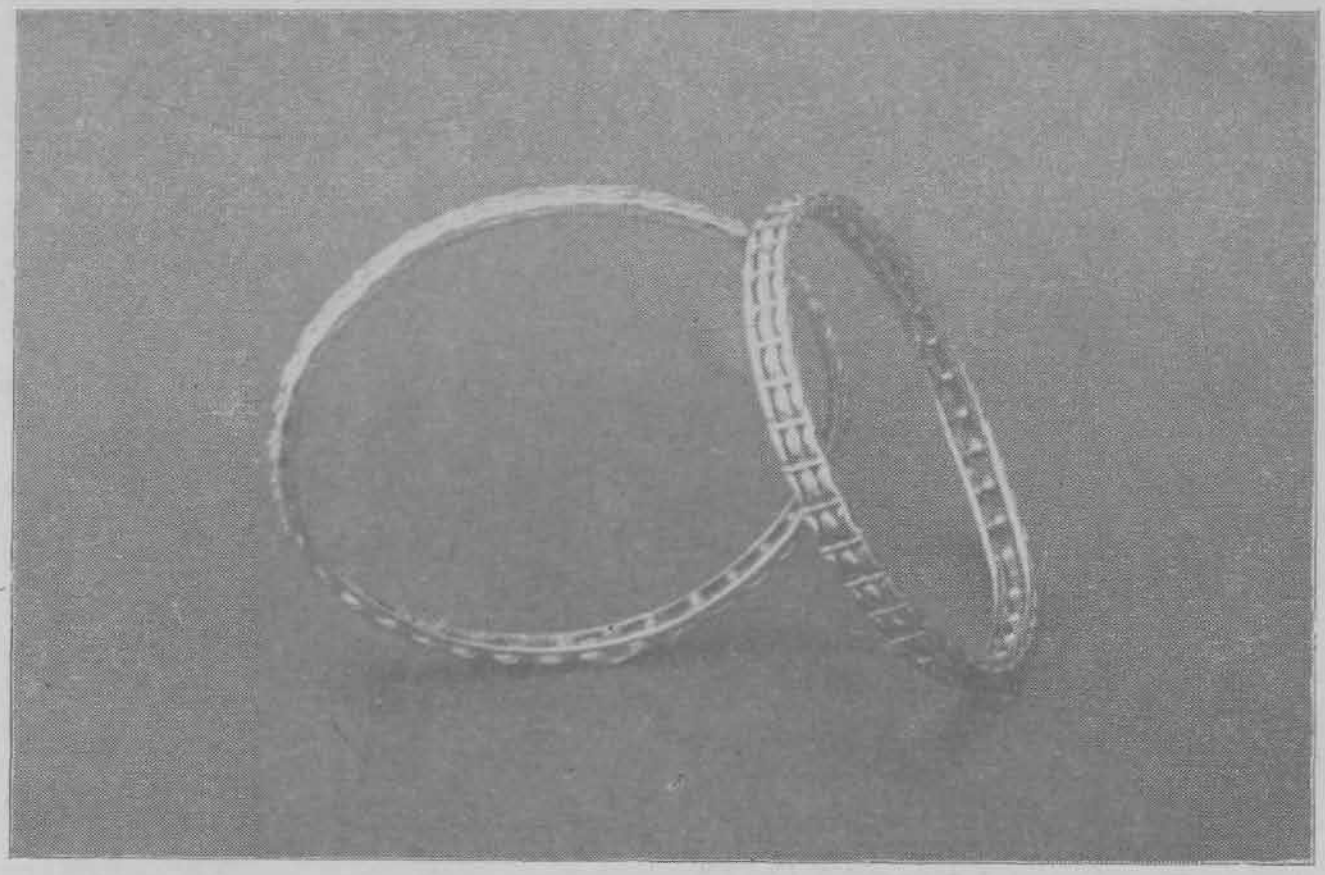
1. **Durga Jewellery, Tenkapet, Udipi.**
2. **Krishna Jewellery Mart Udipi.**
3. **Novelty Stores, Car Street, Udipi.**



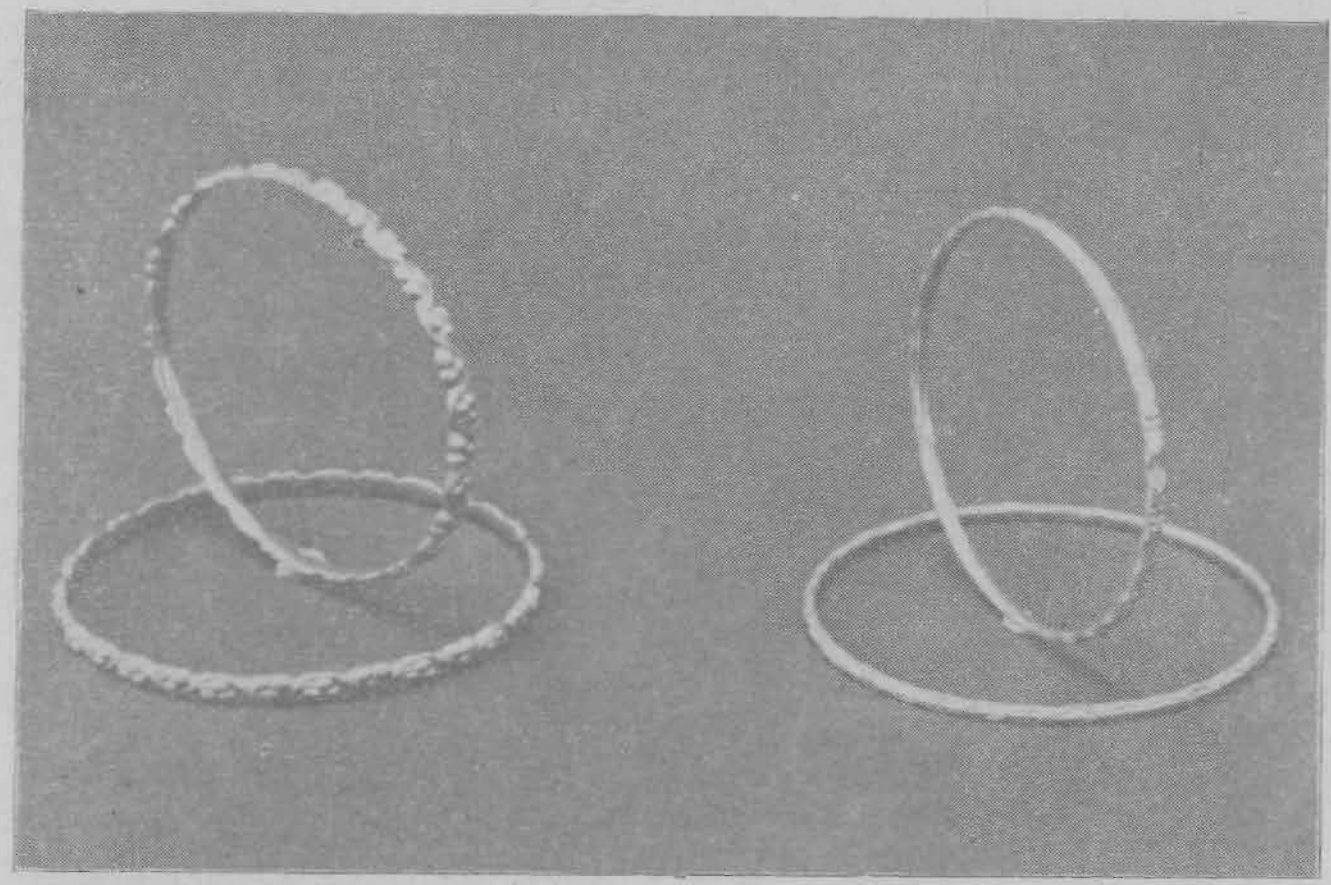
1. Goldsmith at his anvil



2. The wire drawing machine



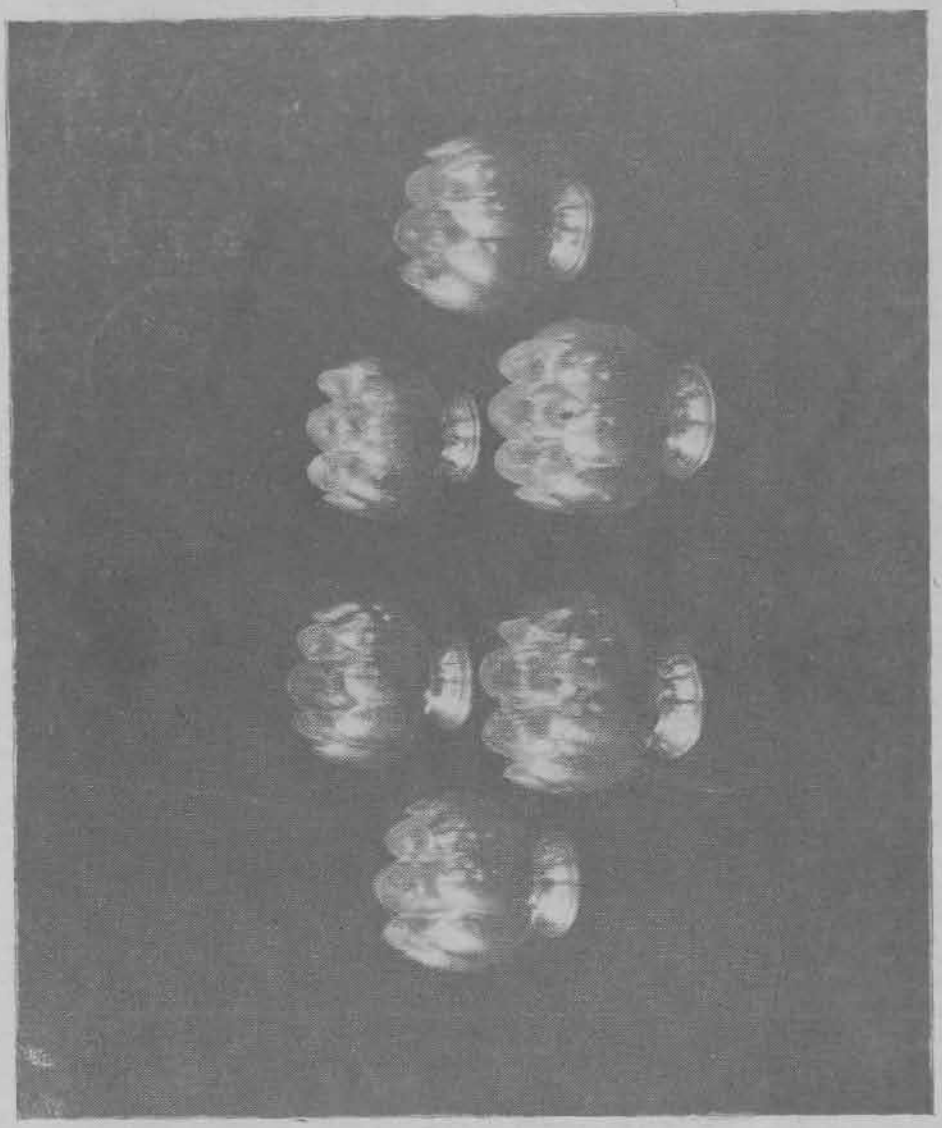
3. A Pair of gold bangles in bentex design



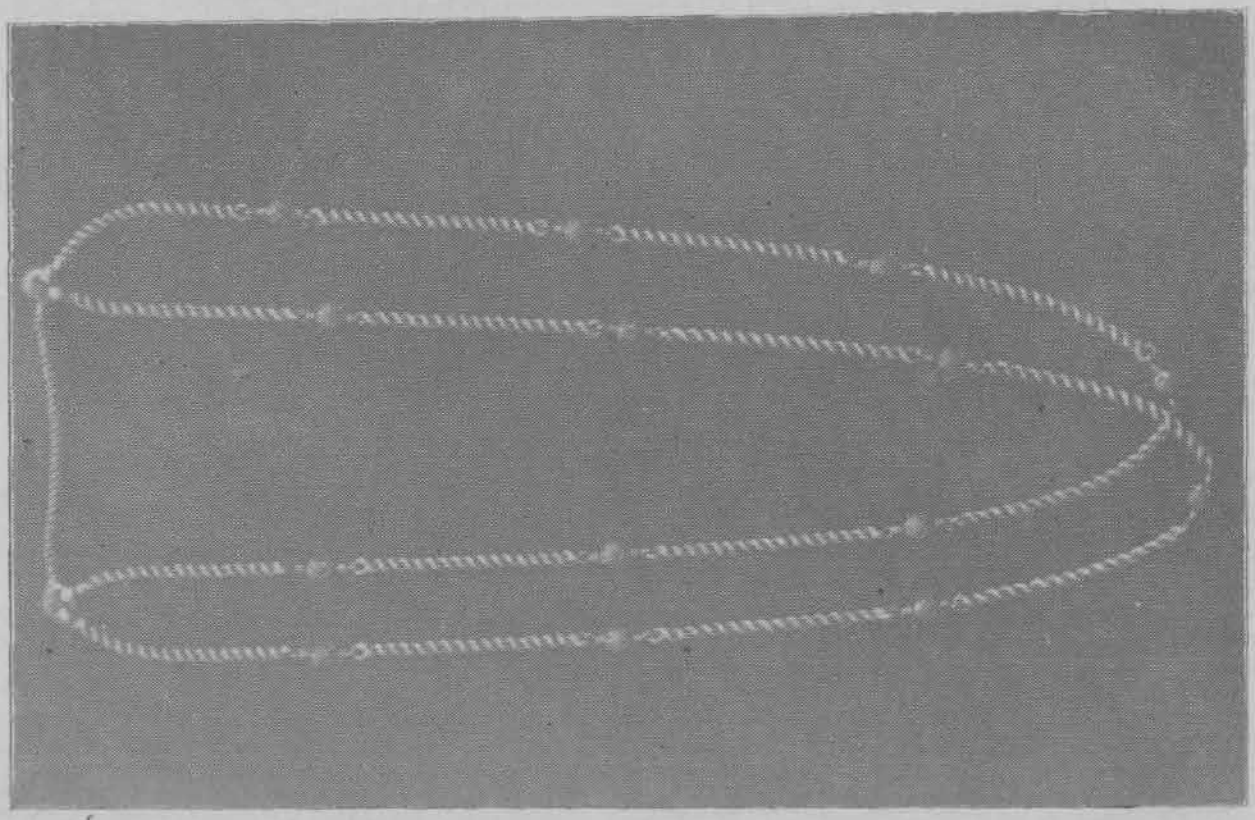
4. Two pairs of gold bangles

6. Cycle chain necklace

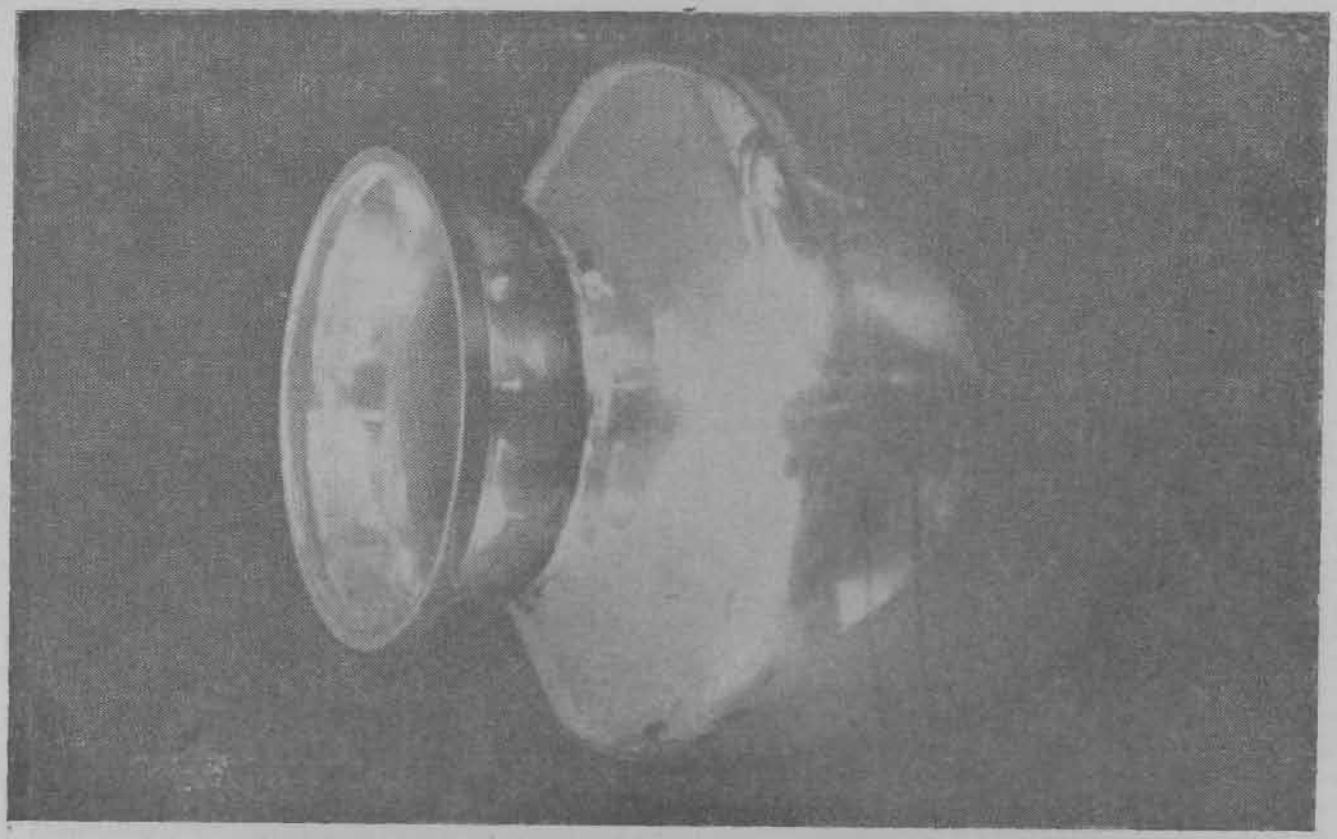
5. Gold necklace – *Multina Sara*



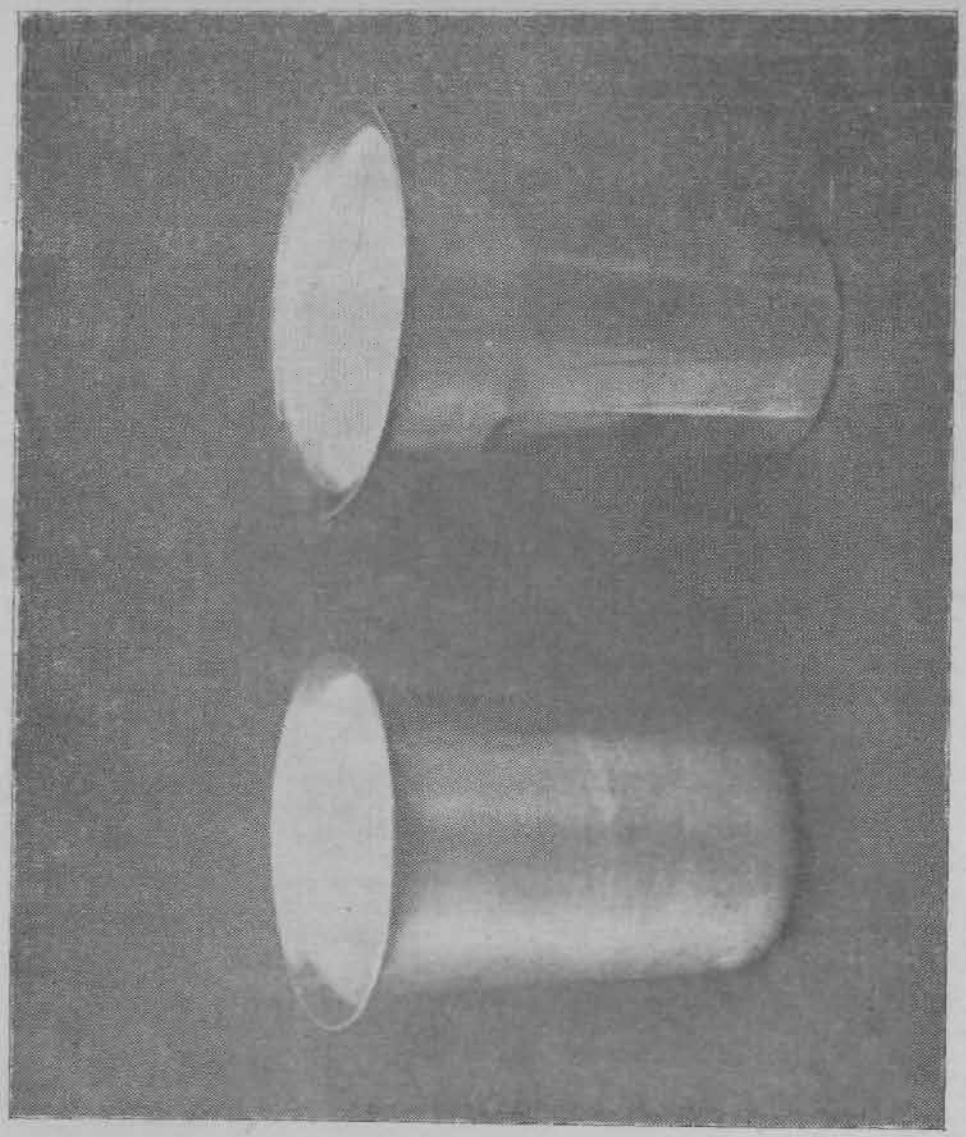
8. Lotus shaped *Kumkum* cups of silver



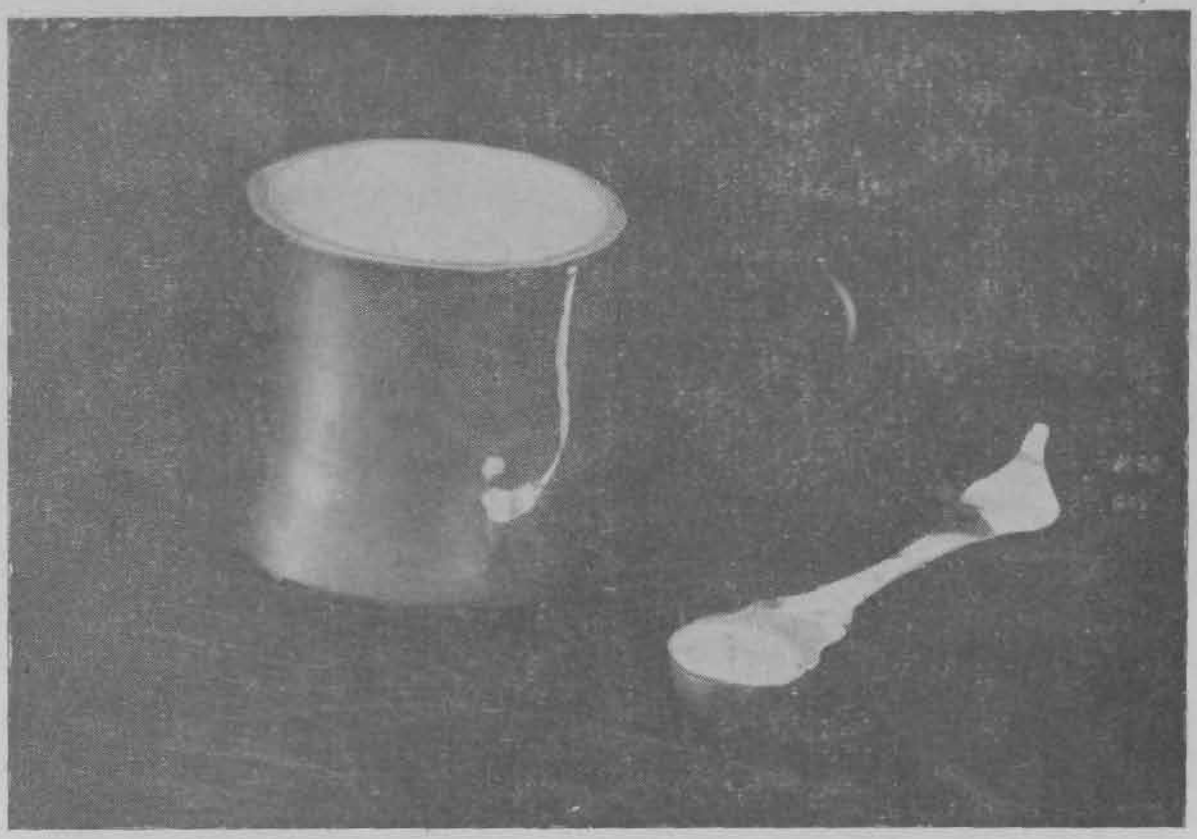
7. Necklace—Rope pattern



10. *Chambu*, a small silver pitcher



9. Silver tumblers



11. Silverware—*Panchapatra* and *Uddarane* (a tumbler and a small laddle) used by Brahmins and a few others during *Sandhyavandana* prayers and other religious occasions.



12. A bowl like container of silver which can be used for keeping vermilion or turmeric dust or coloured rice or for holding water offered as oblations.