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CENSUS OF INDIA 1961

VOLUME II

ANDHRA PRADESH

PART VII-A (2)

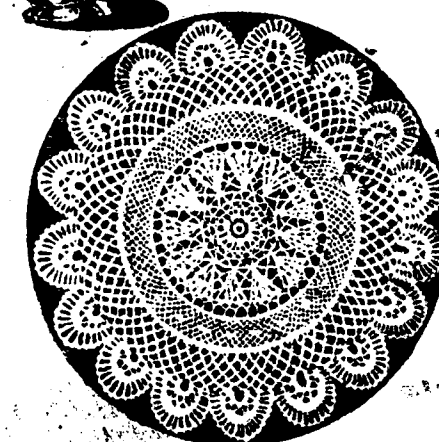
SELECTED CRAFTS OF ANDHRA PRADESH

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K. V. N. GOWD, B. Com. (HONS.)
ty Superintendent of Census Operations, Andhra Pradesh.

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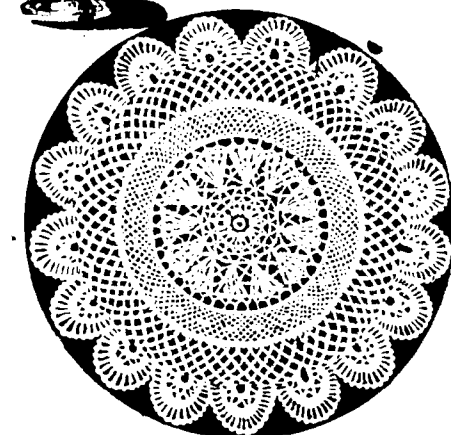
ANDHRA PRADESH

PART VII-A (2)

SELECTED CRAFTS OF ANDHRA PRADESH

K. V. N. GOWD, B. Com. (HONS.)

Deputy Superintendent of Census Operations, Andhra Pradesh.



1961 CENSUS PUBLICATIONS, ANDHRA PRADESH

(All the Census Publications of this State will bear Vol. No. II)

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PART I-B	..	Report on Vital Statistics	
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District Census Handbooks (*Separate Volume for each District*)

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 on 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 limitations 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 18 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 Panchayats. 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 time 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 finalizing 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 proximity 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 their wares and the sizes to which these were ordinarily restricted either by the limits of their own skill or the length of their customers' pursestrings. 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 of 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 investigators toward 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.

P R E F A C E

In the Foreword the Registrar General, India has been good enough to set out in detail the genesis of the Rural Craft Survey undertaken by the 1961 Census Organisation.

This is the second volume of descriptive monographs on the selected crafts of Andhra Pradesh. In his Preface to the first volume published as Part VII-A (1) the Superintendent of Census Operations dwelt on the methods we adopted and conducting the survey in this State and in presenting the data in the District Census Handbooks and also in other tables retained in the Census Office for the reference of any interested scholar. The first volume containing a good number of illustrations covered the following crafts in detail :

- (i) Filigree Industry of Karimnagar
- (ii) Leather Puppet Dolls
- (iii) Kalamkari Temple Cloth Painting of Kalahasti
- (iv) Kalamkari Cloth Printing of Masulipatnam
- (v) Woollen Pile Carpet Industry of Warangal and Eluru

The monographs were the outcome of the keen interest evinced by Sri A. Chandra Sekhar, I.A.S., Superintendent of Census Operations and the detailed study he made including the minutest particulars regarding each of these very reputed and exquisite handicrafts of Andhra Pradesh. The present volume consists of the monographs prepared by me on the three crafts, namely, (i) Crochet Lace Industry; (ii) Studded Bangles of Hyderabad City; and (iii) Brass and Bronze Industry. In more ways than one these crafts also are outstanding in the State and they are intertwined with the domestic lives of the people. The articles prepared in these crafts are not pieces of luxury, decoration or ornamentation but are things of everyday use within the reach of the common man except, of course, some of the small bronze icons which can be the first choice of discerning lovers of handicrafts anywhere.

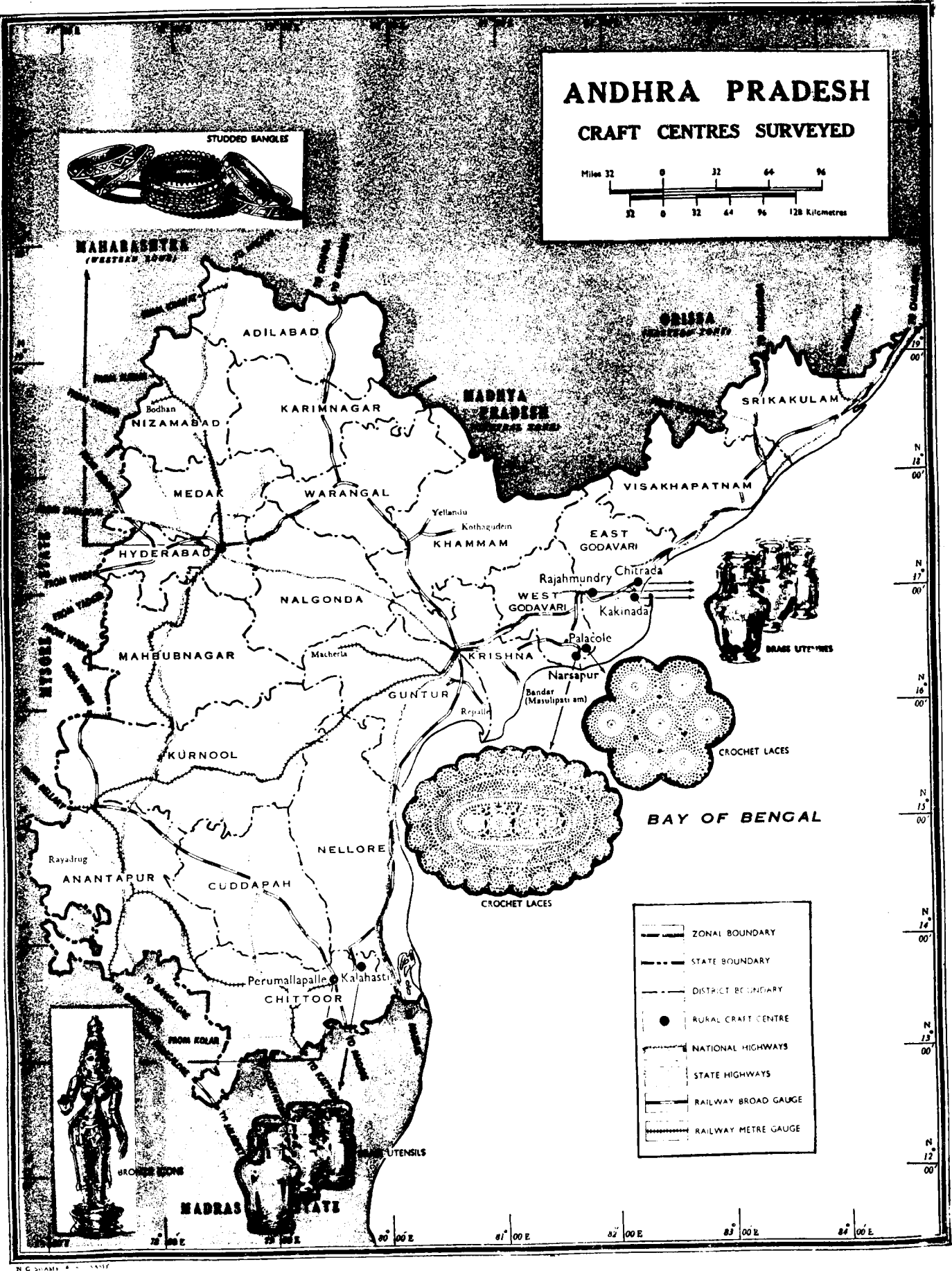
I have endeavoured to present in a simple way a detailed account of the production processes, the articles turned out, their sales and marketing, the economic conditions of the craftsmen, etc., as observed by me during the visits to these craft centres. The crafts covered by the present volume and its precursor are only a few of the several renowned and beautiful crafts that Andhra Pradesh is noted for. We could not go in for more studies because of the limitation of time. The State can boast of many other crafts like Handloom cotton and silk weaving, Himroo shawls, Nirmal paintings, wooden toys, red sanders wooden toys, Bidriware, horn and tortoise shellwork, ivory inlays, etc. Interested scholars would certainly like to study them.

I am highly grateful to Sri A. Chandra Sekhar, I. A. S., Superintendent of Census Operations, Andhra Pradesh who was kind enough to supervise this work from its very inception by finding time amidst his onerous duties to go through the various stages of the draft report. But for his imaginative touch here and there and his constant encouraging words, it might not have been possible for this volume to be completed; and I owe a deep debt of gratitude to him. My thanks are also due to Sri A. Mitra, I. C. S., Registrar General, India, and Dr. B. K. Roy Burman and Mrs. Ruth Reeves of the Registrar General's Office for all their guidance.

I wish to express particular appreciation of the work of the Research Assistant, Sri T. V. S. Ramachandra Murty in the field survey and in preparation of the material for the drafts. I have also been assisted by the Section Head, Sri Y. Ranganna and by the Tabulation Officer, Sri P. Pattayya. I also appreciate the services rendered by the Artists Sri M. Krishnaswamy and Sri P. Subba Rao of my office. The printing was supervised by Sri P. A. Krupanandam, Supervisor.

K. V. N. GOWD,
*Deputy Superintendent of Census Operations,
Andhra Pradesh.*

State Map Showing the Craft Centres Surveyed



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(i) CROCHET LACE INDUSTRY

Map Showing Important Villages of Crochet Lace Industry

thread used for crocheting is invariably imported from other places, notably from Bombay.

7. It is estimated that the number of total women workers in this industry is 80,500. Members of all communities practise this art of crochet lace making. Agnikula Kshatriyas were many among the people who were first taught this craft in the last century. These are of the fishermen community. The income from fishing being meagre, the majority of the families depend upon the earning of the women-folk from lace-making. Therefore, it is only natural that people of this community have developed a great interest in the craft to the extent that they are credited with inventing several additional designs. Telagas and Christians are the two other chief communities which are engaged in the craft. Many of the exporters' firms are owned by the Telaga community. Several persons from the families of Christian workers go about the various

industrial and tourist centres of India for hawking in the lace goods, thus promoting sales within the country.

8. As regards the composition of the workers belonging to the various communities, it is said that Agnikula Kshatriyas form roughly 30%, Telagas 25%, and Harijans 5%. The remaining 40% among the total number of workers come from the other castes namely, Brahmins, Vaisyas, Kshatriyas, Muslims, Weavers, Settibalijas, Gowdas and Reddis. The workers in Narsapur town alone are about 7,000, of whom Agnikula Kshatriyas number roughly 1,400 (20%), Telagas 2,100 (30%), Christians 1,750 (25%), Weavers 350 (5%) and others namely, Brahmins, Vaisyas, Muslims etc., 1,400 (20%). Agnikula Kshatriya families are concentrated in Ponnappalle locality of Narsapur town. The other areas, Kotavaddapalem, Ankanivaripalem and Mokavaripalem also are populated with them.

SECTION II

ORIGIN AND HISTORY OF THE INDUSTRY

9. The craft of crochet lace-making is believed to have been introduced into this coastal part of the country by the Christian missionaries in the beginning of the second half of the 19th century. According to Census of India, 1931 - Vol. XIV Madras - Part I - Report, it was a disappearing industry and said to have been introduced about the end of the 19th century. An excerpt from the Census Report is given as Appendix I to this monograph.

10. The late Mr. Macrae from Scotland, who was said to have been related to the British Royal Family, was the head of the Christian mission of the Godavari central delta during that period, with headquarters at Amalapuram in East Godavari District. The late Mr. Macrae, who had given away all his wealth for religion and whose zeal and enthusiasm for missionary work were exemplary, led a very austere life, identifying himself with the indigenous population of the places in which he carried on his work. Mr. Macrae with his wife used to visit Narsapur very often during the course of their religious activities. Some handful of women belonging to the poorer strata of the society at Narsapur were first taught this art of lace making by them and that year, which has become memorable in the subsequent rise of crochet lace making industry, was 1861-62. At that time, none would have foreseen the bright commercial value that the laces of Narsapur acquired in many countries in later years.

11. Mr. Macrae's main purpose in training the women in the crochet lace making seemed to be to provide gainful employment to the poor women, who were thereby enabled to supplement their family

income. And, it is a tribute to the skill and dexterity of the womenfolk that, to this day, even after 100 years, the craft has remained in the hands of women. The finished goods used to be sent to eminent personages in the foreign countries as gifts and presents; and sometimes these articles were also arranged to be sold there. The money that was realised from the sale of the lace articles was remitted back. And, these remittances formed the return to the women engaged in the production of crochet lace articles.

12. It was natural that some of the women who were engaged in the lace making under the patronage of the missionaries gradually came under the influence of Christian faith, to which they were converted. The introduction of lace making art thus seems to have served a dual role. The desire to supplement one's own income by working on lace products with the help and assistance of the Christian missionaries became an incentive to poor people of the area to co-operate with the activities of these Christian missionaries, who capitalised on this opportunity to induce the families of lace workers to embrace Christianity. The industry gradually spread to more and more families and villages, and as it spread so too did Christianity.

13. The art of crochet lace making assumed the form of commercial production somewhere in the second decade of the present century. Sales started with commercial motive and trade increased as well as production of the goods. Orders began to be received from several importers abroad on a regular basis.

SECTION III

TOOLS AND MATERIALS

14. The means by which lace articles are crocheted are extremely simple. The only tool used for lace-making is the crochet needle and all that is involved is the skilful operation of the needle by the human hand.

15. The crochet needle is a steel spoke of about 125 mm. in length and with a 3 mm. thickness at the head. The head is round. A space of about 15 mm. in the lower half of the needle is flattened to enable the needle to rest on the tip of the finger while knitting. The needle narrows off to the end. And, at the end it has a hook which is called crochet. The hook is the mainspring of operation of lace making, and, the industry is therefore called crochet lace industry. (Please see the sketch C, in Plate 1 illustrating the crochet needle). The cap of the needle protects the hook whenever it is out of use.

16. The needles made of steel, which in the past were imported from Manchester, are now made in India. Sometimes, the needles are also made indigenously with spokes of worn out umbrellas.

17. The present cost of a needle is 40 P., and the improvised ones can even be procured for 10 P. One crochet needle used for knitting lasts for several years; hence the expenditure to be incurred by the artisans on the tools is practically nothing.

18. The raw material required for production of the crochet lace articles is only the thread. The thread is woven with the hook of the crochet needle into loops and chains of loops in the shapes of the required designs. The thread used is mercerized cotton thread of superior quality. It is double twisted. In the earlier days, it was used to be imported from Manchester, England. The thread now used is the one manufactured by M/s. Alexander and Finlay Thread Company, Bombay, J. & P. Coats, Madras, Narothamdas & Sons, Bombay, Visramdas Bhagwandas & Co., Bombay and C. Narothamdas, Bombay. Most of the supplies of thread come from the first concern and theirs is called diamond thread.

19. The diamond thread of M/s. Alexander and Finlay Thread Company, Bombay is available in the form of cards of 91.5 and 183 metres each. A card

is a thick piece of paper or paste board of about $2\frac{1}{2}$ " x $1\frac{1}{2}$ " size around which the thread is wound to be a convenient unit. The other companies produce the threads in the shape of bobbins also. The cards or bobbins of threads should be of convenient size for easy handling and quick disposal. Bobbins in the past held 2,000 yards, with the result that by the time it was exhausted, the thread was dirty from so much handling. It may not be out of place to mention in this connection that as the handmade laces are not washed or cleaned before sale, it is necessary to see that the thread does not get soiled or dirty during the course of crocheting or afterwards. It is perhaps this reason, more than any other, that accounts for the craftswomen, whenever they find time in the midst of their household duties to make laces, washing their hands quickly with soapnut every time they take to the needle.

20. The counts of the thread are 10, 16, 20 or 24; the thread mostly used and which makes finished articles look very elegant is of count 20. (Count indicates the thickness or fineness of the thread—lower count means thicker thread.) The cost of the white thread of count 20 at the time of study is at Rs. 12 per gross (144) cards of 91.5 metres (100 yards) each. Ecru and coloured threads cost 0.50 P. extra. The cost of the thread of count 10 is Rs. 17.00 per gross cards and there would be no colours in count 10.

21. One Sri Chaganti Satyanarayana is the stockist of the lace threads at Narsapur. He says that out of the total of Rs. 1.34 lakhs worth of thread dealt with by him in the year 1962-63, the thread supplied by M/s. Alexander & Finlays alone had amounted to Rs. 1.29 lakhs, the balance being supplied by M/s. J. & P. Coats. The total consumption of thread in the Palacole Narsapur area for the production of lace is estimated at about the value of Rs. 10.00 lakhs a year.

22. The thread used is of several colours—white, ecru, green, red, cream, gold, pink, blue, maroon, violet, etc., but usually white thread constitutes the bulk of the produced articles. Next comes ecru (colour of unbleached linen). Other colours are used for decorative motifs and for designs of flowers etc. in the laces.

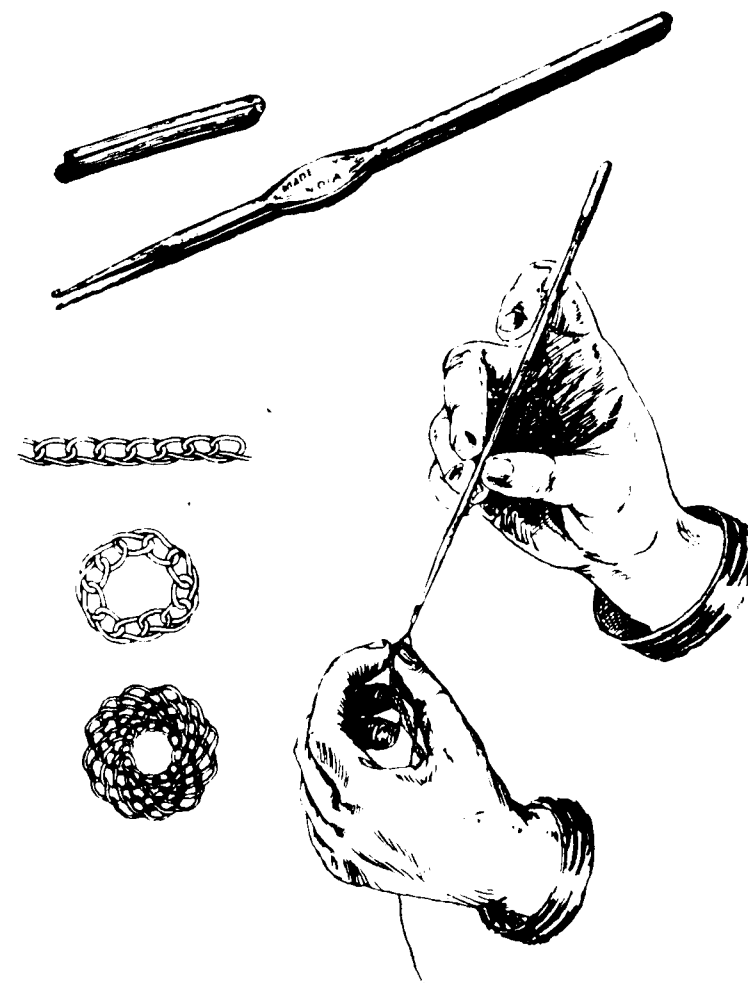


Plate 1. The needle and its position.

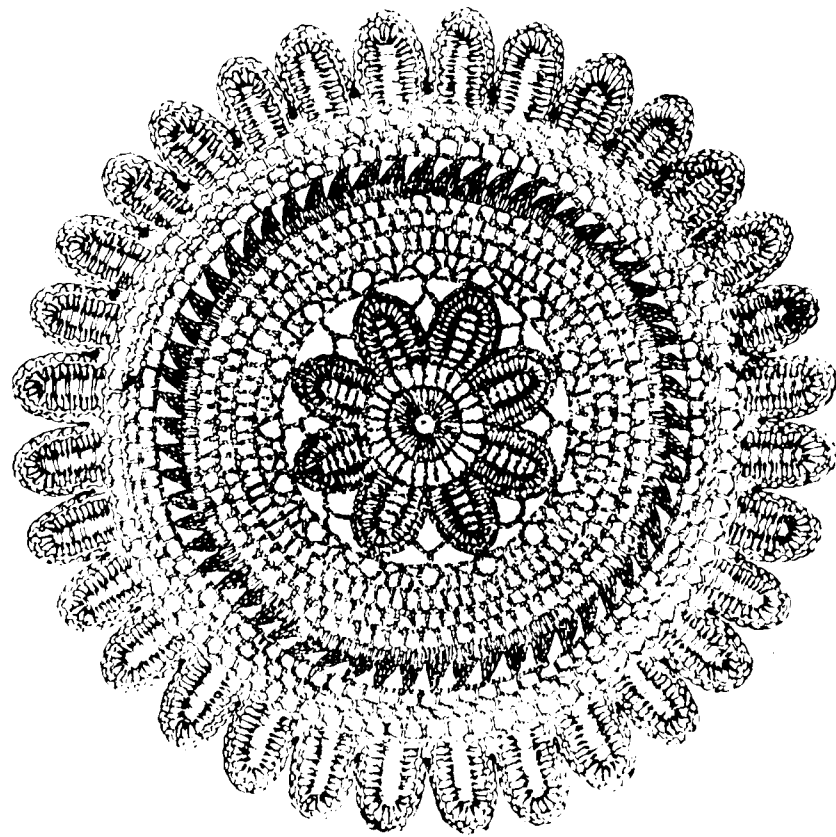


Plate 2: A chatipani or handwork lace
liripu

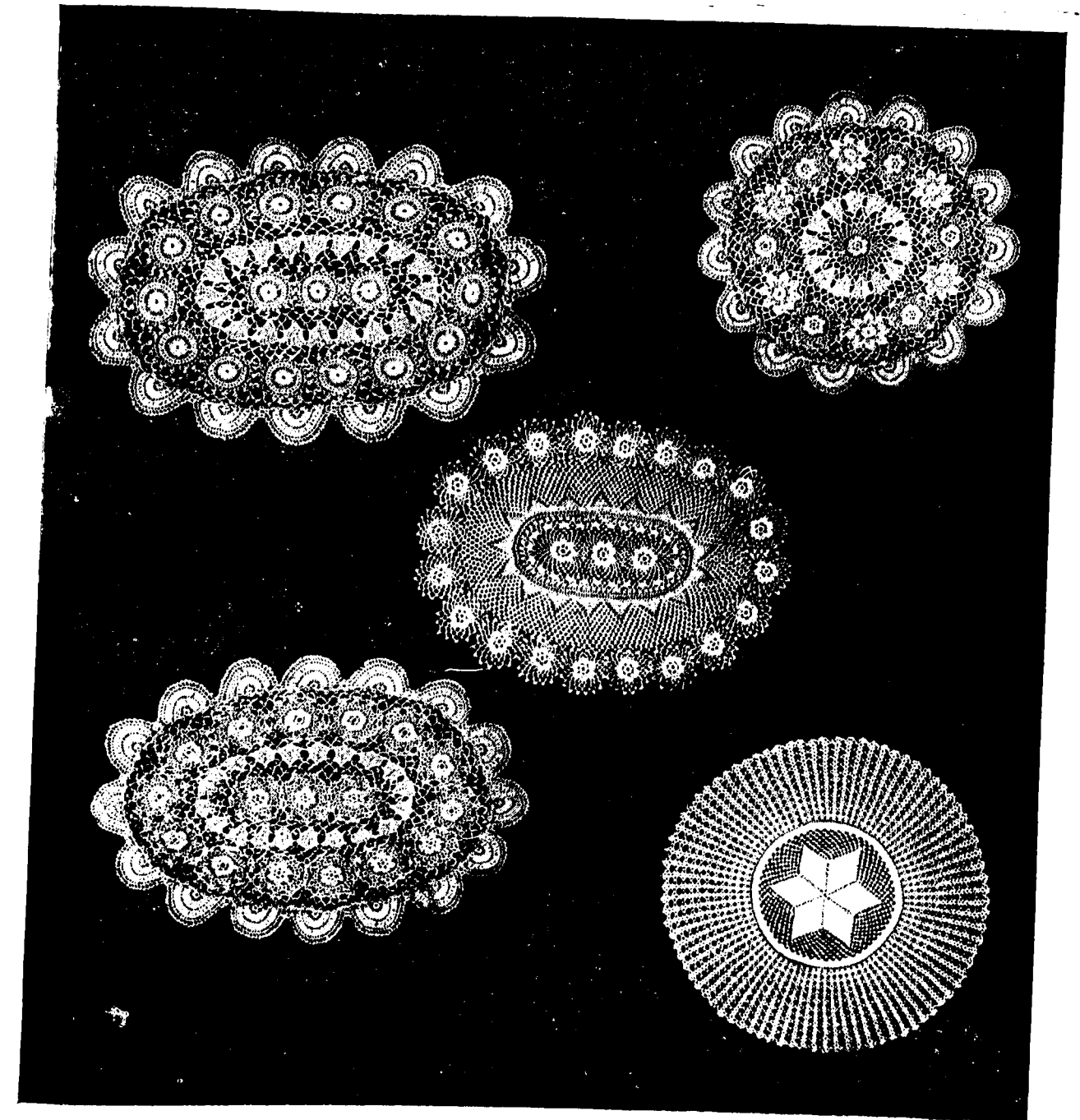


Plate 3. Specimens of ahukapuni lace designs.

SECTION IV

PRODUCTION PROCESS

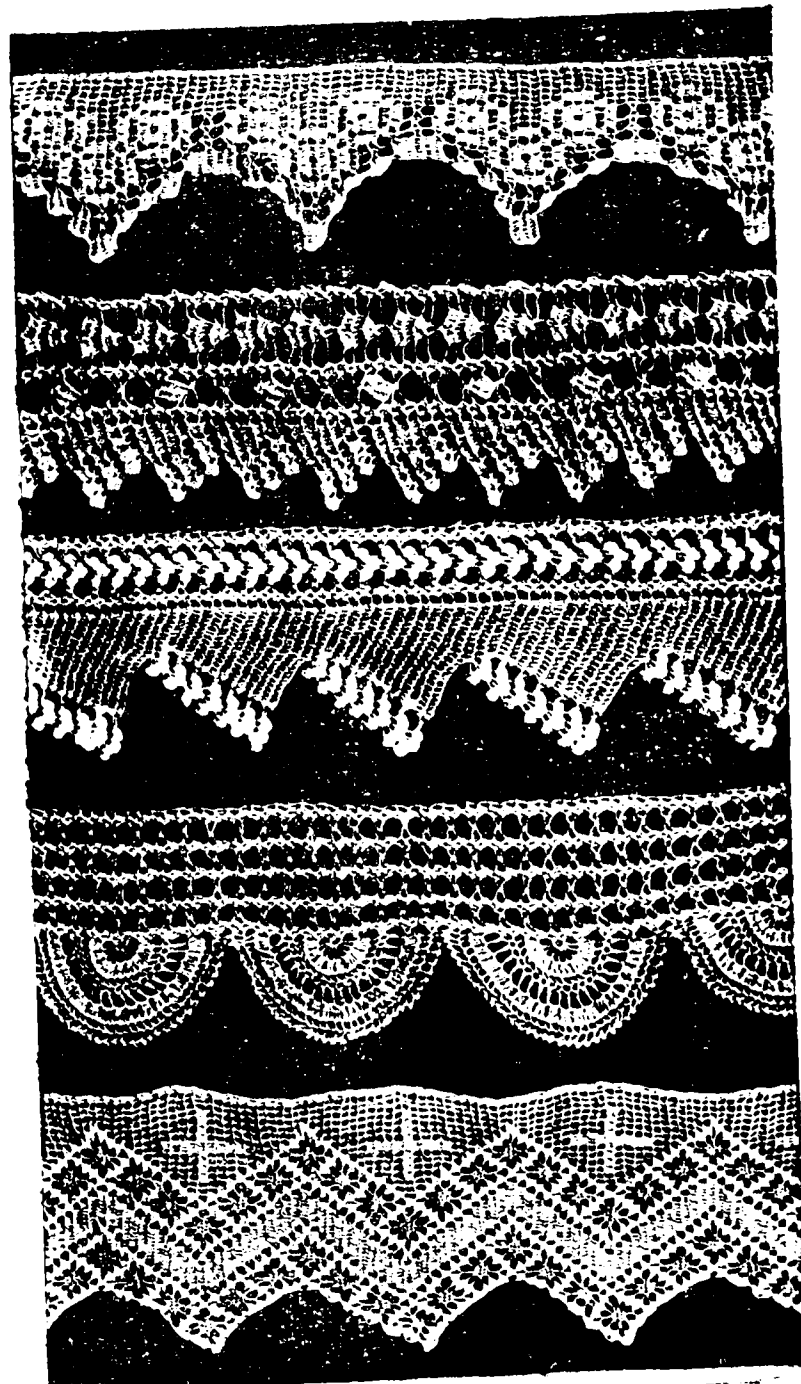


Plate 4. A few crochet lace border designs.

23. The craft of crochet lace involves no elaborate process. The craftswomen knit the laces with the crochet needle. The hook of the needle is the chief instrument around which the whole process of lace-making revolves. The basic process is explained below.

24. The thread is held in the left hand resting on the forefinger. The outer end of the thread is held with the middle finger and thumb. The inner thread goes from the back of the fore, middle and ring fingers and passes through to the front between the ring and last finger to the bundle or card, whatever may be, of the thread. Lace is knit starting at the outer end of the thread and gradually spreading to the inner side of the thread. The needle is held in a slanting position in the right hand with the narrower portion downwards inside. It is made to rest with its flattened portion on the edge of the middle finger. In that position, the needle picks up the thread and is turned innerly in the clockwise direction so that a loop is formed of the thread. The needle reverts to its original position with a loop of thread around it. Then, another loop is made with the needle while it remains inside the first loop; and the second loop is caught with the hook of the needle and pulled through the first loop. Then, the needle passes through the second loop. It is made to form another loop in the same manner and that loop is caught with the hook and pulled through the second loop. Then the needle passes through the third loop. Yet another loop is formed likewise and pulled through the third. In this way the process continues. A chain of loops thus made forms the lace. All through the process, the needle rests on the edge of the middle finger of right hand with hook of it turned upwards in original position. Only the hand moves to suit the operation. The line drawings A & B in Plate 1 illustrate the position in which the needle is held during the loop-making operation. Looping is done at an amazing speed and it becomes mechanical for an experienced crocheter. The chain of the loops described above is shaped as required according to the designs to be made for the work taken up. The crochet lace workmanship is classified into 3 grades as follows:

25 (i) *Chetipani* or hand work: This type of work is elementary. It is the beginning of lace work and girls start learning to crochet with this. Every lace worker is well-versed in it. This work does not involve any complications and can be done by a semi-skilled worker. If a piece of work of 'chetipani' is undertaken by a craftswoman, it has to be completed by herself; another person may not have anything to do with it. The design in Plate 2 illustrates the *chetipani* (ಚೆತಿಪಾನಿ) type. The wage rates for this work are the lowest. Usually Rs. 12 are paid to the worker for a volume of lace work made out of one gross of thread (i.e., 1 gross of 100 yards' cards).

26 (ii) *Athukupani* or joint or attachment work: The name is suggestive that the work involved is the joining of several pieces. It is just like an assemblage of parts procured from different sources to form the whole. In this type of process the middlemen get the various types of flowers etc., prepared by different women, sometimes even in different villages. The component parts are got attached together to form the finished article in the required design. The kinds of flowers etc., that are prepared separately are called locally by the names of the common flowers e.g., *pedabanthi*, *sampengalu*, *tommidi chilukulu*. Please see Plate 3 which illustrates some of the designs. These types of flowers are attached together by *rekhas* or *rosapattis*, which are a kind of lace designs used for joining laces themselves and contain some graceful design without being monotonous to the eye. Please see the figure below.



It is told that there are certain villages which specialise in making some specified kinds of flowers in the lace making. There are two patterns in these flowers—called soft pattern, i.e., one sheet of lace crocheting; and the raised pattern, which resembles the petals of a flower. The wage rates are a little higher for the raised patterns; and the rates for the flowers vary from Rs. 16 to Rs. 18 for one gross of thread cards.

27. The flowers thus prepared are collected by the middlemen or the dealers themselves from the workers and given to a third person for attachment work. This job of attachment requires much dexterity and not a little artistic acumen by a few selected persons who are employed only for this purpose. For first of all, the component parts have to be attached perfectly so that no trace of joints in the finished article can be detected. And secondly, the ensemble has to lie perfectly flat on a table to the accurate size as a complete work of technical and aesthetic perfection inspite of its being the combination of many parts. The variety of parts depends upon the size and shape of the article to be produced, but their attractive overall composition depends upon the aesthetic perception of the persons who have created the original designs. Furthermore, the attachment of spare parts to form a specified design is the trade secret of individual dealers just like his copyright for that design. Therefore, only chosen people who enjoy the confidence of the dealers are entrusted with this work. A rate of Rs. 24 is paid for a volume of one gross thread cards used for the attachment work.

28. (iii) *Bordering and lining*: This is locally called *kazakattu* (కాకాట్టు) in vernacular. It consists of laying lace borders to cloth pieces and joining several cloth pieces with lace set into it at intervals.

Bordering is around the piece while lining is in between the pieces. Plate 4 shows the bordering designs. It is a class of lace making in which very few people are experienced, as great skill is necessary for producing attractive borders. It goes without saying that such bordering requires lot of patience and efficiency to make the articles look very charming. In attachment work lining is more difficult without being visible. The wages paid for this type of work are said to be the highest. They range from Rs. 36 and above, depending upon the quality of work the unit being work involving one gross of thread cards of 91.5 metres each.

29. The internal market in India has especially grown up for this type of articles recently and they are becoming more and more popular. Indian people are apt to use lace articles combined with cloth instead of using those made exclusively of laces, as is in vogue in foreign countries. Table covers, door curtains, hand-kerchiefs and skirt pieces come under the former category. Plate 5 shows a table cover involving this type of work. Agarthipalem village near Narsapur and Narsapur town itself are said to be the reputed centres for its production.

30. Everybody engaged in the crochet lace making craft, including dealers, middlemen and artisans, can easily estimate the quantity of thread and time required to make any piece of lace work.

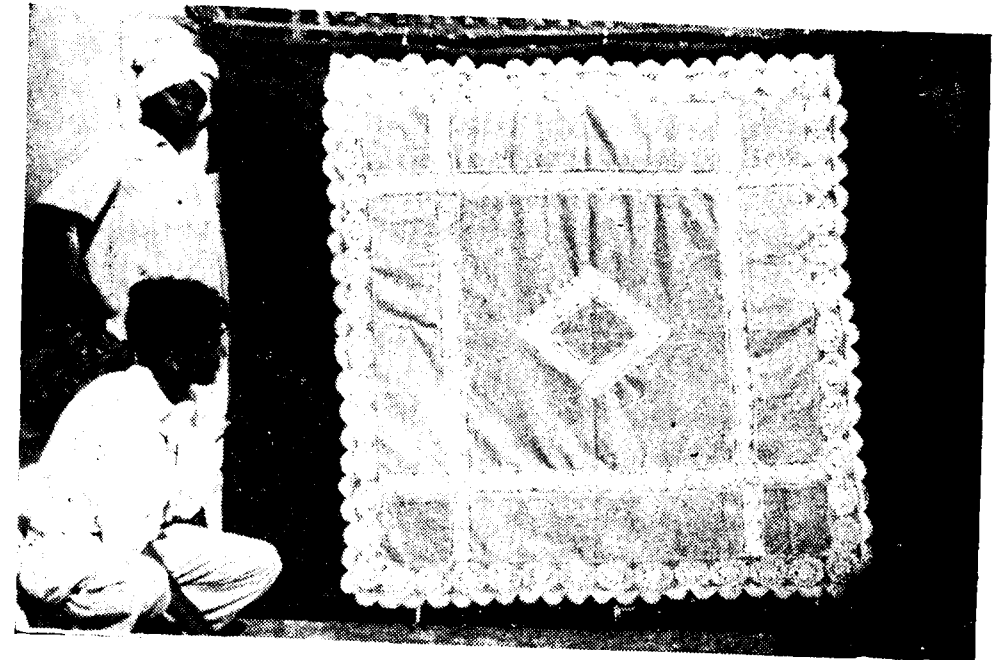


Plate 5. Use of crochet lace as a decorative insertion in a table cloth.



Plate 6. Whilst crocheting craftswomen sit on the balustrades of the verandah.



Plate 7. on the steps to the house.

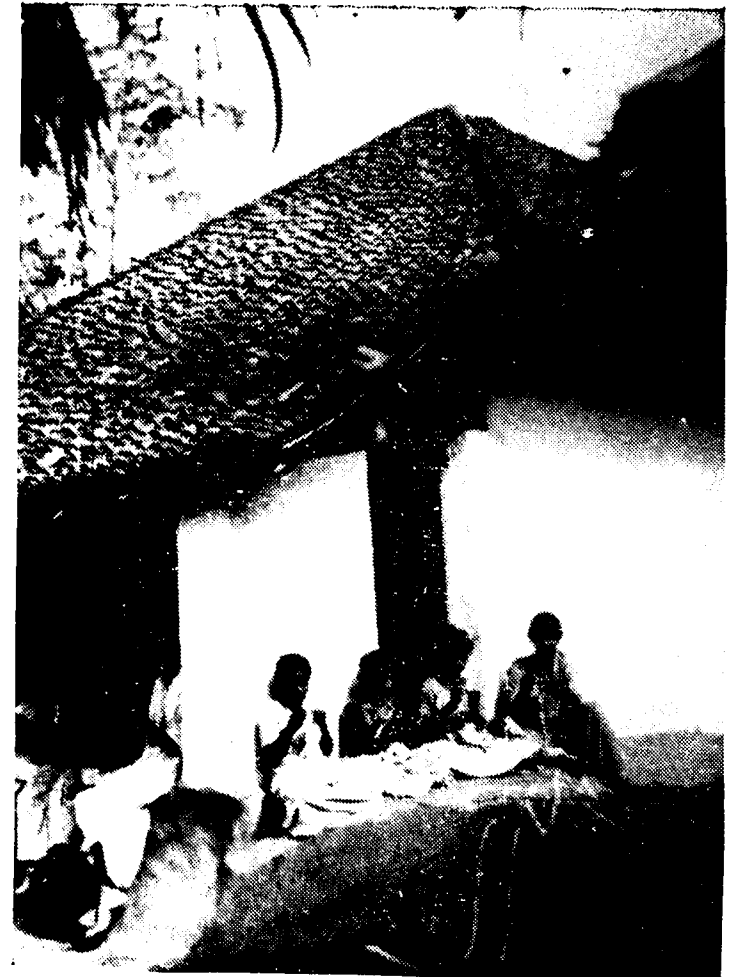


Plate 8. Crocheting is a pastime for girls.

SECTION V

ARTISANS

31. The organisation of the industry consists of 3 strata—namely, (i) the artisans who actually manufacture the goods, who are all women; (ii) the middlemen or middlewomen who act as agents of the exporter/dealer for getting the work executed as per the demands of the market; and (iii) the exporters or dealers who procure the manufactured goods and sell them to the public.

32. The workers, who are all women, usually work on a part-time basis in their respective houses. As the necessity of working away from their homes in any workshop or workshop does not enter into the picture, the women-folk of even middle class families can attend to this work in their homes. Their working hours are not fixed; so their household and routine affairs go on and in between they snatch themselves a little time away from the household duties to work with the crochet needle. The total working time for a craftswoman ranges from 4 hours to 8 or 10 hours a day depending upon the quantum of leisure available to a particular woman in her home. The school-going girls do the lace making keeping aside their books whenever they feel like it.

33. Usually, in the afternoon the women of 2 or 3 neighbouring households sit on the verandahs in front of their houses and carry on their lace making while chit-chatting with each other. Thus the industry has got the social effect of bringing neighbours nearer to each other. Plates 6 and 7 show the women at work. In this way, the leisure of the women is employed to advantage for earning money which can be profitably used either by themselves or to augment their families' incomes. Also in the face of the almost irresistible temptation to earn a few rupees through her lace making, no woman or girl in this area can afford to waste her time in gossip. Instead of playing their times away, the children also earn money through crocheting collectively. Plate 8 shows a group of these children. Needless to say, this collective activity obtains largely in the poorer sections of the society here.

34. Lace making is such an easy craft that all girls in a house take to learning it from their

mothers, sisters or neighbours from the age of 6 and become experts in the art within 3 or 4 years. If the articles crocheted by a learner are not upto the mark, they can be undone by pulling off the thread and the learner can be asked to do it again for better performance. Old women even upto the age of 70 years or more are seen to be engaged in this industry. Plate 9 shows a mother and her daughter working together.

35. Such is the peculiarity of the crochet lace industry that it is said practically no woman abandons this craft during her life time. Perhaps the reason for this is that no special skill or strength is required in its undertaking. Another peculiarity is that all other activities like talking, laughing and looking at other things can go on while the two hands work automatically with the needle. In other words, the hands can go on working regardless of the women's concentration on other matters; so mechanical is the crocheting. She may not look at the article constantly upon which she is working. Hence they are not even prone to the contraction of eye diseases on account of being engaged in crocheting.

36. Thus does the crochet lace industry keep the women gainfully employed during their leisure hours. It is estimated that there might be about 80,500 women engaged in it. Almost all women in the area belonging to the lower-middle and low income groups work at it in their spare time. It is the outstanding aspect of this handicraft that about 7,000 women from the ages of 6 to 70 years are gainfully employed in the town of Narsapur alone. They turn out exquisite pieces of lace work with the most consummate skill and artistry. A prerequisite for lace work is patience, for which the women of Narsapur seem to be reputed.

37. No association or organisation has been formed by the workers. As they do not normally stir from their houses, opportunities for mutual contact are rare. The only problem which these women workers have revolves around payment of better wages. However, they cannot afford to agitate collectively for this on account of their being of the weaker sex, confined to their residences which are scattered over a large area. Also, the



Plate 9. Mother and daughter working alike on the needle.

number of women who know the art is large in comparison to the demand for their workmanship; therefore the probability of success of any agitation for a higher wage scale is slight.

38. A Workers' Co-operative Society that was formed in 1942, with the object of providing employment to the Burma evacuees along with some local workers, became defunct within a few years thereafter.

39. The only institution where the art of crochet lace making is taught to girls on an organised basis is the Luthern Industrial School for Women and Village Lace Industry in Rajahmundry City in East Godavari District. The School is situated by the side of the Luthern Mission Hospital in Alcott Gardens at a distance of about 3 km. on the road from Rajahmundry R. S. to Dowlaiswaram. Because the crochet lace industry is a very famous handicraft in this area of Godavari districts, this finds place in the curricula of this missionary industrial home for women, where training is imparted to orphans and other destitute women, and they are made to work on earning basis while they learn at the same time. Besides this crochet lace knitting, there are separate sections of spinning, weaving and tape weaving at this Home.

40. About 50 girls work in the section of crochet lace and there are 3 women instructors for them. All the girls work squatting on mats in rows in the big hall of lace industry. The instructresses go around the rows and teach crocheting new designs etc., and supervise their work. The laces turned out here are exceptionally good in quality when compared to the stuff produced in the Narsapur

area. The motive behind the turn over at Rajahmundry Home is not profiteering, but to provide gainful employment to the inmates, and therefore quality is maintained superbly, whereas the Narsapur things are made for commercial purposes. The lace made at Rajahmundry is thick-plaited with no space between the loops and threads and the matting is tight. The designs are worked out with meticulous care for details and uniformity. Usually, as a rough estimate, it is calculated that a piece of lace which consumes thread of 4 cards at Narsapur takes in 5 cards at Rajahmundry.

41. All the girls working in the training-cum-production classes of this institution are paid monthly stipends and some pocket money. The lace articles produced here are sent as gift parcels to foreign countries or sent for sale through missionary institutions abroad; and also are put on sale at the School itself at Rajahmundry, along with the other articles produced here like tape, blankets, etc.

42. The institution also gets laces manufactured through individual craftswomen living in Dowlaiswaram, Narsapur, Palacole, Bhimavaram, etc. There are about 500 such women, who work for this Institution. The Manager goes round on tour, contacts the artisans, takes over the crocheted articles, pays off the wages and distributes thread for another round of production. No middlemen and women are engaged by the institution. The rates of wages paid are calculated on the basis of area of the crocheted laces in terms of square inches and it is said that the rates are higher than those prevailing at the hands of the exporters in the Narsapur area.

SECTION VI

AGENTS

43. There are middlemen who act as links between the trade and the craftswomen. The women engaged in producing the lace goods do not usually stir out of their homes or villages, yet the dealers or exporters have to somehow get work done from them. This necessitates either the dealer himself going to the craftswomen living in a given village or hiring some agency for the purpose. Both of these courses are in vogue in the town of Narsapur. But, in respect of the craftswomen living in the villages adjacent to it, middlemen or agents are invariably employed by the dealers.

44. Although the nature of their duties, which involve intensive touring, require men for the job, there are many women who work as agents. In fact there are about 500 women agents and only 100 men—the disparity in these numbers perhaps owes to the sex of the artisans with whom the agents have to deal with in several ways. The caste-wise proportion is given out to be 80:20 among men and 20:80 among women between Telagas and Agnikula Kshatriyas. Thus men agents are mostly Telagas and women agents Agnikula Kshatriyas. Telaga women ordinarily do not move out as frequently as the women of the latter caste do.

45. The middlemen are responsible for the quality of the products and the standard of their finish. Badly manufactured goods are not accepted by the traders; and the middlemen have to ensure that the craftswomen adhere to the high standards of quality required of them. The agents are never employed on regular full-time basis by the traders. Payments are made only on the basis of turnover just like weekly wages. An agent can book orders for 2 or 3 traders at a time; and at the same time a craftswoman is at liberty to undertake, or not to undertake the work from any agent. The consideration which mainly weighs with the workers is the quantum of wages offered to them, which varies with exigencies of demand.

46. The agent contacts a trader. He takes an adequate quantity of the thread from the latter for the orders received. Then, he goes over to the craftswomen in the villages frequented by him and distributes the thread with specifications as to the

size, designs, etc. He reaches the villages by foot, bicycle or bus. He fixes a time at which he will collect back the finished goods. Then on the appointed day, he returns to the worker, takes away the articles kept ready for him and pays the wages for that work. The women agents follow almost the same routine. Generally they go by walk, if the villages to be covered are nearer or by bus if farther. The quantum of income derived and the exigencies of work also induce the women or men to go by bus, train or other public conveyance.

47. A craftswoman takes the estimated quantity of thread while receiving the order from a middleman and the latter gives the date on which he plans to turn up to collect the finished goods. The woman works on the pieces whenever she finds time. A particular craftswoman can undertake orders from 2 or 3 agents at a time if she can cope with the work; or she can express preference for dealings with a particular agent if his wage rates are higher than those of others. As has been mentioned elsewhere, the wage rates vary according to the exigencies of the demand from a particular agent or his employer-trader. The agent may sometimes place further orders at the time of taking away the goods prepared, or he may come again for that purpose.

48. The difference in the rates which the middleman pays to the worker, and which he receives from the dealer, constitutes the wages for himself. The average earnings per month of a middleman amount to Rs. 60-70. When there are more women workers under the jurisdiction of a particular agent or when he can invest more funds towards payment of wages to the craftswomen, he can earn more income because he can execute more orders satisfactorily. Anyhow, he has to go around all the villages in order to keep in touch with his workers, even though he has got work of 10 gross on hand or of 100 gross at a time (one gross is equivalent to workload involving 144 thread cards of 91.5 metres each). His task is always exacting, with the only difference that an agent who maintains larger work receives larger income, as the ultimate payments are based on quantum of out-turn.

49. It has been revealed during the survey that financial investment is a problem for poorer persons

and their hands are tied from expanding their course of activities and thereby their income. There are people among the class of agents who can invest upto Rs. 1,000. But such cases are rare. Usually the financial capacity does not go beyond Rs. 100 on average.

50. The maximum amount of business which a single agent can undertake is of 40 gross thread *i.e.*, work involving thread of 40 x 144 cards of 91.5 metres each. On an average each man does only

upto 20 gross and woman agent 15 gross per mensem. According to one informant, the income that would be derived is estimated to be Rs. 3 per gross of thread and therefore it fluctuates around Rs. 60 for a middleman and around Rs. 45 for a middle-woman.

51. The procedure adopted by the company, M/s. Jonah & Joseph Brothers, for dealings with agents serve as an example in this regard.

52. The fine hand-made texture and the exquisite workmanship of the Narsapur crocheted products have apparently captivated the hearts of discerning customers abroad. Foreign markets form the mainstay of this crocheted lace craft commanding a trade of about 3/4ths of the total quantum of production. From its very inception, these lace products have always been exported to foreign countries. It is indeed a matter of exaltation to say that most of our lace products finally find a place in homes of the elite abroad. Almost all the traders in these lace products are self-styled exporters, because each sends a package or two to a customer outside India.

53. An Association called the All India Crochet Lace Exporters' Association, the present membership of which is 66, has been formed in 1951 by the various exporters of lace goods. Of the total membership of 66, 33 belong to Narsapur town proper. A census of all the members of the Association together with their caste is given in Appendix III. Out of the total number of 66, 40 concerns belong to Telugas, 9 to Christians, 4 each to Brahmins and Agnikulakshatriyas; 2 each to Vaisyas, and Kalavants, and 1 each to Kshatriya, Dhobi, Muslim, Gowda and Settibalija.

54. According to the information made out by the Association, there are 33 concerns which have practically no business at the present time. Twelve concerns have business worth less than Rs. 0.10 lakh per annum, 8 have business between Rs. 0.10 & 1.00 lakh per annum, 8 have between Rs. 1.00 & 2.00 lakhs, 3 have between Rs. 2.00 & 4.00 lakhs and 2 concerns have business of value of Rs. 4.00 lakhs and above. As seen from the list there is only one concern in the name of a woman, a sole representative of that sex in the trade. Mrs. Narasamamba is herself an artisan and is said to be conversant with all the intricacies in the production technique. She seems to have been in the trade for the past 10 years. It is said that the articles from her company are sent to the Government Emporia at various places in the country.

55. That pioneer exporter, the late Mr. Joseph was the President of the Association till the year

SECTION VII

EXPORTERS

1955, since when Sri A. Venkatraidu, a local Advocate, has been continuing as the President. The incumbent is elected once every two years. The President of this Association has been nominated by the Andhra Pradesh Government as a member of the State Handicrafts Advisory Board. In connection with the visit of Srimathi Kamala Devi Chattopadhyaya, Chairman of the All India Handicrafts Board to the Association in April, 1958, an illustrated brochure on the lace goods, with the aid of Rs. 1,000 granted by the Board, was brought out by the Association. Lately, it appears the Ministry of International Trade, Government of India have authorised the Association to issue certificates of origin to the lace articles under Article 11 of the International Convention relating to the simplification of customs formalities.

56. Some of the established traders in the lace goods have some foreign customers, from whom they receive orders regularly. Generally, the exporters contact brokers at those places and get in touch with the prospective customers to whom a catalogue with illustrations of their products, together with samples and prices, is then sent. The individual trader gives a number of his own to each of the various designs available with him, which is used for referring to that particular design in his dealings. No names are mentioned. The composition of the design is his own property and it is a secret not known to the other manufacturers. Only these code numbers are quoted to the consumers with accompanying samples. If an order is placed by the customer for the goods on seeing the catalogue, samples and the price list, the articles are then prepared through the middlemen. Usually, a time limit is specified for the compliance of the orders at the time of sending up the quotations or on receiving orders, and, within the time specified the articles are despatched either by parcel post, or by air cargo. The cost is payable in advance or at the time of delivery through a banking agent in the foreign country.

M/s. Jonah & Joseph Company

57. Whereas the late Mrs. and Mr. Macrae were the founders and originators of this craft, the credit for getting the lace industry recognised and develop

ing it on commercial lines, must inevitably go to the two brothers, Jonah and Joseph. Starting as teachers in the missionary service in those days, they had ample opportunity to know lace-making. Learning all the intricacies of it, they started a concern which dealt in exporting crocheted lace articles to foreign countries. This concern, a pioneering one in this field, is now the biggest of its kind at Narsapur, employing on its staff 11 members, who maintain accounts with about 500 agents or middlemen, who in turn, procure goods manufactured by 30,000 women artisans scattered in Narsapur and the neighbouring villages. The thread is supplied to the middlemen by the concern after making entries against their respective names in the ledger maintained for the purpose. When the finished goods are brought back to be delivered at the premises of the concern by the middleman (agent) on the days fixed (3 days are fixed in a week) for him, the value of the goods is calculated in terms of cash, and against that the cost of the thread which stands in his name is deducted, thus arriving at the wages due to him for the work turned out. The wages are paid to him once a week.

58. This concern of Jonah and Joseph Brothers manufactures and exports articles of every kind of

hand-made laces. It is located in an old building, formerly the property of the 17th Century Dutch traders on the bank of Godavari near what is called Holland Wharf. The products of Jonah & Joseph Brothers, exhibited in different parts of the world, have always created interest and have been readily sold out. The concern has established a reputation for sustained export trade in the lace goods over a period of nearly half a century. The quality of goods maintained by them has remained remarkably high. Plate 10 shows the medals awarded to the concern at the British Empire Exhibition, London, 1924 and at the Sesqui Centennial International Exposition at Philadelphia in 1926. This concern is a member of the All India Crochet Lace Exporters' Association, Narsapur, and as has been already mentioned, Mr. Joseph was the Chairman of the Association till the year 1955. They conduct their business quite independently of the Association as all the other members thereof do.

59. Jonah & Joseph Brothers have been exporting goods to the United Kingdom, West Germany, Austria, Australia, New Zealand and the Scandinavian countries. The value of the exports is stated to work out to Rs. 5 lakhs a year.



Plate 10. Medals awarded at International Exhibitions.

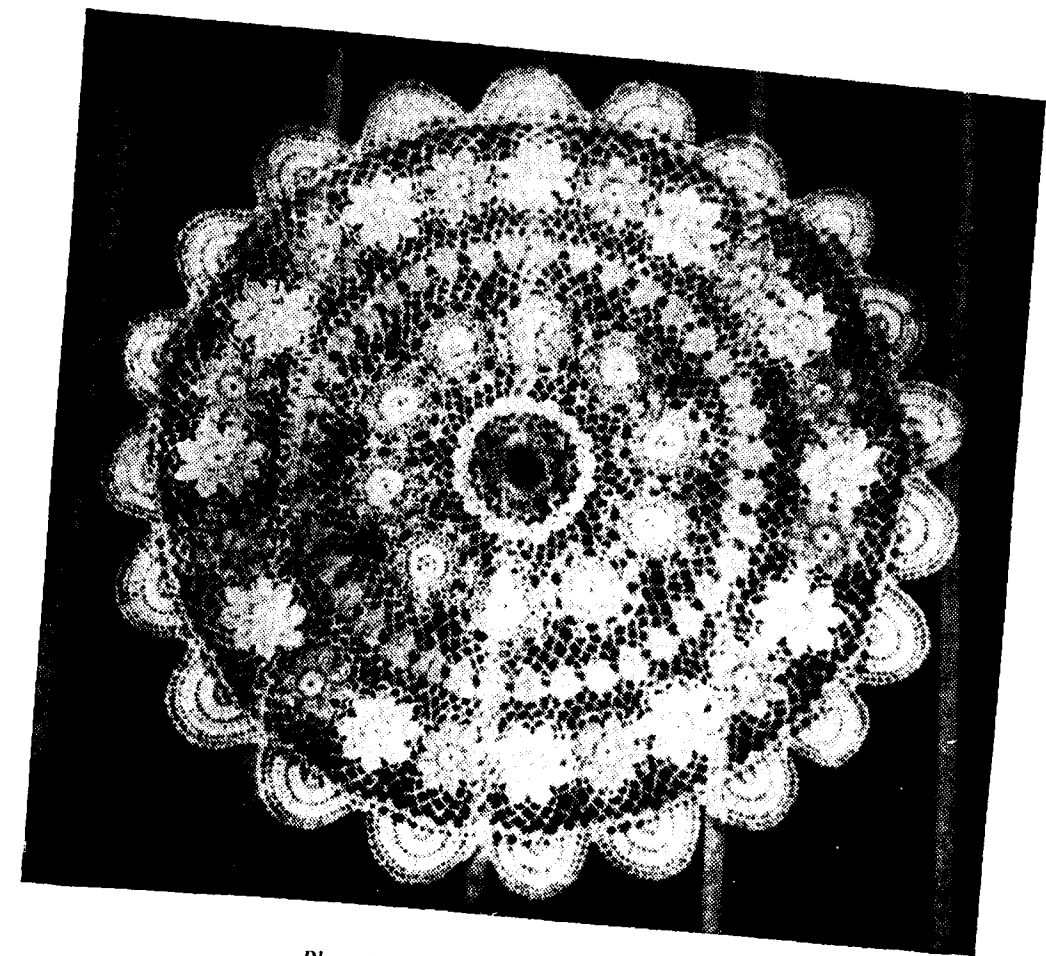


Plate 11. An exquisite new design.

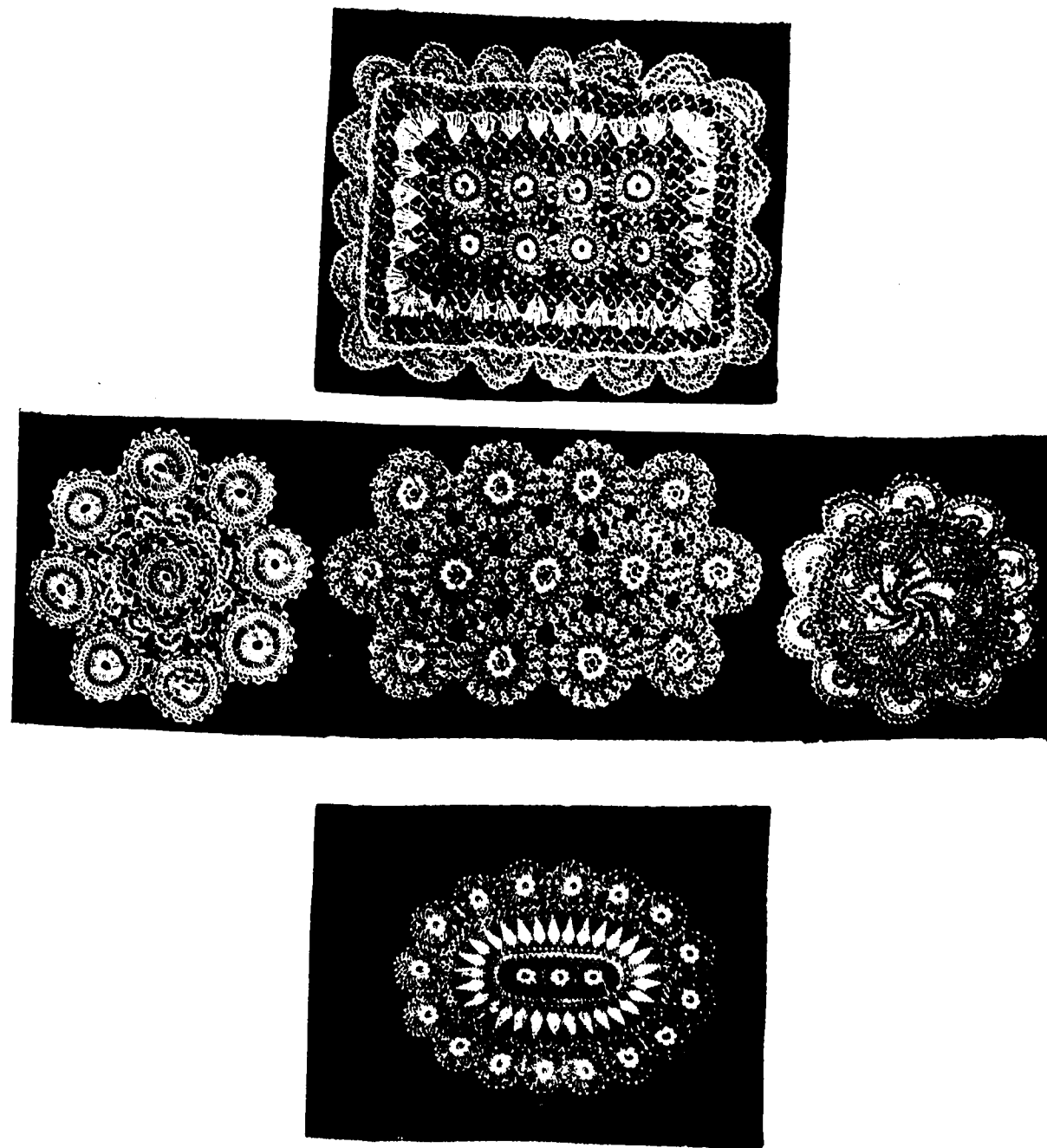


Plate 12. Doyleys and table centres.

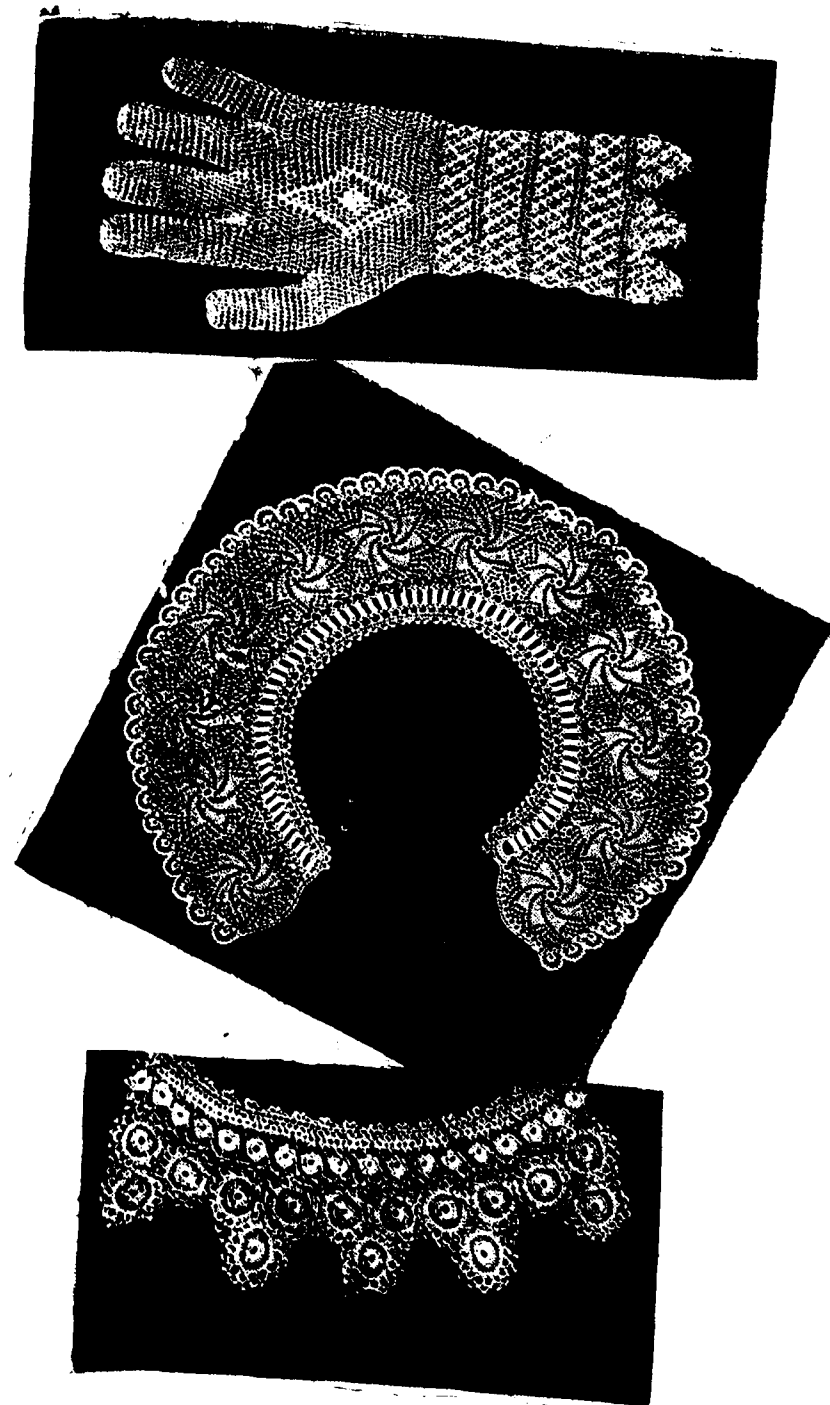


Plate 13. A glove, a collar and a cuff.

SECTION VIII

RANGE OF PRODUCTION AND USES

60. Various shapes of laces such as circular, oval, square or oblong and of various sizes ranging from 6 to 72 inches in diameter if circular, or oblong ranging from 4 by 8 inches to 9 by 134 inches are produced according to the specifications of the order. The designs used numbered not more than a dozen when the craft was in its infancy, but now there are said to be in vogue more than 300 designs for the various types. The combination of individual parts such as the different sorts of flowers in a selected fashion creates a design. Plate 11 shows a new design. The method of combining different design units to form a brand new design results in an invention. This happens out of experimentation by the workers themselves and sometimes from the imagination of the traders. Perhaps, a gradual improvement over the present set patterns will be possible as time goes by and when a more aesthetically exacting consumer public demands it. Once a design is invented by a trader, a code number is given to it by that trader for quoting to the prospective customers along with a sample or picture thereof. Sales and exports of the different designs depend on the individual tastes of the customers.

61. The articles are mainly produced in white and ecru colours, although threads of other colours like pink, rose, golden yellow, maroon, red and violet are used in combination for contrast in some of the designs.

62. The laces are made into table-centres, table runners and table mats, teapoy covers, doylies, luncheon sets, bed spreads, door and window curtains, collars, cuffs, gloves, lace edgings and laces by yard for home decorations etc. Plates 12 & 13 illustrate some of the finished articles. The uses of the lace products are legion. The laces decorate the ritual or ceremonial garments of ecclesiastical personages and of choir singers during church services. They find a place in the offices of the modern business executives too. They create a sort of fatigue-mitigating atmosphere when used as table centres etc., and fixed under the glass sheets. As luncheon sets and doylies, the dinner table affords them their proper place. Narsapur patterned lace can also be used as small wall hangings that give

textural contrast in an interior setting. Lace trimming for various types of garments is, of course, common.

63. If an attempt is made to divide the list of articles produced into 3 groups according to the uses they are put to, they can be as follows :

For ceremonial use : Dinner sets, tea sets, oblong sets, tray cloth, glass bottoms and glass covers ;

For domestic use : Doylies, table centres, oval tray cloths, teapoy covers, door curtains and window curtains ;

For decorative use : Collars, cuffs, gloves, jackets, frocks, bodies, bibs, radio covers, pillow covers, bed sheets and table runners.

It is not out of place to mention here that it is hardly possible to classify the lace articles as of past and present days, as none is obsolete by itself by passage of time. Round doylies and ovals find themselves most frequently used ; and bed sheets and pillow covers are most rarely used.

64. Articles made exclusively of lace find demand more among the foreigners than among Indians. In Western countries these laces are put to manifold uses. The consumption of the lace articles in the oriental countries including India is not much significant. The lace goods are more or less extravagance for the Indian masses whose purchasing capacity is low. However, those articles which are made out of laces in combination with cloth and with a utilitarian *raison d'etre*, do find a place in a few well-to-do Indian homes.

65. It would be of interest here to examine the cost structure of the lace articles. Let us take the case of a set of one dozen table centres of diameter 18" each.

Volume of thread required = 8 dozens cards of 91.5 metres each

Its cost = Rs. 8 at Re. 1 per dozen cards

Wages to the craftswomen: Rs. 12 at Re. 1.50 per dozen cards

Time taken for crocheting 144 hours at 1½ hours per card on average

Total cost = Rs. 20

Plus margin of the agent Rs. 2 at Rs. 3 per gross of cards

The price at which the trader gets the articles: Rs. 22

Add margin of the trader Rs. 5.50 at about 25%

Sale price = Rs. 27.50.

66. The prices of the crochet lace articles as quoted by the All India Crochet Lace Exporters' Association range between the limits mentioned below :

Name of article (1)	Dimensions		Rate per dozen pieces	
	From	To	From	To
	(2)	(3)	(4)	(5)
			RS. P.	RS. P.
Doylies (Round)	4"	16"	2.70	20.00
Table Centres (Round)	18"	54"	27.66	299.00
Ovals	5" x 9"	16" x 24"	5.33	44.00
Table runners	12" x 36"	16" x 54"	50.00	100.00
Squares	4" x 4"	54" x 54"	3.38	372.66
Oblongs	5" x 9"	16" x 24"	8.00	48.45
Bed sheets	54" x 71"	90" x 110"	533.33	1,306.00
Lace by yards	1" width	4" width	2.00	23.33
Luncheon set	...	...	12.00	per dozen yards for set of 19 pieces

The above ranges of prices are for white goods ; and 10% extra is charged for ecru and colour mixed articles. The prices are quoted in British sterling often for the convenience of export trade.



Plate 14. Crochet lace articles being marketed at the weekly Palacole *shandy*.

SECTION IX

STORAGE AND MARKETING

67. There had been an increase in the export trade over the period 1927-'53. "It is interesting to note that in the year 1953 the crochet laces alone fetched foreign exchange to the tune of Rs. 80 lakhs." Since 1954, there has been a decline mainly due to import curbs imposed by some of the foreign governments like Australia, New Zealand, Mexico. The U. S. A. raised import duty on the lace goods from 60% to 90% and this dealt a severe blow to Narsapur exports. India has banned exports to South Africa owing to the strained political relations with that country. The products are being exported now to the United Kingdom, West Germany, Switzerland, Scandinavian countries, Canada, the U. S. A., the British West Indies, Australia, New Zealand, Jordan, the Persian Gulf and other overseas markets.

68. As regards the quantum of exports of lace goods which go out from the areas under study, a considerable guess work is necessary as the individual exporters of this trade are scarcely willing to give out their sales figures lest their trade prospects should be eclipsed through trade competition and rivalry. However, the All India Crochet Lace Exporters' Association has computed certain figures on the basis of the available means. These figures for the last 5 years are as follows :

Year (1)	Value of exports (in lakhs of rupees) (2)
1958-1959	21.95
1959-1960	22.24
1960-1961	25.80
1961-1962	30.11
1962-1963	25.85
1963-1964	20.00

It is reported that the figures are estimated on the basis of the production position in the market and some information given by the exporters themselves.

69. Generally, the goods are manufactured only against confirmed orders. Once they are manufactured, they are disposed of within the stipulated time. As such, there is little need for provision of storage facilities.

70. Sometimes the women artisans prepare pieces of their own accord even without orders being received for them. In such cases they naturally use their own thread. All such goods are bought by the middlemen or others, when they visit the villages, to be sold away to the families whose menfolk do business in the up-country cities. A large volume of such goods are also disposed of at the weekly fair (*shandy* or *saad*) at Palacole, [Plate 14]. The lace goods have become a valuable commodity of exports for earning foreign exchange for the country. Any effort towards bettering the trade prospects and augmenting the exports of the Narsapur goods will contribute to enhance the wealth of the country as a whole.

71. The hand-made lace products of India have to compete in foreign markets with machine-made laces which chiefly come from Japan, China, Belgium, Italy and Spain. Also plastic doyleys have invaded the market. People are becoming accustomed to these plastic types, which are at the same time colourful, cheaper and more easily washed. Paper doyleys are also cheaper and more useful; and these factors have naturally cut into the Indian exports to a certain extent.

72. On the other hand, and in contrast to the organised export trade, the internal sales of the goods are meagre and they are mostly undertaken by hawkers who go from place to place in the country. Many of the hawkers of this kind are Christians. They leave the families here and go about the country for periods of 1 to 4 months at a time. They tour extensively in the Northern India and cover the large cities and the industrial and tourist centres—e.g., Calcutta, Delhi, Bombay, Mussorie, Dehra Dun, Lucknow, Agra, Asansol, Jamshedpur, Durgapur and Rourkela. Everytime they leave on tour, these sellers take goods of value Rs. 300 or 400 with them. Their family members send them goods by post, whenever asked to do so, by purchasing articles at the *shandy* or from the middlemen.

73. The laces are carried in bundles or suitcases by the dealers from door to door for canvassing sales from the prospective customers. The goods are often disposed off at bargain prices. I came

1 P. Pohreddi, (Retd.) Deputy Director of Industries & Commerce, Andhra Pradesh, *Physical Planning for Industrial Development*, p. 11

across one such hawker in the railway compartment while I was travelling from Kakinada to Hyderabad. He thrust upon me a set of doyleys for a luncheon table for Rs. 10 whereas the price he first quoted was Rs. 20. The goods are also displayed and sold at the various Handicrafts Emporia at Hyderabad, Bombay, etc.

74. One of the outlets for the local marketing in the area of production is the weekly *shandy* or fair at Palacole which is held on Saturdays. Many people who are interested in buying or selling the lace goods throng there every week. On the day I visited the *shandy* as many as 50 merchants, not only from the neighbouring villages of Narsapur Taluk but also from Razole Taluk across Godavari, had come there to display their goods. I found a non-Telugu knowing businessman who came down from Hyderabad to purchase the laces and also a woman who mentioned that she would purchase Rs. 200 worth of goods every week and send them to her menfolk who were employed in Bombay for selling them in sophisticated circles.

75. Although previously the people in the country were not accustomed to the use of lace goods, the display and publicity at various centres and the efforts of hawkers have resulted in promoting the internal sales in India. It is estimated by the All India Crochet Lace Exporters' Association that the present sales amount to Rs. 10.00 lakhs a year. The articles are mostly used in India as table covers, dinner sets, teapoy covers and door and window curtains mostly combined with cloth.

76. The formation of a co-operative society of which all the lace producers and workers would be members and which would function on lines similar to the Handloom Weavers' Co-operative Societies, would be most welcome. But, this may not be

possible unless the demand for the goods within the country asserts itself to a greater degree than at present.

77. The industry suffers from a number of malpractices indulged in by the traders, who underquote each other in prices and who make no sustained effort to adhere to one standard of prices because of unhealthy competition among them. Quality of the goods is, however, said to be maintained uniformly.

78. The Government of Andhra Pradesh have introduced a Quality Marking Scheme, which helps in the classification and standardisation of the goods. The scheme is voluntary and some of the exporters are availing themselves of it. But, different export merchants of lace goods hold different opinions about it. There are exporters who feel that the quality marking by Government has a high propaganda importance for the lace goods. There are others who maintain that their goods are already of high standard and the quality mark would only make the importers abroad lose their esteem for these goods.

79. A development scheme intended for improving the interests of the industry has also been functioning with the staff of one Manager and a Store-keeper-cum-Designer under the auspices of the State Department of Industries and Commerce. The twin aims of the scheme are to tender advice to the exporters to overcome difficulties encountered, if any, in promoting the trade interests and to introduce new designs in the lace articles so as to enlarge the markets for them. With the co-operation of all concerned and the Exporters' Association in particular, these two schemes should work well for promotion of the industry.



Plate 15. House types in Ponnapalle area of Narsapur town where craftswomen are concentrated.



Plate 16. House type of a well-to-do Agnikulakshatriya family in Ponnappalle area.



Plate 17. House types in Royapeta area, Narsapur.

SECTION X

ECONOMICS OF THE INDUSTRY AND WAGE STRUCTURE

80. The crochet lace industry, unlike elsewhere, involves no fixed capital, as the employers need not erect a factory, instal machinery nor appoint executives. Working capital is required only for the purchase of thread and payment of the wages to the women who produce the lace articles. The circulating capital in this craft is estimated to be about Rs. 500,000. Except for certain established and long standing concerns like Jonah & Joseph Brothers, the traders usually resort to private borrowing whenever that is necessary.

81. Most of the craftswomen live in cottages which are *kutchas* and their living conditions are generally poor. The house types differ according to the financial status of the families. In Ponnappalle area of Narsapur where the artisans of Agnikulakshatriya (fisherman) community are concentrated, the houses are mostly thatched huts with mud walls on the four sides. One finds tiled houses as well. Please see Plates 15 & 16. The houses of the artisans belonging to the other communities pertain to all types, viz., thatched, tiled or terraced. Plate 17 shows a street in Royapeta, where Telaga artisans reside in a large number. The earnings of the women artisans in the family are too meagre to determine the status of the family and probably no family entirely depends upon the craft. Exceptions relate to a few particular cases where no male members exist in a family and the crocheted lace work is the only means of livelihood. Therefore, by and large the house types are not influenced by the remuneration received from the craft.

82. The menfolk of the artisans engage themselves chiefly in agriculture or fishing and are the breadwinners of their families. The incomes earned by way of wages by the craftswomen go to supplement their budgets in the case of poor families. If the families are well-to-do, the women obviously keep their earnings as pocket money for themselves.

83. For each 100 yards of thread, in general, a semi-skilled woman worker takes two hours and a skilled woman worker $1\frac{1}{2}$ hours. If the designs are new, even the latter takes 2 hours to convert the 100 yards into lace. The rate of wages paid ranges from 9 P. per 100 yards of yarn, if the knitting is simple, like the ordinary floral units, to 60 P. per 100 yards, when the work involved is of intricate nature like bordering and lining, which require considerable skill and artistry in making the border attractive. The earning capacity of the workers depends upon the quantum of leisure available to them, and the nature of the work undertaken—simple or complicated, as specified by the designs. Usually, no worker can do the knitting for more than 8 to 10 hours a day and the usual hours range from 4 to 6 a day. The wages earned per day work out roughly to the range between 20 P. and Rs. 1.80 P. according to the output of the individual worker.

84. As has been mentioned elsewhere, the middlemen or women who go about to the artisans for distribution of thread and collection of the finished goods on behalf of the traders, receive about Rs. 60-70 per month.

SECTION XI

CASE STUDIES

Case study of an artisan family

85. A typical example of this skill traditionally coming down from mother to daughter is illustrated by an artisan family, the head of which is Sri Tirumani Subba Rao. Sri Tirumani Subba Rao, aged 35 years and belonging to Agnikulakshatriya caste (fisherman), is a tailor at Ponnapalle, Narsapur and his father's calling was fishing. Smt. Venkata Ratnamma, aged 30 years, and Kumari Laxmikantham, aged 14 years, wife and daughter respectively of Sri Tirumani Subba Rao, each spend about 4 to 7 hours a day in lace-making, whenever they can snatch time from their daily household work. Put together their earnings on the average work out to 75 P. per day. They can prepare all kinds of laces in handwork (*chetipani*) and attachment work (*athukupani*) also. They have their own tools (crochet needles) and the thread is automatically supplied to them with the orders from the exporters. The craft comes through the mother-to-daughter line in this family.

86. The average monthly income of the family is about Rs. 87-50 P. consisting of Rs. 65 which represent the earning of Sri Subba Rao from his tailoring business, and Rs. 22-50 P. representing the earnings of the two craftswomen from their crochet lace work. The total income of the family thus works out to Rs. 1,050 per annum. This amount of Rs. 1,050 is spread over such items of expenditure as Rs. 600 on foodgrains, Rs. 160 on fuel, lighting and house repairs, Rs. 220 on clothing, Rs. 30 on cinema shows or entertainment and the rest on such miscellaneous items as cannot be classified under any of the above items. This is a typical illustration of the earnings of the housewife-artisan and her daughter-artisan supplementing the earnings of the head of the household. Nevertheless, the financial condition of the family is such that these earnings are hardly sufficient for their day-to-day needs. They leave no surplus in the form of savings for future needs.

Case study of an agent

87. Sri Potumudi Venkanna is an agent in the crochet lace industry, *i.e.*, he works as a middleman between the craftswomen and the trader in the lace articles. Aged 52 years, he lives at Madhavihpalem

in Narsapur and belongs to the Rajaka (washerman) community. Originally a native of Mogalturru village (7 miles from Narsapur), he migrated here 15 years ago. His father was a cultivator as well as a good craftsman of the Kalamkari printing industry of Masulipatnam. Sri Venkanna also knew the art, but had to give it up in the year 1959 because of his financial difficulties. By a turn of fortune he became penniless. His daughters were already good craftswomen at crochet lace and Venkanna was attracted to this job of acting as middleman and procuring the crochet lace goods. Thus he entered this industry in 1959. He is also an Ayurvedic Vaidya (doctor) and treats people known to him. He was married at the age of 20 years. He has, however, been a widower for the past 10 years.

88. During the course of his job of entrusting the work of crochet lace making to the women artisans, Sri Venkanna traverses a distance of 7 miles round about Narsapur on cycle. He has no clients at Narsapur proper. During his first round of journey, he distributes among the several women-artisans the thread which he has taken in required quantities from the ordering concerns at Narsapur. After a time lag of about a week, he revisits the women, makes payment of wages to them and takes custody of the finished goods. He then goes to the concern from which he had received orders, delivers the goods and collects his wages. On an average, he earns a sum of Rs. 60 a month. The reasons for his not trying to enlarge his field of work are given out to be his limited capacity to work due to old age and also the lack of financial resources. He has a son aged 30 years, trained secondary grade, who has been working as Headmaster, Elementary School, Gopalapuram, Kovvur Taluk and so lives away from the family. He has 3 daughters aged 22, 20 and 17 years respectively, who from childhood have been trained in crochet lace making. They now make all types of laces and designs. The second daughter Kumari Teyaru Laxminarasamma has attained such a high proficiency in the craft that she was awarded the first prize in the contest in crocheted lace work held at Narsapur under the auspices of the State Handicrafts Board in the month of November, 1961. Many girls in the neighbourhood have learnt the art from her.

89. The financial position of the family of Sri Potumudi Venkanna is such that he can barely make both ends meet. He earns Rs. 60 a month and his three daughters put together earn Rs. 66 through wages from lace making. His son sends no money to his father, nor does he get anything from the latter. The total income is Rs. 1,512 per annum, against which the expenditure is Rs. 900 on food and drinks; Rs. 160 for house repairs, fuel and lighting; Rs. 250 on clothing; Rs. 100 on education and Rs. 100 on miscellaneous expenditures. Sri Venkanna has not been able to save any money for the marriages of his grown-up daughters. He says that unless he provides for some dowry also, there is now-a-days little possibility of getting married in their community. It is doubtful if he can ever do it even with his own meagre income combined with that from his daughters' lace making work.

Case study of a hawker of lace goods

90. Almost all the hawkers in the lace industry are Christians. Sri M. John (46) of Narsapur is a hawker who has been in this business for the last 30 years. He first started his activity in this field by selling some lace goods of Narsapur at Hyderabad in the year 1934. Now, he sells his goods at Calcutta, Durgapur, Asansol Dhanbad etc. He purchases the lace articles from middlemen locally at Narsapur and takes them to the above places, stays in those parts for 1 or 2 months and sells off the articles there. Sometimes he stays for 5 or 6 months at a stretch in the up-country places without returning home. His family members here procure the goods as and when they receive intimation from Sri John and despatch them to the latter. The value of each such consignment would be about Rs. 200. Sri John goes about the residential quarters of big officers, businessmen and other wealthy people, displays the goods which meet their tastes and needs, and disposes them off at bargained prices. Sri John says that it is impossible to boost up the prices, as the goods are already in the show cases of Government Handicrafts Emporia with their prices fixed and marked on them. And also the keen competition among the hawkers themselves to do as much business as possible at reasonable marginal profits is said to work against selling at higher prices. The sales are estimated at Rs. 400 per month totalling to a sum of about Rs. 5,000 a year for Sri John. Sri John does not bother about sales to tourists nor at tourist centres. He neither

goes about in ships harboured in the ports unlike the other hawkers in the lace business. Some of the lace hawkers who belong to Narsapur area have taken a house on hire at 2-Dedar Baksha Lane, Calcutta, on long term basis. It is their centre of activity and temporary headquarters from where they conduct business going on tour to other towns. The peak days of business are in the 3 months, October to December every year *i.e.*, just before Christmas, as the articles are sold mostly to Christians and Europeans. There are no months in which the business prospects are nil. The usual itinerary may generally be summarised as follows: Sri John returns home at the end of December for Christmas; stays home for 3 months; goes in March-April; returns in June-July; goes again in September-October. People going only once start in March and return by the end of December. There are people who stay away for 1 year or more at a time.

91. It is said that the lace articles mostly sold by Sri John consist of doyleys, dinner sets (oblong), table covers (mixed with cloth also), tea cosey covers (oval) and tray covers (rectangular). The counts of thread used are No. 10 and No. 16 only.

92. According to the information of Sri John there are about 50 hawkers from this area, who do business mostly at Calcutta and the round about centres, of whom about 15 belong to Narsapur, 15 to Palacole, 10 to Chettypet (Nidadavole) and 10 to Attili. Sri John holds the view, although he has been in the business for the last 30 years, that hawker trading in lace articles is not a dependable and steady business. The sales and profit depend upon the efforts one puts in patiently undergoing the strain involved in touring extensively and in canvassing and bargaining with the prospective customers. The hawkers did roaring business during war-time, because the soldiers moving hither and thither bought the lace articles lavishly. Sri John says that now-a-days he has curtailed some of his business because the chances for profits have become bleak.

93. Sri John is aged 46. He studied upto fourth form at High School. He can speak English and Hindi fluently besides Telugu. He knows a little Bengali also. His father used to do the same business. Sri John has a son and a small daughter of one year. The son Mr. David (18) is now coming up in this business with his father. He accompanies his father now and then on the trips to

upcountry. But, Sri John is of the view that David should prosecute his studies—now he has stopped at IVth Form—as the trade prospects in the lace business cannot be relied upon for ever. The wife of Sri John, Smt. Kamalamma (32) is an expert at crocheting and is a master craftswoman. She selects and purchases articles from middlemen, who go over to Sri John's home, for being sent to her husband. Practically, Sri John confesses that he doesn't know the trade intricacies of purchasing from the local market of Narsapur and in this he is entirely dependent on his wife.

94. According to the figures revealed by Sri John, his family income stands at Rs. 100 p.m., from the lace trade, after deducting the expenses of tour and his sojourn at Calcutta or elsewhere. He gets an amount of Rs. 500 yearly from his lands. He has pleaded inability to give details as to how his income is spent at his household.

Case study of a merchant at the Shandy

95. Sri Degala Mastan (40) of Agnikulakshatriya community is a middleman in the crochet lace industry. He visits the weekly *shandy* at Palacole every Saturday. He sits there with his goods displayed and sells them off by the evening. Sri Mastan has been in this business for the last 30 years. He has seen the fortunes of the industry through ebb and tide. His knowledge about the industry is informative. Sri Mastan says that previously the middlemen themselves invested the funds necessary for purchasing thread and getting goods manufactured through craftswomen; in this way they aimed at maintaining the high standard of quality of their goods to capture better markets at the hands of the various exporters. Now-a-days, because the exporters themselves pay in advance and order for their requirements, the middlemen are unlikely to evince keen interest at the standard of quality as much as at the quantum of turnover for their orders. This practice of advances being paid by the exporters and thread given with orders began in 1945-46. The pattern of business changed in that year due to the boom in the trade then occurred and consequently there is multiplicity of exporters and business people in the industry.

96. According to Sri Mastan there are altogether about 500 women and 100 men who work as agents. Men are much less in number because the artisans are women and they are more amenable to persons of their own sex. Sri Mastan traverses all the dis-

tances by walk only. He goes to Seetharampuram, Konteru, Kaza, Doddipatla and Palacole also. He goes by bus according to the exigencies of demand and the anticipated income. He receives a *majari* of Rs. 15 per gross for *athukupani* and *rekkipani* of which Rs. 12 is paid as wages to the artisans and Rs. 3 is retained by him. For *chetipani* he receives Rs. 12 of which Rs. 9 is paid as wages. The usual average workload which a middleman can undertake is of 20 grosses a month. A woman can handle upto 15 grosses a month. The maximum that a person who covers villages by bicycle can undertake is 40 grosses, but such cases are rare.

97. Sri Mastan says that at the weekly Palacole *shandy* he sells goods worth of Rs. 50 every week. A sum of Rs. 10 would be his profit. He has been going there regularly since a year. Some 60 businessmen who procure lace goods through giving thread and wages gather at the *shandy*. They come from Sakshinetipalle, Narsapur, Seetharampuram, Konteru, Palacole, Vardhanam, Siragarapalle, Medapadu etc.

98. Sri Mastan has wife, Smt. Subbayamma (35), one daughter (13) and his old mother (60) in his family. Smt. Subbayamma who has had elementary education is an expert craftswoman in the lace industry. She is familiar with all details and intricacies of this artcraft and assists husband in procuring lace goods for his business at the weekly *shandy*. Daughter, Lakshmi Samrajyam is studying in the 8th Standard and she does crocheting at the rate of 3 cards of thread per day during her leisure hours. Sri Mastan's mother, Venkata Subbamma once worked as middlewoman or agent in the lace trade. Now also she goes on crocheting during most of her time in the day thus supplementing the family income with her earnings.

99. Sri Mastan says that his average monthly income amounts to Rs. 60 after setting off the expenses of his tour around the villages. His wife, daughter and mother make a total of Rs. 30 a month. Thus, his annual income from the lace industry is about Rs. 1,100 and he gets Rs. 250 yearly from his lands. Against the total earnings of Rs. 1,350, the expenditure of the household of Sri Mastan comprises the following items: food (i) cereal Rs. 410; (ii) non-cereal Rs. 240; drinks Rs. 90; fuel and lighting Rs. 102; house repairs and tax Rs. 28; clothing Rs. 200 and miscellaneous items Rs. 180. He pays an insurance premium of Rs. 100 per annum.

SECTION XII

CONCLUSION

100. The All India Handicrafts Board has recently conducted a survey of the crochet lace industry of Andhra Pradesh. The recommendations made in the Report of the Committee for Southern Region include the following:

- (i) all the lace goods should be brought under quality control system in order to increase the sales;
- (ii) there should be methods of adherence to fair prices of the goods;
- (iii) inclusion of lace goods in bilateral or multilateral trade agreements with foreign countries;
- (iv) negotiations to be taken up by the Government of India with foreign governments for easing of restrictions imposed on imports and the excessive duties levied;
- (v) wide publicity should be given through the Indian Trade Legations abroad;

(vi) lace goods should be treated as art goods and the matter should be taken up with governments which have categorised them as textiles; and

(vii) wide publicity for the Narsapur laces should be given in fairs and exhibitions in which the Board is participating.

101. If and when these recommendations are given effect to, the crochet lace industry of Andhra Pradesh will indeed be a source of glory to the entire handicrafts and cottage industries structure of India.

102. Before concluding this write up, I wish to place on record my thanks to the All India Crochet Lace Exporters' Association and particularly to its President, Sri A. Venkatraidu, for their valuable assistance given to me in studying the various facets of the industry, and also for the pictures of the articles reproduced from their brochure. I am also thankful to Messrs. Oriental Lace Manufacturing Co., Palacole for the designs illustrated from their catalogue.

APPENDIX I

Excerpt from Census of India, 1931 - Vol. XIV, Madras, Part I, Report - Chapter VIII, Appendix II - Methods and Processes of Disappearing Industries

Crochet lace industry :

Although the lace and embroidery industry has of late been showing signs of decline, it is only the crochet lace section of it that could be considered as disappearing. The crochet lace industry is carried on chiefly in and around Narsapur and Palakole in the West Godavari district. It was introduced about the end of the last century by the Christian missions to give employment to Christian women and girls, and at one time a considerable number of women and girls above 8 years old, of all castes, mostly Christians, Pallis (fishermen caste) and Telugas, were engaged in this industry. The only raw materials and implements required are a hook and cotton. Most of the workers buy the thread locally or from an agency in Madras. On an average each woman works at her home for about six hours a day after attending to her household duties and earns 6 to 8 annas. The daily earning of a girl worker is at present 4 annas. A quick and skilful worker is said to earn about Rs. 15 and others about Rs. 12 per mensem. The merchants and the middlemen who trade in lace pay for the work by the piece, the price being determined by the quality of the work and the time spent in producing it and there are fixed prices for certain patterns which are made according to the required standard. Most patterns consist of a mixture of leaves, roses and edging worked together in the shape of a doyley or a table centre, etc. Some women specialize on leaves, others on roses, and others on edging. The more skilled workers join the separate parts together and hand over the finished work. The kinds of lace prepared are (1) doyleys, (2) table centres, (3) tea cloth borders, (4) oval centres, (5) canisele tops, (6) bonnets, (7) pillow cases,

(8) night dress cases, (9) lace edgings (lace by the yard), (10) table runners, (11) pin cushion covers, (12) tea cosey covers and (13) door and window curtains. There are also several designs in each pattern. Door and window curtains are made to order only. The overseas price of the above patterns varies from 3 s. 6 d. to £ 14 4 s. per dozen which include packing and freight charges. There has undoubtedly been a decline in the lace sales during the past four years. During 1921 to 1924 there were about 15 merchants at Palakole and Narsapur exporting about five lakhs worth of lace every year; but at present the number of lace dealers has come down to eight and the demand for lace has undergone considerable contraction. The following causes have contributed to the decline : -

(1) Change of fashion. Nowadays lace is used more for decorative purposes than as an item of apparel. Hence there has been a serious fall in the demand for lace and embroidery throughout the world.

(2) Keen competition of Japanese lace which is cheaper and also of machine-made lace of other countries.

(3) High import duty levied in the United States of America and other countries.

(4) At present the same patterns of lace which have been in existence for about 20 years are still being copied. Embroidery work and pillow lace are now more popular than crochet work and find a wider market, crochet lace appearing to be out of fashion and out of favour.

APPENDIX II

LIST OF VILLAGES WITH APPROXIMATE NUMBER OF CROCHET LACE WORKERS IN ANDHRA PRADESH

S. No.	Name of village	Approximate No. of croch- et lace workers	S. No.	Name of village	Approximate No. of cro- chet lace workers
(1)	(2)	(3)	(1)	(2)	(3)
WEST GODAVARI DISTRICT					
NARSAPUR TALUK					
1	Aratlakatta	200	40	Penumanchili	150
2	K. Chikkala	200	41	Karugorumilli	400
3	L. Koderu	200	42	Valluru	400
4	S. Chikkala	200	43	Vaddiparru	150
5	Tillapudi	300	44	Boorugupalle	700
6	Mallavaram	100		Doddipatla	
7	Matchapuri	1,500	45	Abbirajupalem	400
8	Tundurru	600	46	Kanchusthambhampalem	300
9	Komatithippa	200	47	Kattupalem	300
10	Saripalem	2,000	48	Matlapalem	200
11	K. Bethapudi	500	49	Siragalepalle	150
12	Kopparru	500	50	Medapadu	600
13	Likhitapudi	300	51	Adivipalem	300
14	Saripalle	200	52	Gaggiparru	200
15	Agarru	200	53	Konteru	700
16	Agartipalem	150	54	Kaza	400
17	Gorintada	500	55	Utada	200
18	Sagamchervu	50	56	Elamanchili	200
19	Chittavaram	400	57	Chinchinada	500
20	Digamaru	300	58	Kalagampudi	200
21	Varidhanam	400	59	Polavaram	250
22	Palacole	6,000	60	Y. V. Lanka	400
23	Penumadum	600	61	Navarasapuram	100
24	Mattaparru	150	62	Chinamamidipalle	200
25	Vedangi	500	63	Narsapur	6,500
	Vedangipalem		64	Rustumbada	500
26	Polavaram	150	65	Seetharampuram	1,500
27	Mentepudi	250	66	Laxmaneswaram	2,000
28	P. Villuru	100	67	L. B. Cherla	800
29	Poduru	200	68	Pasaladeevi	50
30	Gummuluru	100	69	Akanavarithota	200
31	Achanta	700	70	Mogalturu	1,600
32	Deva	200	71	Pippallavarithota	400
33	Mulaparru	50	72	K. P. Palem	500
34	Nadipudi	100	73	Mutyalapalle	800
35	Chinamallam	200	74	Kalipatnam	300
36	Kodamanchili	300	75	Perupalem	600
37	Pedamallam	400	76	Toorputallu	100
38	Koderu	200	77	Vemuladeevi	400
39	Kandaravalle	350	78	Thotavarimeraka	100
BHEEMAVARAM TALUK					
1	Veeravasaram	250	6	Srungavruksham	300
2	Seesali	500	7	Toleru	300
3	Gollavarithippa	200	8	Nauduru	400
4	Beehmavaram	1,000	9	Konthivada	200
5	Taderu	400	10	Madugupolavaram	100

S. No. (1)	Name of village (2)	Approximate No. of cro- chet lace workers (3)	S. No. (1)	Name of village (2)	Approximate No. of cro- chet lace workers (3)
BHEEMAVARAM TALUK —Concl'd.					
11	Chintalakotigaruvu .	300	15	Doosanapudi .	150
12	Rayakuduru .	300	16	Mavuduru .	250
13	P. Vemavaram .	200	17	Velamadurru .	150
14	Tokalapudi .	250			
TANUKU TALUK					
1	Komarru .	1,500	7	Penugonda .	500
2	Attili .	500	8	Malleswaram .	200
3	Relangi .	500	9	Nakkavaripalem .	400
4	Peravali .	200	10	Siddantam .	100
5	Kakileru .	200	11	Ramannapalem .	1,000
6	Maruter .	100			
EAST GODAVARI DISTRICT					
KOTHAPETA TALUK					
1	Bellampudi .	100	6	Thadalvaripalem .	250
2	Kothapeta .	100	7	Thatikayalavaripalem .	150
3	Gantipedapudi .	200	8	Pedapudi .	200
4	Udumoodi .	300	9	Yenugupalle .	400
5	Yerramchettivaripalem .	200	10	Gangalakurru .	100
RAZOLE TALUK					
1	L. Gannavaram .	1,500	22	Lakkavaram .	200
2	Mondepulanka .	150	23	Visweswarayapuram .	500
3	Manepalle .	300	24	Battelanka .	300
4	Nagullanka .	200	25	Kathimanda .	300
5	Pedapatnamlanka .	500	26	Rama Raju Lanka .	300
6	Tatipaka .	200	27	Appanaramunilanka .	100
7	Jaggannapeta .	200	28	Tekisettipalem .	600
8	B. Savaram .	200	29	Sakhinetipalle .	300
9	Razole .	700	30	Rameswaram .	700
10	Sivakodu .	200	31	Antarvedipalem .	2,000
11	Chintalapalle .	150	32	Mori .	300
12	Pothumatla .	250	33	Srungavarapupadu .	500
13	Pippallavarimeraka .	150	34	Adivipalem .	200
14	Rudravarimeraka .	200	35	Chintalamori .	200
15	Kadali, Adurru .	400	36	Chinakesanapalle .	1,000
16	Gogulamatham .	400	37	Pedakesanapalle .	1,000
17	Katrenipadu .	600	38	Ayodhyalanka .	100
18	Ponnamanda .	700	39	Mamidithota .	250
19	Munikipalle .	400	40	Merakapalem .	200
20	Koonavaram .	300	41	Pedatippa .	250
21	Gudapalle .	300	42	Puchchallanka .	100
AMALAPURAM TALUK					
1	Nallacheruvu .	150	10	Vadalarevu .	300
2	Kothalanka .	300	11	Komaragiripatnam .	250
3	G. Vemavaram .	400	12	T. Challapalle .	600
4	Janipalle .	200	13	Ghadala .	150
5	Nadipudi .	150	14	Savarapupalem .	200
6	Ambajipeta .	300	15	Koonavaram .	300
7	Machavaram .	200	16	Munjavaram .	250
8	Bendamoorlanka .	300	17	Munjavaramkottu .	150
9	Amalapuram .	800	18	Varichettivaripalem .	150

—Cont'd.

S. No. (1)	Name of village (2)	Approximate No. of cro- chet lace workers (3)	S. No. (1)	Name of village (2)	Approximate No. of cro- chet lace workers (3)
KRISHNA DISTRICT					
BANDAR TALUK					
1	Laxmipuram .	200	4	Kruthivennu .	200
2	Chinasandala .	150	5	Garisipudi .	150
3	Pedasandala .	150	6	Seethannapalle .	150

APPENDIX III

LIST OF MEMBERS OF THE ALL INDIA CROCHET LACE EXPORTERS' ASSOCIATION, NARSAPUR

<i>S. No.</i>	<i>Name of company</i>	<i>Caste of proprietor</i>	<i>S. No.</i>	<i>Name of company</i>	<i>Caste of proprietor</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>
1	M/s. M. S. Manyam & Son, Narsapur	Agnikula-kshatriya	31	Sri A. Vykuntam, Seetharampuram	Telaga
2	M/s. Lion Trading Co., Narsapur	-do-	32	M/s. B. Hanumanth & Son, Palacole	-do-
3	M/s. P. Janardana Rao & Co., Narsapur	-do-	33	Sri Ch. Govanthi Sathimayya, Narsapur	-do-
4	M/s. Sun & Co., Narsapur	-do-	34	Sri Ch. Anand K. Chidnamurthy, Seetharampuram	-do-
5	M/s. A. S. Narayana & Co., Narsapur	Brahmin	35	M/s. Ch. K. Anand Chidam & Son, Seetharampuram	-do-
6	M/s. Ch. S. Achari & Co., Narsapur	-do-	36	M/s. Ch. K. Anand & Co., Seetharampuram	-do-
7	M/s. Kopparti Sundaramaiah & Co., Kopparti	-do-	37	M/s. Eastern Lace Industries, Narsapur	-do-
8	M/s. Northern Circars Industrials, Narsapur	-do-	38	M/s. Godavari Lace Industries, Narsapur	-do-
9	M/s. Brightlands Home Lace Industries, Narsapur	Christian	39	M/s. Ideal Lace Industries, Narsapur	-do-
10	M/s. Ch. Devadanam & Sons, Palacole	-do-	40	Sri Inukonda Satyanarayana Murthy, Agarthipalem	-do-
11	M/s. D. S. Somanna & Sons, Grace Land, Amalapuram	-do-	41	M/s. Jhama & Jais Bros., Narsapur	-do-
12	M/s. Jonah & Joseph Bros., Narsapur	-do-	42	M/s. Jolly Lace Works, Akamavanthota	-do-
13	Sri K. Krishanandam, Rose Villa, Narsapur	-do-	43	M/s. Kondaveti Satyanarayana Murthy & Co., Seetharampuram	-do-
14	M/s. Luciana Industrial Home, Peravali, Lamuku Taluk	-do-	44	Sri Koppaveedi Kesava Rao, Kaza	-do-
15	M/s. Manohar & Sons, Narsapur	-do-	45	M/s. K. Ramachandrudu & Co., Seetharampuram	-do-
16	Sri M. Gnanu Sundaram Simon, Narsapur	-do-	46	M/s. K. Sambamurthy & Co., Seetharampuram	-do-
17	M/s. V. P. Harry & Co., Narsapur	-do-	47	M/s. K. Satyanarayana Swamy & Co., Narsapur	-do-
18	M/s. P. Venkanna & Co., Palacole	Gowda	48	M/s. K. S. Naidu & K. V. Rao & Co., Palacole	-do-
19	M/s. Oriental Lace Manufacturing Co., 10-62, Seethampet, Rajahmundry	Kalavant	49	M/s. K. S. Raju & Co., Narsapur	-do-
20	M/s. Ramanujam Sons, Narsapur	-do-	50	M/s. Doyds Lace Industries, Narsapur	-do-
21	M/s. D. V. M. & Co., Narsapur	Kshatria	51	Sri Maddala Tataji Rao, Seetharampuram	-do-
22	Sri M. Meiya Sheriff, Narsapur	Muslim	52	M/s. Malay Pullayya & Co., Narsapur	-do-
23	Sri K. Veeram Chetty, Digumarru	Settubahija	53	M/s. M. Narasimha Rao Bros., Seetharampuram	-do-
24	M/s. A. Achutharamayya & Vykuntam, Seetharampuram	Telaga	54	M/s. P. Pothuraju & Co., Narsapur	-do-
25	Sri Adabala Narasimha Murthy, Seetharampuram	-do-	55	M/s. P. S. Narayana & Sons, Seetharampuram	-do-
26	Sri Addagalla Neelakantam, Seetharampuram	-do-	56	M/s. Reliance Trading Co., Narsapur	-do-
27	Sri Akana Swamy Naidu, Seetharampuram	-do-	57	M/s. S. M. Lakshmi & Co., Seetharampuram	-do-
28	Mrs. A. Narasamamba, Seetharampuram	-do-	58	M/s. Star Lace Industries, Narsapur	-do-
29	Sri Augisetti Narayanamurthy, Bhimavaram	-do-	59	Sri Sunkara Brahmanna, Bhimavaram	-do-
30	Sri A. Venkatraidu, B. Sc., B. L., Advocate, Narsapur	-do-	60	M/s. T. R. Swamy & Co., Narsapur	-do-

—Contd.

<i>S. No.</i>	<i>Name of company</i>	<i>Caste of proprietor</i>	<i>S. No.</i>	<i>Name of company</i>	<i>Caste of proprietor</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>
61	M/s. U. S. R. Swamy Sons, Narsapur	Telaga	64	M/s. Andhra Lace Industries, Narsapur	Vaisya
62	M/s. Venkateswara Traders, Seetharampuram	-do-	65	M/s. Circars Home Industries, Narsapur	-do-
63	M/s. Vital & Co., Tillapudi, Bhimavaram Taluk	-do-	66	M/s. S. Purushotham & Co., Seetharampuram	Washerman

(ii) STUDDED BANGLES OF HYDERABAD CITY

SECTION I

INTRODUCTION

Emanating from Charminar, the most famous landmark of Hyderabad city, runs to the west a road known as the Lad Bazaar, a busy crowded street with numerous shops all through (Plate I). On the right hand side of this bazaar, commencing from Charminar, is a row of shops, as many as 25 in number, dealing in bangles. And it is these shops in the Lad Bazaar that constitute the centre of the famous studded bangles of Hyderabad which have occupied, through a chequered period of 5 to 6 generations, a proud and privileged position in adorning the graceful wrists of many beautiful and aristocratic women of Hyderabad.

2. It is interesting to observe that the history of the origin of this handicraft, which started with a group of families in the beginning, goes as far back as the Qutubshahi days. It is believed that the pioneers of this craft had come to the city as *hakims*, who were experts in curing carbuncles, at the invitation of the then Shah who was suffering from carbuncle. Thus the first bangle making craftsmen entered this city as native doctors or *hakims* in the Court of the Shah. Not content with this profession and prompted by curiosity, they were said to have taken to this occupation later.

3. The author of the *Baghe Char Chaman* writes, "As the trade relations between Golconda and Persia were cordial, a group of Persians whose main occupation was *hakimi* and subsidiary occupation bangles making, had come to Golconda at the invitation of the King and settled down here. Therefore bangle making industry started in Hyderabad only in Qutubshahi period."¹ However, a contrary version goes to say that the workers might have migrated from the Vijayanagar Kingdom. "There was a regular trade relation between Hyderabad and Vijayanagar Kingdoms in between 15th and 16th centuries. During this period Vijayanagar was the main centre for manufacturing the glass bangles and were sent to Golconda as it was the main market centre. As such a few families engaged in this industry might have migrated from Vijayanagar to Golconda and settled down permanently after the downfall of Vijayanagar Kingdom."²

4. This craft of bangle making first started with a group of families working on a small scale assisted by the female members in them. Then they used to carry their loads to temple fairs or sell them to families at their doors. Slowly these bangles captured the attention and curiosity of the womenfolk and thus a great impetus was given to the families engaged in this craft. But, their investment capacity could not increase *pari passu* with the expansion of market. It was at this stage a few shrewd businessmen entered and tried to capitalise the situation. They gathered a few skilled workers and started a workshop. The increase in the demand prompted a few more businessmen who soon started workshops with groups of skilled workers.

5. It is not out of place to mention here the views of a manufacturer about the beginnings of the craft in the city. As far as the knowledge of Sri Ramareddi, the owner of a shop under his name, goes, the craft of studded bangle making was originally started in Hyderabad about 175 years back. It was during the time of the father of Mir Mahbub Ali Pasha *i.e.*, in the period of the 3rd generation previous to the present Nizam Mir Osman Ali Khan Bahadur that the bangles started to be made at Hyderabad. It only started with ordinary bangles of cheaper quality. What is still called Lad Bazaar was the place where all the buildings were constructed to house the sweethearts of the ruling Nizams of the bygone days and belonged to Serf-e-Khas estate from the beginning. The street was therefore affectionately called Lad Bazaar or Street of Love. Hindus of castes Besta, Mudiraj, Kapu, Reddi and Golla, and Muslims have been engaged in the craft in production as well as in trade.

6. This handicraft was first started in the city and even to this day Hyderabad claims to be the only place making this variety of bangles, *i.e.*, the stone studded bangles. All the workshops engaged in this handicraft are located in Lad Bazaar. The location of the workshops as well as the shops where these bangles are available enjoy the advantages of

¹ Mohd. Hussain, *Baghe Char Chaman* - MSS-Urdu (Lucknow Edition, 1935)

² Mohd. Yazdani, *Archaeological Report* (of Hyderabad), 1929, pp. 22-23

location. Charminar has been and still continues to attract many a visitor and invariably these visitors are tempted to visit these shops, which display a variety of bangles in different designs and in different hues. The temptation becomes so irresistible that they step into one shop or the other and be delighted at the very sight of the bangles displayed in the show cases. (Plate 2 shows a sample collection of the sets of studded bangles).

7. The growth and expansion of this craft gives us some very interesting points. This craft as it was first started, was started not as at present.

If we look forty or fifty years back, the different designs worked out on bangles would clearly show that it was started with bangles mostly studded with glass pieces, using lac of the chocolate colour. The reasons are not far to seek. First, the craft was in its infancy and hence the improved designs could not be adopted. Second, the craft started as a household one and hence had the investment difficulties and third, the stones of different sizes and colours were not easy to procure and perhaps the taste of the customers too might not have developed to the present level.



Plate 1. Lad Bazar, Hyderabad City as viewed from Charminar.



Plate 2. A sample collection of the sets of studded bangles.

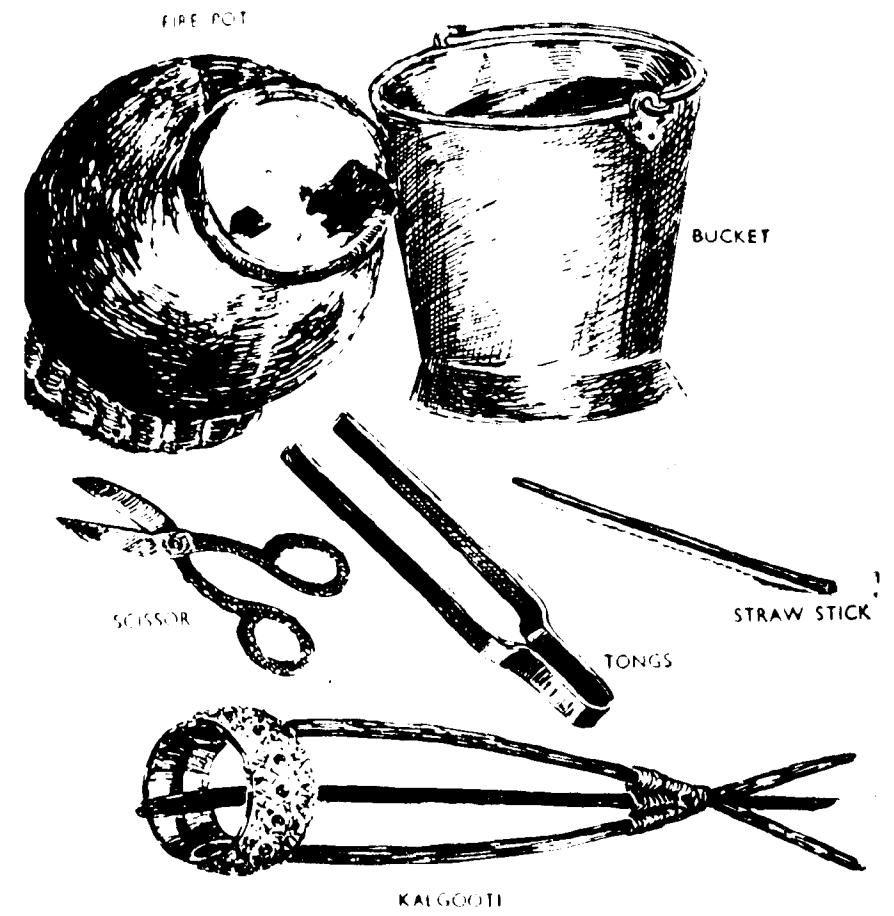


Plate 3. Tools.



Plate 3A. A worker preparing lac bangles.

— Courtesy: Sri S. R. K. Rao, Deputy Director of Information and Public Relations, Andhra Pradesh.

SECTION II

TECHNIQUE OF PRODUCTION

Process of studding the stones

8. The studding process of stones is done at the shops themselves in most cases with the result that the units are workshop-cum-shops. Whereas the workshop is located upstairs portion, the sales shop is situated in the downstairs of the same building. There are 13 such units which are workshop-cum-shops in this street, all the rest being only sales depots of goods bought wholesale from other manufacturers.

9. Broadly, the process of manufacture consists of only two stages, namely—(i) preparing a lac surface on ordinary glass bangles and (ii) affixing the stones on the lac surface. The tools required are very simple, as also the raw materials of the craft. The raw materials which are necessary for the production process are:

- (i) Glass bangles of ordinary type
- (ii) Glass bangles of a finer variety and gold tinge
- (iii) Lac
- (iv) Jewellery stones
- (v) Charcoal
- (vi) Washing soap

The tools and implements used in the process are:

- (1) Charcoal stove
- (2) Scissors
- (3) Tongs
- (4) *Kalgooti*—a type of wooden frame for holding the bangles on fire
- (5) A thin iron rod of one foot length
- (6) Small sticks of straw

Some of the above tools are seen in Plate 3. The cost of all these tools does not exceed Rs. 6 on a rough estimate.

10. The workman sits in front of the stove. The stove is nothing more than an earthen pot filled with burning charcoal upon layers of grass and ash. The pot is placed in a slightly slant position facing

outwards (See Plate 4) for obviating the stroke of direct heat wave to the worker. By the side of the stove is always kept ready a small bucket of water to meet any possible danger of fire.

11. The *kalgooti* is held at its trunk in left hand by the worker and a convenient number (say 8 or 12) of glass bangles of ordinary type (which are kept in a heap by the side of the worker) are mounted at the wide end of the *kalgooti*. It is well to remember that the ordinary glass bangles are not prepared here but are purchased in the market. The bangles are then held over fire and heated slowly. The lac which is in the form of a handy slab is taken with the right hand, exposed to the fire and heated to such a degree as to make it pasty and adhesive. It is then applied in a thick layer to the row of the bangles held on the *kalgooti*. It is pasted uniformly around the bangles. The lac is available in several colours like white, red, green, rose and yellow and is used according to the needs of the design or taste and choice of the customers. Afterwards, one bangle is cut off the row with the scissors by separating it from the layer of the lac and brought a little forward on the *kalgooti*. The layer of the lac is cut uniformly with the scissors and trimmed round the surface, at the same time exposing the article to the fire to keep the lac smooth and easy to cut. The pieces of lac cut off are again attached to the lac paste which is smeared to the bangles on the *kalgooti*. A single bangle with lac surface round it is enough in width for studding stones in a single row. Therefore, the lac surfaced bangle now prepared is ready for being decorated with stones of choice round it. In case the stones are to be affixed in 2 rows or 3 rows round the surface and some designs are also to be chalked out while affixing stones on the lac surface, the surface should be broad enough to contain all of them. In that case a batch of 2 or 3 glass bangles held together with the lac-smeared surface on them is taken forward and trimmed as mentioned above. Two *sonabai* bangles are attached to it on either side. These bangles are very thin glass bangles with golden tinge. They are machine-made and fine to look at. They are, however, very cheap in quality. So also, there are *chandibai* bangles with a silver tinge. These *sonabai* bangles are selected to be of the same size and they are pasted

to the slightly heated lac surface. The lac bangle then looks attractive with the golden tinged *sonabai* on either side with all the smooth even surface round it. It is then ready for studding stones to it.

Affixing the stones on the lac surface

12. This operation is also simple. The design along which the stones have to be studded on a particular set of bangles is kept in view by the craftsman. Usually no model or design worked on paper is supplied for guidance because all the workers are supposed to be well conversant with the various designs. Whether it be the studding of stones in one line, 2 lines or along a pattern, the process is the same. The choice of the stones to be affixed rests with the owner or proprietor of the workshop. According to the demands of the customer or the probable cost of the pairs to be made, the proprietor selects the stones to be studded and gives them to the workman with instructions as to on what lines they have to be affixed, of what size and with what combination of the coloured stones. The quality of the stones varies largely. The cost of the bangles depends on the quality of the stones whether the latter are of the cheaper type or costlier type. So also, the sizes and colours of the stones differ in each of the varieties of quality. The stones to be affixed are taken by the worker. The lac bangle is exposed to heat with the help of the *kalgooti* held in the left hand. The lac slightly melts and becomes pasty. In the right hand is held a straw stick (taken from the usual broomsticks) of 5 to 6 inches in length. The stones or *chatons* (*chatons* is the name used for moulded stones, that is molten glass is poured into moulds to form crystals resembling jewellery stones) to be used are poured in a small tin contain-

er and kept on the outer surface of the pot furnace, so that they also get heated a little. The end of the straw stick is touched to the tongue of the worker, so as to make it wet and then it is touched to the stone. The hot stone readily adheres to the wet end of the straw stick; then it is transported to the gummy surface of the lac bangle and planted there (Plate 4). In this way all the required number of stones are planted one by one by holding the bangle mounted on *ka'gooti* over fire in left hand to keep it hot as long as the process continues; and holding the straw stick in the right hand, picking up warm stones with the wet end of it and inserting them on the gummy lac surface either in rows or along other patterns. The process is completed as soon as all the stones are affixed. The finished bangle is left on the floor and it cools down. After this process is over, the stone studded bangles are ready. They are then washed with ordinary washing soap to cleanse of all dirt etc., and to bring out a glow of shining to the stones in the bangles. The simple bangles are thus rendered into tasteful and delightful designs which are then sent to the shopkeeper who arranges them in the show cases for display and sale. These bangles, the very sight of which in the show cases is a source of delight, are the pride of the city.

13. A thin thread of coloured lac suitable to match with the surface of the finished bangle is drawn on it in some of the patterns e.g., 'Mother India'. This decoration obviously goes to enhance the appeal created by the bangles. The lac is kept in the form of knobs at the end of thin bamboo sticks so as to be convenient to apply for this purpose. Please see Plate 5.



Plate 4. Workers studding the stones to lac bangles.



Plate 5. A worker decorating the surface of a finished bangle with lac thread.

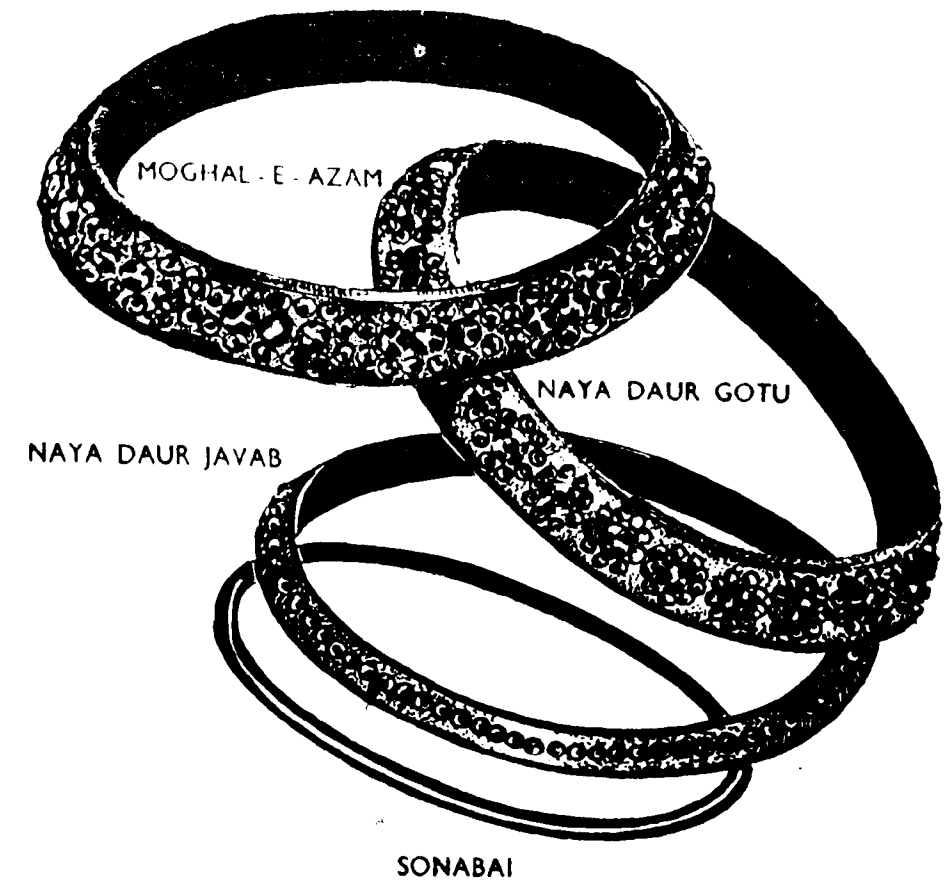


Plate 6. A few designs.



Plate 6A. A fine selection of the studded bangles.

—Courtesy: Sri S. R. K. Rao, Deputy Director of Information and Public Relations, Andhra Pradesh.

SECTION III

DESIGNS

14. To start with, bangles studded with glass pieces alone were made mainly because of the non-availability of stones and perhaps of the lack of sufficient knowledge about the stone studded designs. The ornamentation on the lac bangles was being done only with *masala* (small pieces of shining aluminium foils) zari, and also glass pieces. Even now such bangles with *masala* and glass pieces have not entirely gone out of market. Some of the names of these patterns are as under :

- (1) Pannas
- (2) Kangan
- (3) Jalm-i-chamki
- (4) Kanjar
- (5) Zulp Zam Zari
- (6) Murag Sina

With the passage of time some of the above names have been changed to those of modern cinemas so as to be charming to the present day customers; for instance 'Pannas' has become 'New Delhi' and 'Murag Sina' has changed to 'Ek-hi-Rasta'.

15. As these bangles gained popularity, the worker began to work out different designs especially of the stone studded types which within no time could capture the fancies of many a damsel.

16. The designs or types in which the studded bangles are made are too many. It is scarcely possible to list out the names of the various designs which are in vogue at a particular time. The designs are chosen by the customers according to their tastes and needs, and it is up to the manufacturer to prepare and supply them. A single change in the arrangement of the arrays of stones perhaps creates a new design. It is given a name which strikes the craftsmen or the trader and henceforth that pattern would be known after that name. For suggesting a multiplicity of attractive names the modern cinemas provide a ready and handsome catalogue. In this way, many of the popular designs go by the names of Hindi or Urdu movies which have had a successful run in the city of Hyderabad in recent years. The name of a once popular picture which holds the fascination of youth augments the demand for a design or pattern of bangles bearing that name. The idea seems to be that the bangles of the types which are named after

a particular movie adorned the wrists of the heroine in that picture.

17. It is very important to note that the skilled worker out of sheer intuition could work out attractive designs. This skilled worker is a curious observer of many artistic designs wherever he finds them. Sometimes the skilled and intelligent craftsman working in the workshop of a particular dealer creates a new variety by working a few alterations in the arrays of stones and the colours used of stones in an existing set of bangles. That new pattern is displayed in the show cases of that shop with a name attached to it. It would be watched if it could catch the fascination of the women customers who visit the shop. If it did so, more and more sets would be put to preparation and that way the new design holds the market. In the initial stages it remains to be the monopoly and trade right of the shop in which that design was invented; afterwards the other shop-keepers come to learn the technique and manufacture it when it reaches them through the demand of the customers or through some of the co-workers themselves perhaps clandestinely. A few of the names which commanded the market in the yester-years and the patterns they represented are given below :

- | | |
|---------------------------------|--|
| (i) Sarras | A pattern with stones studded in a single line. |
| (ii) Louze | A pattern with stones arranged in two lines. |
| (iii) Satpuli or Kabuthar Ankh | Stones studded in three lines with one colour stone in the middle. It dazzles like an eye of a dove. |
| (iv) Kanjar | Five stones in alternate colours in the form of an inverted 'V'. |
| (v) Kulasathpuli | One colour stone in the middle with six white stones around. |
| (vi) Simti Sadak or Cement road | A pattern flat and white as suggested by the name. |

Of course, most of them still sustain the interest of the present day customers also.

18. The latest phase in the development of studded bangles designs seems to be a curious blend of the cinema styles and the ingenuity of the worker. The latest designs are no more the products of the intuition of the designer; on the other hand, they are imitations of the designs of the bangles worn by the film stars. These few names of designs are on every body's lips:

- (1) Jhansi ki Rani
- (2) Anarkali
- (3) Mother India
- (4) Jhanak Jhanak Payal Baje
- (5) New Delhi
- (6) Choti Bahen

- (7) Laddi Pusti
- (8) Moghal-e-Azam
- (9) Kachni
- (10) Aqua Road

Of the 10 bangles mentioned above, (1) Laddi Pusti and (2) Moghal-e-Azam have attained more popularity than all others. One or two designs can be seen in Plate 6.

19. Having reviewed the different stages in the development of the craft and the designs, it is futile to search for the significance of those designs available in the market. The names themselves very well narrate their story. It is regrettable to note that there is very little scope for the ingenuity of the local workers regarding the designs. The modern cinemas have usurped, as it were, the place of intuition in matters of bangle designs.

SECTION IV

COST STRUCTURE

Cost of the raw materials

20. The cost of the materials that are needed for studded bangles is indicated in the table below:

Name of the material (1)	Source of supply (2)	Form of raw material (3)	Price (4) Rs. P.
Stones or chatons	R. Ch. Baraar, Bombay; C.P.L. Chatons Private Ltd., Bombay; R. S. Gupta Chatons Factory, Purdilpur, U. P.	Packets of 1,200 stones	From Rs. 2.25 to Rs. 49.00 according to quality
Black ordinary glass bangles	Gajulpet, Mahabubnagar District; Khajibanda, outside Hyderabad	Packets of 10 x 24 (10 dozens of pairs)	1.00
Sonabai bangles	Ferozabad	12 x 24	2.12
Lac	Local bazaar	Slabs of $\frac{1}{2}$ Kg. (white)	5.00
Glass mirrors	Ferozabad	Bundle	10.00
Masala*	Local bazaar	10 gr.	1.50 to 2.50
Charcoal	Local bazaar	Quintal	20.00
Soap	Local bazaar	Cakes	...

Cost of production:

21. The cost of production of one set of studded bangles of each of the following two patterns as

given out by Sri Ramareddi, the manufacturing proprietor of a shop under his name is as follows.

Name of material (1)	Moghal-e-Azam		Naya Daur	
	Unit (2)	Cost (3) Rs. P.	Unit (4)	Cost (5) Rs. P.
1 Sonabai bangles	40 in number	0.37	40 in number	0.37
2 Black bangles	8 in number	0.06	8 in number	0.06
3 Stones (moulded)	1,200 in number	2.56	1,200 in number	4.20
4 Stones (cut)	...	...	100 in number	3.00
5 Lac	...	0.25	...	0.37
6 Mazdoori	...	0.76	...	1.00
	Total	4.00		9.00
	Sale price	5.00		10.00
(A set comprises 8 bangles)				

The size of the above sets is 2 $\frac{1}{4}$ " (inner diameter). The moulded stones as well as cut stones used are of Indian make. The colours used in the stones for Moghal-e-Azam are aqua, red, white etc., while for the Naya Daur they are white, green, blue etc.

* It is the term used by the trade and workers for the pieces of aluminium foils. Besides the normal white shining, the foils are also lent a golden tinge by means of a certain lac process. The foils are cut into small pieces of round and triangular shapes and sold ready-made in the market by weight. These are manufactured at Bombay and are available with the local dealers at Hyderabad.

SECTION V

STORAGE AND MARKETING

Storage

22. The question of storage does not present any serious problem to the industry. Manufacture is mostly linked up with demand. The workshops are very small, engaging 3 or 4 workers only, and they are in most cases situated within the premises of sales shops. The proprietor is attentive to the sales trends and he gets produced only such designs as can be sold out. And, similarly more and more pairs are made and stocked which command more enquiries and sales at the hands of the day-to-day customers. The patterns and sizes which are already stocked in plenty and also those which have gone out of fashion or taste are not produced. Orders received from the customers are capable of being executed within a few hours notice; and also changes or alterations desired by the customers are carried out without delay. There is no scope for production far beyond the limits of demand; and there is no chance for stocks being stagnated or spoilt in course of time, resulting in wastage and loss. These are the conveniences and facilities of having production units combined with the sales counters.

23. All the bangles produced are first sorted into suitable pairs of same sizes and put round straw rolls of 6-10 inches length. The rolls contain other glass bangles (of *sonabai* type etc.) which go in combination with the studded types on ladies' hands. All these rolls are arranged in the shelves with glass doors (Please see Plate 7). The sparkling bangles displayed in brilliant hues under the incandescent lamp even during day time are sure to catch the thrill of many a girl and lady customer and they feel inclined instantaneously to possess a few of the exhibited articles for their own use irrespective of any price. The stocks which are in excess of the volumes of the shelves or almyrahs are stored in card board, wooden or tin boxes and also in bamboo baskets either in the space at the back of the almyrahs or on the top of them. It can be assumed that no stocks accumulate for more than a month and therefore there is no need for elaborate and long standing arrangements in this regard.

Marketing

24. Marketing is done mostly at the shops themselves in the Lad Bazaar. It is a daily affair.

Customers, mostly ladies, go about in the bazaar, enter into a particular shop of their choice, take their seat before the seller, men or sale-women, as the case may be, select the pattern, design and sizes of bangles from the lots presented by the latter, bargain the prices and finally purchase them or move on to another shop for further enquiries. Very common is the sight to see many ladies, among whom are Muslims and also *pardahishin* thronging to the shops by foot, by rickshaws or cars and do their shopping. The visitors to the famous Charminar, people from various parts of the State, nay, the country at large, go over to see the rows of bangle shops in Lad Bazaar and finish some deal or other in beautiful bangles to adorn the wrists of young ladies and adolescent girls. During the festival days, particularly of Ramzan and in the season of marriages, the sales for the studded bangles go high. It seems to be a custom among Muslims that the brides should wear studded bangles at the time of the wedding. It is said that purchase of Lad Bazaar bangles is a 'must' in customary and orthodox Muslim marriages of Hyderabad.

25. The All India Industrial Exhibition which is an annual feature in the city affords an excellent opportunity for introducing their designs to a greater number of customers. Many bangle shops display arrays of studded types among others for sale at the Exhibition. It is claimed that movie stars who came to Hyderabad for cinema shooting from Madras and elsewhere have found the bangles very attractive and made it a point to take scores of them for their own use and also for distribution to friends and relatives. Now-a-days more and more Hindus are going in for these bangles than they did in yester-years owing perhaps to the influence of movies and their stars. Some of the other centres which offer good market place for the studded bangles of Hyderabad are the annual *ursey* held at Kazipet, Gulbarga, Parbhani and Bhongir, tourist centres like Aurangabad (which was in the erstwhile Hyderabad State) and the other important cultural places like Bangalore, Mysore, Bombay and Madras. Occasionally some middlemen place orders for certain varieties and the shop-keepers get them prepared.

26. Marketing thus presents very little problem.

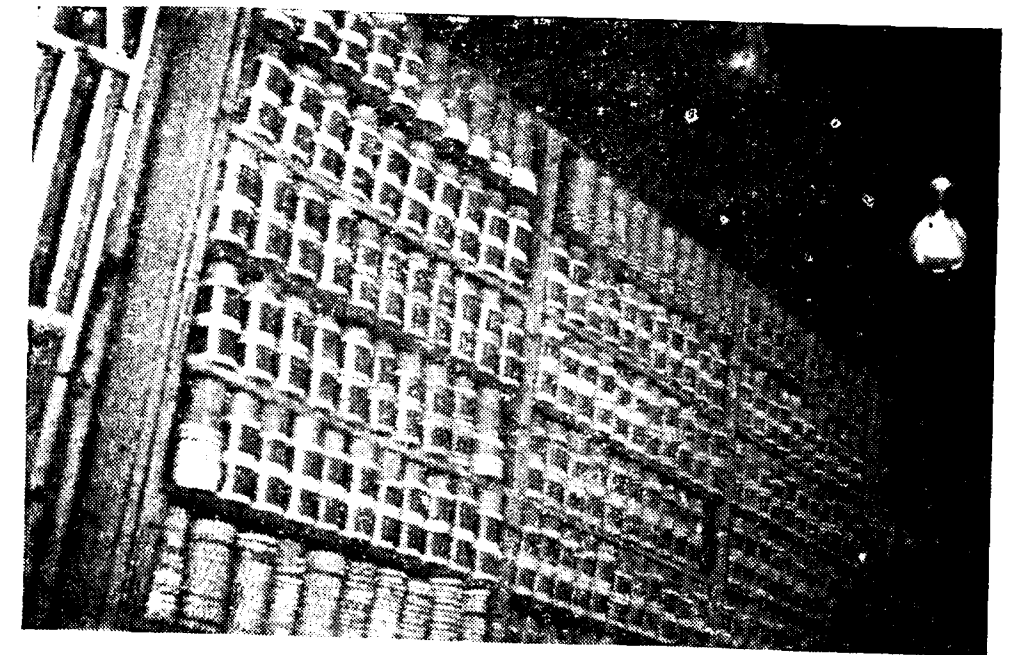


Plate 7. A display of the studded bangles in a shop.



Plate 7A. A lady customer at a sales counter.

— Courtesy: Sri S. R. K. Rao, Deputy Director of Information and Public Relations, Andhra Pradesh.

SECTION VI

WORKERS

27. The craftsmen or workers in the studded bangle industry mainly belong to 3 castes or communities namely, Muthrasi or Mudiraj, Munnur Reddis and Muslims. The total number of workers does not by all probability exceed 80. The Muthrasis number about 45, the Munnur Reddis about 25 and the Muslims 10. All the workers are males, excepting a single woman who belongs to weaver (Padma-sale) community and works at the workshop of Abdul Rahman. Many new people, mostly boys and adolescents, are learning the craft sitting with the proficient workers in some of the workshops. It is said that a new recruit can learn the craft upto a normal standard in 5 or 6 months. Though some of the craftsmen interviewed seem to be diffident about the prospects in the industry and express themselves against their children being put in the job, it is just possible that at least one boy in a family follows the traditional occupation of his family and finds his way into the craft of studded bangle making. Moreover, the women employed at the various sales shops for attending on the customers purchasing bangles are prone to bring their boys of suitable temperament and aptitude to the shops and induce them to learn the craft of bangle making by observing the work slowly. In addition to these two ways, there is the class of boys who want to learn the craft perhaps driven by their economic necessity or by mere enthusiasm to pursue an artefact of long standing reputation and prospects. Thus, a new generation of artisans is evolved to take place of the disappearing generation and to continue and pass on the craft to the next generation.

28. The persons who are engaged in the bangles making in any of the workshops are whole time workers; and they are dependent upon the craft as their only occupation. No subsidiary occupation is possible for them; and so also the studded bangles making is not merely a subsidiary occupation for anybody.

29. As in the case of all other handicrafts generally, economic condition of the craftsmen is poor. Though the wages in the erstwhile Hyderabad State before Police Action in 1948 were said to be low, still the workers could derive satisfaction out of

their earnings in those days when the cost of living was cheap. Now-a-days, after the States Reorganisation and consequent enlargement of the State and heavy flow of population from the rich coastal districts into the city, the market for the costlier type of studded bangles has received an impetus. This growth has been particularly perceptible during the last 2 or 3 years. The sales have increased, so also the profits of the manufacturers. But it is sad to notice that the condition of the craftsmen remains static. The proprietors have not done anything to ameliorate the conditions of the workers particularly when the cost of living is mounting up day by day.

30. The workers have to work throughout the week. On the day they do not work they get nothing. If they want to make a little more money they have to work for more hours in a day. On such occasions as Ramzan, when there is heavy demand for stone studded bangles, the workers work for longer hours. The maximum amount which a worker then can make is Rs. 5. The daily earnings do not ordinarily exceed Rs. 2 per worker. The usual working hours are from 10 a.m. to 6 p.m., with about one hour break for lunch in the afternoon. After having breakfast at their homes, the workers come to work, carrying their afternoon quota in tiffin carriers. They have thus their afternoon lunch at about 1 p.m., in the workshop itself; and after relaxation of a few minutes with a puff of cigarette or *beedi*, they resume their work. They normally get away from work at 6 p.m., unless a worker chooses to work overtime, which is permitted by the proprietor only when there is sufficient demand for the articles to be finished by him. After going home, most of the workers are said to drink in the nights *sendhi* (toddy) which they claim would have the effect of invigorating their system and make them fit for work the following morning.

31. As all the buildings which accommodate these bangle shops and workshops are very old, the workshops look very congested with low roof and very narrow stairs. No fans are provided, because furnaces are always there before each worker; and he has therefore to work throughout exposed to heat and sultry atmosphere, with heaps of charcoal on one side, bundles of black bangles on one side

and with ash ejecting from the pot furnaces now and then and with other materials like lac slabs, bottles of *masala* and the tools and implements strewn all over. Finished products also lay on the ground awaiting transport downstairs. All this carries not a happy picture of the workshop and the conditions under which the craftsmen have to work daily. But, there seems to be little scope for improving the conditions, unless and until the employers themselves evince interest in the welfare of their employees. This is not likely to be possible under the present circumstances. There is no organisation or union for the workers to look after their interests for amenities or better wages. Nor do the employers see eye to eye among themselves. There is unbecoming rivalry generated out of avarice for profits in the trade. When we think of the health hazards involved in the industry, mention must be made of the environments of the workshop.

32. As regards the quantum of outturn of a worker, it is difficult to lay down a norm applicable to all. A study of the wage-structure, however approximate it is, *vis-a-vis* the quantum of work turned by each worker in a single working day makes an interesting study. A set of studded bangles is usually taken to comprise 8 pieces, namely, 2 pairs of main pattern with the named design like Mughal-e-Azam etc., and 2 pairs of simple bangles with a single row of studded stones. Thus, 8

bangles—4 of main design and 4 of simple ones called *javad* form a set. A worker is expected to complete five sets in a day i.e., 40 bangles—20 of main designs and 20 of simple studs to go with the former. The worker is paid about Rs. 2 towards wages. The cost of the materials required for making a set of bangles is about Rs. 1-50 P. The cost of stones used may be about Rs. 2 per set. The five sets that the worker prepares in a day are, however, worth Rs. 20 to Rs. 40. If wages of the worker, the cost of the materials, and the cost of stones are deducted, still a big margin exists representing a big slice of profit that accrues to the shopkeeper, who is also the owner of the workshop. Thus is the plight of the craftsman who is behind the whole show. The above mentioned counting of workload applies to the process of studding stones only on the already prepared lac base. The operation of applying lac is much quicker and a worker engaged in it can cater to the needs of 3 workers for studding stones in a day. Except the general information about the wages earned by the workers in a day, it has not been possible to ascertain the exact basis upon which the wages are worked out. This was partly because the proprietors feared some government action if it was divulged that the workers were paid at unduly lower rates and also because the workers refrained from telling out the truth, lest they should incur the wrath of their employers.

Case Study 1

33. Sri Beeram Eswarayya (42) is a practising artisan in the studded bangle making industry. He is employed in the workshop of Sri Ramareddi. The workshop is located in the first floor of the shop of Sri Ramareddi, as is the case with many of the workshops of this type. Studded bangles of the required varieties are prepared here and displayed for sale in the shop below. When any special type is asked for by the customers at the sales shop, the order is booked and the required bangles are got made in the workshop immediately and are delivered to the customers within a short time of 5 to 6 hours. Repairs like refixing lost stones, remaking broken lac work etc., are attended to quickly in the workshop and are delivered back to the customers within no time. In this way, there is advantage of having workshop combined with the sales shop. Sri Eswarayya belongs to Reddi caste. He learnt the craft from his father at a very early age. He claims that this craft has been in their house since 4 generations i.e., since the time of Sri Eswarayya's great grand-father. Married at the age of 19 years, he has now seven children—4 sons and 3 daughters. Three sons are working—the eldest in a saw mill, the second in Hindi Milap Press and the third in Punjabi Furniture Works at Hyderabad. The other children are at school. Besides his wife and children, Sri Eswarayya's family includes his mother (60), his wife's elder sister (40) and her daughter (20).

34. Sri Eswarayya frequently works overtime also besides the usual working hours of 10 a.m. to 1 p.m., and 2 p.m. to 6 p.m. He is well conversant with all phases of the craft of manufacture of studded bangles. Some of the designs named by him as being made now-a-days are Mughal-e-Azam, Mother India, Naya Daur, Ek-hi-Rasta, Chalchal Nowjawan, Loujugotlu, Gulbahargotlu, Navranggotlu, Chamki-gotlu etc. Sri Eswarayya roughly estimates that he would have produced about 1,000 bangles a month for his employer Sri Ramareddi during the year 1963. Besides him, there are 2 workers in this workshop.

35. Sri Eswarayya has given out his monthly earnings as amounting to Rs. 150. His wife makes a

* Surname

SECTION VII

CASE STUDIES

sum of Rs. 5 from her activity on Ambar Charkha in a month; and the three sons put together earn Rs. 85. Thus the total income of the family is put at Rs. 240 p.m. There is an equivalent amount of expenditure for the family on food and clothing and other necessities. The cereal food items claim a lion's share of Rs. 140 out of the monthly income, and the non-cereals Rs. 30. The other expenditure items include Rs. 17 on fuel and lighting, Rs. 10 for house rent, and Rs. 25 miscellaneous. Approximately an amount of Rs. 200 is spent on clothing for the family in a year. It is said that the family members get some khadi clothing in exchange for the yarn spun on Ambar charka in their family.

Case Study 2

36. Sri Chakkala Sami (45) is another craftsman employed in the workshop of Sri Ramareddi. He belongs to Muthrasi caste and is a native of Hyderabad. He lives in Lal Darwaja area. His father was a carpenter. His usual working hours are from 10 a.m. to 6 p.m., with one hour break for lunch. He can make the studded bangles of any type that is asked of him. But he is more at ease in studding the stones on the already prepared base of lac bangles. Sri Sami was married at the age of 28 years. He has wife (29 years old) and 3 daughters in his family. The daughters are all below 8 years of age. The turnover of Sri Sami is about 600 bangles a month. His average income is said to be Rs. 60 per month. The monthly expenditure against this income comprises Rs. 40 on food grains and non-cereals, Rs. 10 on fuel and lighting and Rs. 5 on other items. He spends about Rs. 60 on clothing in a year.

37. Sri Sami is not satisfied with his lot in the bangle making industry and the existing working conditions in it because of the absence of fixed income and security of job due to wages being paid on turnover basis.

Case Study 3

38. Sri Havaladar * Venkatesam (35) is a craftsman of studded bangles in the employ of Haji Shaik Bhaley, Bangle Merchant, Lad Bazaar. He belongs to Muthrasi community and is a native of Hyderabad.

He lives in Mekalabanda area, Lal Darwaza. He learnt this craft from his father, who was also a reputed craftsman of this industry. He was married at the age of 17 years. He has 4 children, 2 sons and 2 daughters, of whom the eldest, a boy aged 15 years, is working as a mechanic in an automobile workshop. The second son is 9 years old and he is employed in a cloth shop. The girls are at school.

39. Sri Venkatesam works at the workshop, which is located in the 1st floor of the sales shop of Sri Haji Shaik Bhaley during the normal hours of 10 a.m. to 6 p.m., with one hour break for lunch. He is quite proficient with all types of work in studded bangles making. At the time of the visit, Sri Venkatesam was engaged in preparing lac base on ordinary bangles for studding of stones. In this workshop, where 5 workers are employed, he is allotted the job of preparing the lac base for all the bangles to be studded with stones by the other workers. He has thus to work on this single operation throughout the day and feed the other 4 workers with their requirements of lac work. Perhaps this monopoly of lac work by Sri Venkatesam is arranged because he is more qualified by experience for neat and quick execution of this job than the other workers. Some of the designs of bangles named by the craftsman under question as being much in demand now-a-days are: Jhansi-ki Rani, Anarkali, Mother India, Jhanak Jhanak Payal Baje, New Delhi, Mughal-e-Azam, Ek-hi-Rasta, Gulbahar and Ashrafi. The shop of Sri Shaik Bhaley has been of much standing and it was established at the time of his grand-father.

40. The average monthly earning of Sri Venkatesam are about Rs. 90 p.m. besides his two sons earning Rs. 10 each per month. The total family income is thus Rs. 110 a month against which the expenditure items comprise Rs. 80 on food grains and non-cereals, Rs. 5 each on drinks and fuel and lighting, Rs. 6 on house rent and Rs. 4 on miscellaneous. A sum of Rs. 120 is earmarked for clothing in a year. The economic condition of the craftsman is such that he could barely make both ends meet with his limited income. He is not able to save anything for the rainy day.

Case Study 4

41. Sri Mohammed Yousuf Khan (36) is another craftsman employed in the workshop of Sri Haji Shaik Bhaley. He belongs to one of the very few Muslim families who learnt the craft and depend upon it for their livelihood. His father, Sri Ahmed

Khan is also a craftsman of the studded bangle industry and still works at home to fulfil some individual orders which he receives from customers who have been familiar to him or his son. The craft is coming down from father to son in a hereditary way in this family. Sri Mohammed Yousuf studied upto III Form and he can speak English and Telugu, besides his mother tongue, Urdu.

42. Sri Yousuf works during the usual working hours daily at the workshop of Sri Bhaley. He is good at studding stones. He claims that he is capable of turning out any design. Some of the designs mentioned by him are New Delhi, Ek-hi-Rasta, Mughal-e-Azam, Agra Road, Jhanak Jhanak Payal Baje and Mother India. All are the names of Hindi cinemas which were screened in Hyderabad in recent years. Sri Md. Yousuf Khan was married at the age of 26 years. His aged father (65) and mother (50) also live with him. Besides parents and self, Sri Yousuf's family consists of wife (25), 3 sons and 1 daughter. The eldest one is a boy of 9 years and he is at school. Other children are too young. Sri Yousuf does not wish that his son when grown up should take to this craft of studded bangle making. He says that a white-collared job is preferable, because of the security of tenure and fixed income.

43. The monthly income of Sri Yousuf's family is Rs. 120 made up of Rs. 90 earned by himself and Rs. 30 by his father. Even this amount is hardly enough for such a big family as Sri Yousuf has. The items of expenditure are (i) Rs. 75 on food—cereals and non-cereals, (ii) Rs. 10 on drinks like tea and soda, (iii) Rs. 10 on house rent and repairs, (iv) Rs. 5 on education of children. He spends about Rs. 250 on clothing every year for the entire family. The family has no savings and hence little possibility of purchasing of any assets.

Case Study 5

44. Sri Chiranjeevi Ramareddi is a manufacturer and proprietor of the shop under his name. The profession of studded bangle making and dealing in that trade came down from the time of his grand-father Late Sanjivaiah. Late Sanjivaiah when he was 45 years old took to this craft and worked in it for 20 years thereafter. Sri Ramareddi's father, Late Krishnaswamy who took it up at such an early age of 10-12 years died only as recently as in 1962 at a ripe age of 85 years.

45. The workshop of Sri Ramareddi is situated the first floor of the sales-shop as is the case with most of the other such establishments in that street. It measures 9' x 15' and there is enough space for persons to sit before fire places conveniently and work on bangle making. The names of the 3 workers employed in this workshop at present are rvasri Beeram Eswarayya, Chakkala Sami and adaiah. The first named person seems to be the most efficient of the lot. At the time of the visit he was applying lac to sets of black bangles and preparing the base for studding stones, whereas the other two persons were working with stone studding. It was said that an efficient worker would be capable of preparing 3 complete sets of 8 bangles each from start to finish in a day. It was also understood that the wages of Sri Eswarayya ordinarily amount to Rs. 2.62 to Rs. 5.00 whereas rvasri Sami and Sri Yadaiah, earn Rs. 1.56 and Rs. 2.12 respectively in a day.

46. Among the raw materials utilised, the *chatons* or stones are the costliest, and therefore they are stocked with the proprietor downstairs and supplied to the workers as and when necessary. The other raw materials lay in the workshop. One or two small boys are employed in the shop-cum-work-

shop to carry errands and transport materials hither and thither. The women who attend on the customers at the sales shop have nothing to do with the workshop upstairs, unless they are also sent by the proprietor with messages to the workers, to get some repairs done instantly for a customer, etc. Of course, they have their afternoon lunch brought over from home in the workshop upstairs.

47. Sri Ramareddi's investment in the trade is said to be about Rs. 25,000. His daily sales amount to Rs. 250. As has been already indicated, it is one of the oldest establishments and also one of the biggest of its kind. Sri Reddi himself knows the art very well, though he hardly comes across any occasion for himself to sit before the furnace and work. He also stocks ordinary types of bangles for daily wear and those which match the studded sets to go with them. He keeps sufficient stocks of *chatons* and stones and is also in a position to supply them at cost to the co-traders for fulfilling their urgent needs, if any, owing to the shortage of a particular type. Being a member of the traditional family of studded bangle makers, Sri Ramareddi's knowledge of the craft and the trade in it is profound.

APPENDIX A

MANUFACTURE OF ORDINARY GLASS BANGLES AT MISRI GANI

A brief account of the manufacture of ordinary glass bangles at a place called Musi Camp near Hyderabad city is given in the paragraph below :

2. An indispensable adjunct to the production of studded bangles is the manufacture of ordinary bangles. A regular flow of the basic glass bangles is essential to keep the industry of studded bangles going on. Nearer the place where ordinary bangles are made, the better for the latter, so that we will ensure an unflinching and cheap supply. One industry which caters to the needs of the bangle-making in Hyderabad is the centre of ordinary black bangles, making situated in Miran Camp on the Khammam Road at the extremity of the Hyderabad City to its north-west direction. The unit is housed in an insignificant, old tin shed quite resembling an ordinary residential house with a yard beside it.

3. Sri Shaik Abdulla, who came down from Ferozabad, that famous bangle making centre in U. P., about 30 years ago is now the proprietor of the unit. One Marwari Surt by name Ramgopal was said to be dealing in those days in wholesale business of bangles importing the stocks from Ferozabad. He had to go over to Ferozabad frequently during the course of the trade; and after some time the idea of getting some craftsmen themselves down to Hyderabad and start production here itself struck him. Thus, Sri Shaik Abdulla migrated to Hyderabad. Surt Ramgopal ran the industry for 4 or 5 years, after which he gave up that business. But Sri Shaik Abdulla settled down at Hyderabad and continued production on his own account. That is how the industry extant now originated at Hyderabad and still the same gentleman runs it. Almost the whole of his family is conversant with the technique of production of bangles and it is a well established traditional craft with them. His eldest son Sri Ahmad Khan is the present active managing craftsman of the industry. Along with the family of Sri Abdulla, there are 6 people in the locality who originally came down from Ferozabad and they work with the former on wages. Altogether upto a maximum of 15 people are employed at the concern according to the exigencies of work and demand.

4. There are no main raw materials as such which go into the production of bangle industry as it exists at Misri Ganj. The present production here is confined to the bangles made out of old glass pieces and bangle pieces. The rejected or broken glass bottles and glass bangles are purchased from the collecting centres in Begum Bazaar. These pieces are sold, filled in gunny bags, at a rate of Rs. 2 per one maund (11.2 Kgs.). It is more or less a ready made material for the use by the industry. It is available at a very cheap rate and the process is very quick. Because it comprises the articles which had once already undergone production stages and assumed

shape, it is very easy to shape the sort of fish articles all over. The colors in the form of cobalt oxide are the only color that can be obtained here, of course, the coal for the furnace. Coal is necessary for the point of heat to reach high.

5. *am*. The furnace has the arrangement just like that of a steam engine. It is a reconstruction from a pit of about 4 feet depth in the ground. The coal burns in the center. There is an opening to replenish the coal below the grate. There are compartments to hold fuel like manure (called *tabalan*), around the furnace being put in circular work, so that each has its own pipe supplying and discharging on the flame over the furnace.

6. The tools and implements used are the following:

- Big spoon - *Kachha*
- Flat spoon - *Kacholi*
- Saliq*
- Mala*
- Kachhot*
- Hunnar*
- Pawda*

Plate 8 illustrates a set of these tools. Sir Ahmad Khan gave out that some of the tools were got from Ferozabad once in a way in large numbers so that they could last for several years. The bricks of fire clay used for the construction of the furnace or *bhatti* were got from Jabalpur originally.

7. First the glass pieces are sorted colourwise. They lay in heaps around and near about the fire place within easy reach of the workers. Fire is made with charcoal first in the furnace and then coal is added. After the furnace attains heat, the melting pans (*thalan*) are filled with glass pieces with the *karcha* (Please see Plate 9). Two persons have to work at each of the *thalan* to make bangles from the liquid glass melting in them. Therefore, out of the total 7 *thalan*, only those *thalan* are filled with glass pieces which are worked, as per the needs of the production programme. It is perhaps rare that the full complement of 14 persons sit all around the 7 *thalan* and work together. Then, 15 people are required in total at a time, the last being there for attending on the furnace, putting coal into it, and ejecting or removing ashes (from the *paali* arrangement at the bottom). While the furnace is burning, the glass pieces poured into the *thalan* slowly begin to melt as the temperature reaches high. After a short time the whole mass turns into a thick fluid, red hot, kindling like a flame. The liquid glass is like gummy paste capable of taking any shape readily as long as it is very hot.

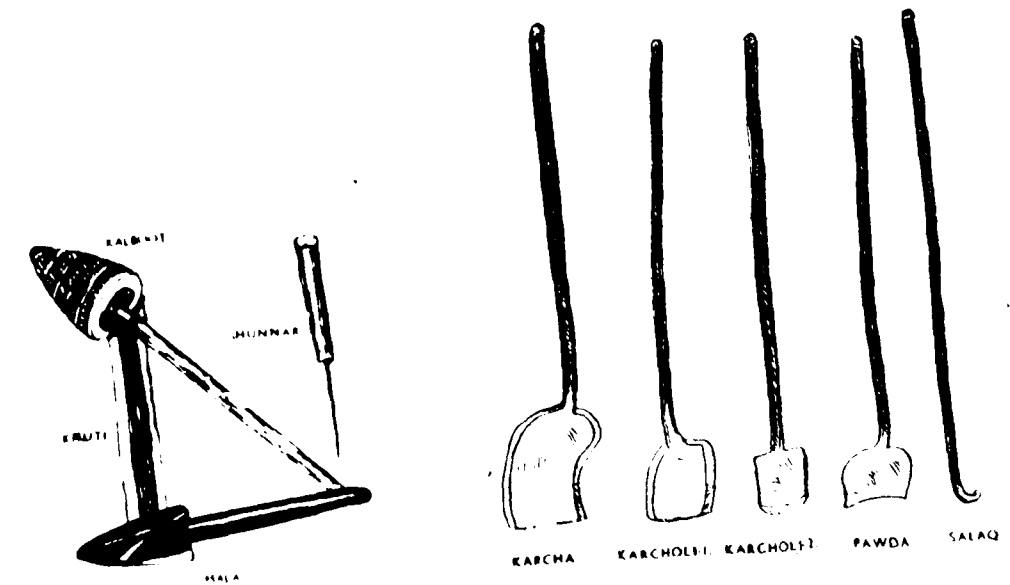


Plate 8. A set of tools for making ordinary bangles.



Plate 9. Glass pieces are being put into *thali* with a *kurcha*.



Plate 10. A bangle is made on *kalboot*.

8. At a distance of about 2 feet from the *thali*, a *kalboot* is kept fixed on a *khuti* with its tail end resting on a Shahabad stone. The head of the *kalboot* has the shape of a circular cone and is made of white clay. The conical shape is utilised for making the bangles of various sizes. The circumference of the bangle is less when it is made at the farther end of the cone and it becomes more and more when it is made at a place where the circumference is more and more of the conical *kalboot*. The iron rod of the *kalboot* rests in the groove of *khuti* while bottom tail end is on the stone. If the rod is revolved by making it roll on the stone slowly, the conical head also revolves round. In this way, the *kalboot* is revolved swiftly by rolling the bottom end on the stone. The rod and *kalboot* do not change from their positions because the former rests in the fixed groove of *khuti*.

9. A little quantity of the paste of red hot liquid glass is taken with the thin end of *salaq*. *Salaq* is nothing more than an iron rod of about 3' length and $2\frac{1}{5}$ " thickness with one end pointed. The pointed end is put into the paste in the *thali* and the *salaq* is revolved 2 or 3 rounds; the paste gets itself attached to the end of the rod, then it is lifted out; and the rod is struck on a brick fixed at the edge of the furnace, so that the paste of glass loosens its hold with the rod. The paste is then lifted with *mala*. *Mala* is an iron implement, being a rod of about 8" length with the head in the shape of an isosceles triangle. The *salaq* with the glass paste is held in left hand, and the triangular end of *mala* held in the right is inserted into the ring of the paste and it is lifted. While it is lifted like that, the paste forms into a ring; and if it has already assumed that shape, the ring broadens by the insertion of the triangular end of the *mala*. The *mala* is also tilted holding it vertically with the paste ring at the top so that it slides down a little and thus becomes broader in shape. Then, the ring-like pasty substance is put round the conical end of the *kalboot*. *Kalboot* would be already revolving swiftly, and as

soon as the glass ring is put on the *kalboot* the ring also moves with it. While the ring is revolving like this, a small iron spoke *hunnar* (which has a small wooden handle) is held against it so that the ring assumes a smooth and regular shape. The ring is also drawn with that spoke to the appropriate place on the cone according to the size of the bangle to be made. If a bangle of greater size is to be made, it has to be drawn far inner on the cone and just like that. Some markings of lines for the usual sizes exist on the *kalboot* and the craftsman's experience is quite sufficient to know the proper position around which all the bangles of a given size are to be made. After the bangle revolves for some time, it assumes the final shape and meanwhile cools down. It is then removed with the *hunnar* and thrown aside. Next another mass of paste is mounted in the same way on to the *kalboot*, the bangle is shaped to the size and thrown aside. The Plate 10 illustrates the process. Thus, a heap of manufactured bangles goes up. The process is very quick indeed. It is claimed by some of the workers that they could turnover 7 bangles in a minute's time. It seems to be quite possible because the operations are performed at an amazing speed. The person who takes the molten glass from the *thali* and brings it down to the *kalboot* is more important and the person sitting at the *kalboot* revolving it and holding the bangle with *hunnar* can be even a boy sometimes.

10. The production usually takes place in the cold hours of the day; otherwise the heat at the furnace is unbearable. Normally the working hours are from 2 a. m. to 2 p. m., with an interval of one hour in the morning for breakfast. As we have already seen, two workers make a batch; and a batch can produce about 5,000 bangles in a day. The wages for this turnover amount to Rs. 6 for the main worker and Rs. 3 for his assistant. Payments are made weekly and it is seen that the individual turnover usually comes to 35,000 bangles in a week.

APPENDIX B

MANUFACTURE OF BLACK GLASS BANGLES IN THE MOFUSSIL VILLAGES OF ANDHRA PRADESH

A brief account of the manufacture of Black glass bangles in the mofussil villages in the State is given in the paragraphs below :

2. It is often said that the craft of glass bangles making is more or less a declining handicraft in the State of Andhra Pradesh. The coarse patterns of the handmade bangles prepared with almost primitive methods do not stand the competition of the factory-made fine varieties that always rule the market. The feminine choice naturally goes in for attractive types; and therefore the handmade crude varieties have to find their way at cheaper prices to adorn the wrists of the women only in the lower strata of the society. Further, the locally made native bangles are mainly used for ritualistic purposes in village *jatharas* etc.

3. The few villages in which these glass bangles are manufactured are all situated in Venkatagiri Taluk of Nellore District and in Kalahasti Taluk of Chittoor District. The villages from which information regarding making of bangles was received are the following :

- (i) Upparapalle

(ii) Chilamannuru

(iii) Jangalapalle

(iv) Srinivasapuram
- }

}

}

}
- Venkatagiri Taluk

Kalahasti Taluk

Besides these there have been some villares as listed below in the State where glass bangles are made by native methods :

- (1) Maddiledu

() Chindepalle

(3) Venkatapuram

(4) Seetharampet

(5) Papanaidupet

(6) Guttur

(7) Gazulupet

(8) Simhaachalam
- }

}

}

}

}

}

}
- Kalahasti Taluk,
Chittoor District

Kalahasti Taluk,
Chittoor District

Penukonda Taluk
Anantapur District

Mahboobnagar Taluk
and District

Visakhapatnam Taluk
and District

It is, however, reported that the industry has become almost extinct at some of the above mentioned villages, and some have come to concentrate on glass beads making alone; for example, Simhaachalam is no longer producing glass bangles for one reason or other, and Papanaidupet has become a reputed centre for glass beads only.

4. The informants from whom the particulars have been received in respect of the 4 villages mentioned above are the village school teachers who sent in the forms of village schedules of industries and crafts distributed during the course of the main rural

craft survey in which similar particulars were received from thousands of villages in the State. The Assistant Director of Industries & Commerce, Chittoor, has furnished some further details in respect of this craft of bangle making as it exists at Jangalapalle. These details may be taken to apply more or less equally to the methods of production etc., as practised in the villages around, which are situated in the same taluk of Kalahasti and also in Venkatagiri Taluk of Nellore District.

5. The total number of workers engaged in the craft of bangle making in the four villages Upparapalle, Chilamannuru, Jangalapalle and Srinivasapuram is 80, of whom only 4 are females. The village Jangalapalle has 40 males and Srinivasapuram 20 males employed in the production of glass bangles. The villages, Upparapalle and Chilamannuru of Nellore district have between them only 20 persons, of whom 16 are males and 4 females. Only two males belong to the latter village and the rest to the former. All the workers engaged in this craft in this area of Venkatagiri and Kalahasti Taluks belong to Gazula Balija community. The word 'gazulu' in Telugu means 'bangles' and it might therefore have to be inferred that people of Balija community who engaged themselves in bangle making must have been called Gazula Balijas. The total number of families working is 64 in all the 4 villages put together. Jangalapalle claims 35 families and all these relate to persons employed in the workshops set up by their employers. In Srinivasapuram also the families are only of workers employed elsewhere. But the case is different in Venkatagiri Taluk, where the families are reported to be working in their own houses.

6. The raw materials and methods employed in the production of the glass bangles are too primitive followed from times immemorial in the area. Mechanisation is absolutely unknown, as also any import of raw materials. Block glass is obtained by a process of continuously heating *chouda matti*, a kind of clayey saline soil available in abundance here for a period of over 2 to 3 weeks. The earth is shieved and filtered and made into a thick solution by mixing it with water. Ordinary furnace with the locally available firewood is used for heating for 15 to 20 days till the solution turns into black block glass. Afterwards this glass is melted on a small furnace in melting pans, taken out little by little with small iron rods and wrought into bangles on revolving conical tools. The process of turning bangles out of molten glass may be, in essence, the same as has been described in Appendix A.

7. The sizes of the bangles made are reported to vary from 1½" to 2½" in diameter, obviously to suit the hands of children and adults. Neither designs nor special ornamentation are worked and all bangles are made in black colour with plain shapes. The finished

articles are always sold in open markets. The competition of workshop-made bangles which flood the markets is, of course, a serious handicap for this indigenous craft. The industry has not been modernised so as to cater to the needs of at least the villagers in the neighbourhood. It seems, owing to the lack of demand for these bangles, the block glass that is prepared in some of the villages is diverted to production of glass beads at Papanaidupet and elsewhere.

8. The cost of the block glass is reported to be about Rs. 12 for a mass of about 39 Kgs. (84 lbs.); and the approximate cost of conversion of this mass into finished products is given to be Rs. 20. The usual sale price of the bangles is Rs. 36 for a weight of 39 Kgs. The craftsman earns a sum of Rs. 15 as wages for his labour spread over a period of 10 days each time a consignment of bangles is manufactured by an employer. Probably the wage rate is not dependent upon the profits of the employer out of the sale proceeds.

9. Based upon the information available, the names of some of the master craftsmen with the names

of the villages, where they are working, noted against their names, are given below :

- (1) Sri Dama Subbayya

(2) Sri Dasari Chenchu Ramaiah

(3) Sri Gunakala Krishnaiah

(4) Sri Gunakala Penchaiah

(5) Sri Borra Subbaramaiah

(6) Sri Borra Lingaiah

(7) Sri Subbaramaiah Chetti

(8) Sri Nainaru Santeyya Chetti
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- Upparapalle

Chilamannuru

Jangalapalle

Jangalapalle

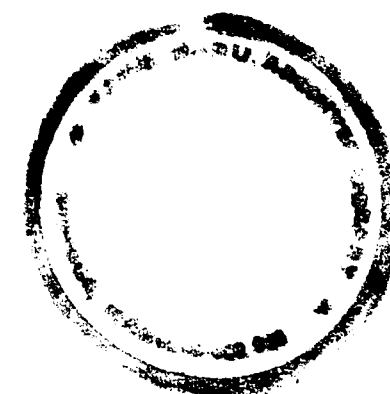
Srinivasapuram

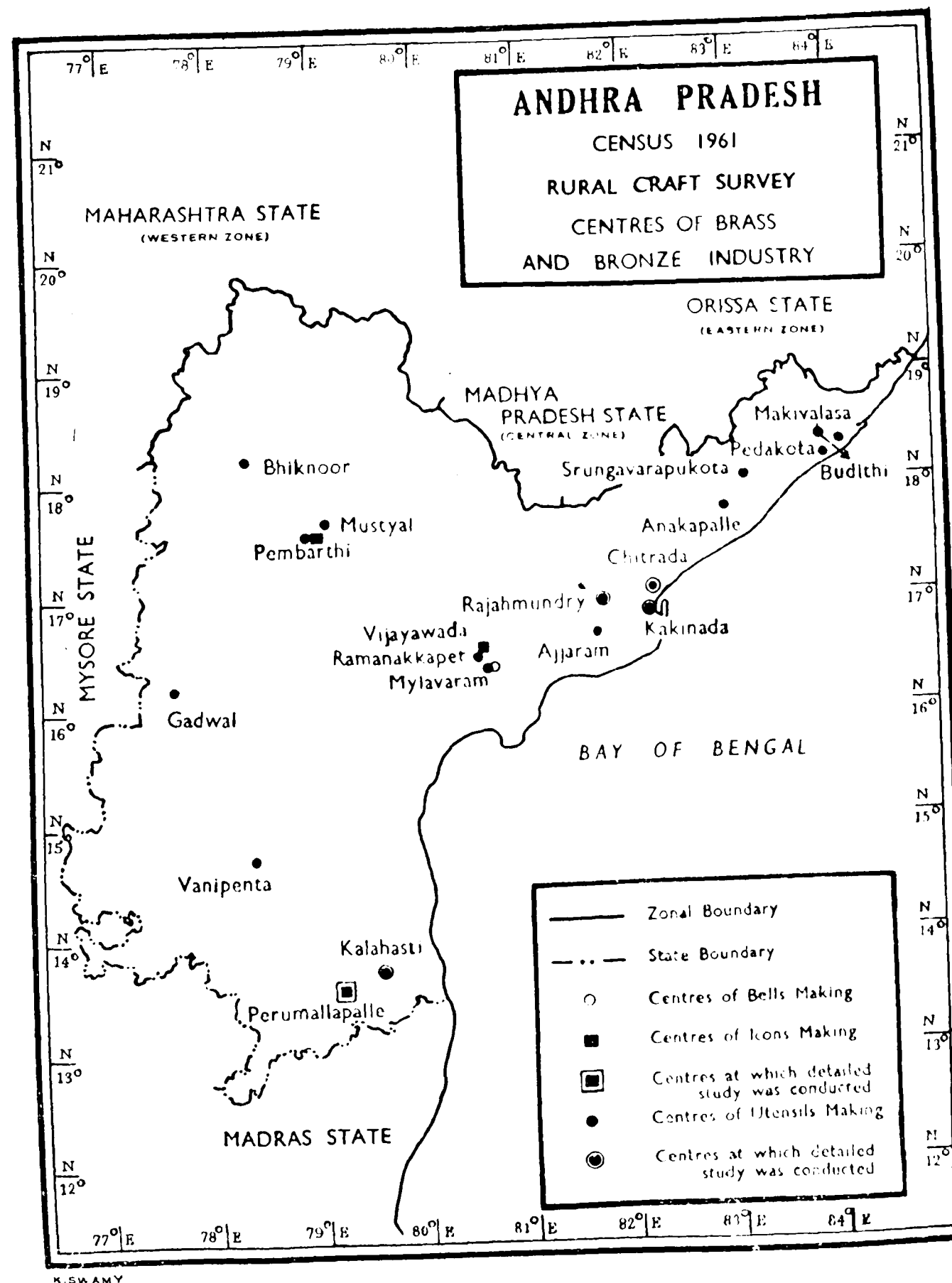
Srinivasapuram

Srinivasapuram
- Venkatagiri Taluk, Nellore District

Kalahasti Taluk, Chittoor District

(iii) BRASS AND BRONZE INDUSTRY
A—MANUFACTURE OF UTENSILS





SECTION I

INTRODUCTION

A renowned traditional craft of Andhra Pradesh is the brass and bronze industry, the products of which being mostly of domestic utility, assume a unique importance in the day-to-day life of the people. The industry or craft of making bell-metal articles has been as reputed as that of brass articles in the State. But the volume of production of articles of the former has diminished considerably and only one or two centres in the northern-most districts of Srikakulam and Visakhapatnam have at present units producing bell-metal articles. The brass industry is, however, spread over many districts; and the important towns or villages which have grown famous for their products are: Budithi in Srikakulam District, Anakapalle, Srungavarapukota and Kintadakotapadu (near Chodavaram) in Visakhapatnam District, Kakinada, Rajahmundry and Chitrada (near Pithapuram) in East Godavari District, Ajjaram (near Tanuku) in West Godavari District, Kalahasti in Chittoor District, Siddipet in Medak and Pembarthi in Warangal District. The various centres where this craft is practised are indicated on the map on the facing page.

2. The monograph deals with the industry as it exists in Kakinada, Rajahmundry and at Chitrada village in East Godavari District and at Kalahasti town in Chittoor District.

3. Kakinada (termed Coconada till after Independence) and Rajahmundry have the status of cities in the Census parlance. The following paragraphs convey ideas about the situation of Kakinada, and Rajahmundry cities and Kalahasti in Andhra Pradesh.

Kakinada

4. Kakinada is situated on 16°-57' N latitude and 82°-14' E longitude at the head of Kakinada Bay which is formed by the shoals at the mouth of the eastern branch of the Godavari River. A branch railway line 10 miles long connects the Kakinada Port railway station with the main line of the Southern Railway at Samalkot junction (391 miles from Madras). The town is of little historical importance. Jagannathpuram, one of its suburbs was, however, very early chosen by the Dutch as the site of a factory. It was finally ceded to the British in 1825. Kakinada was constituted a

municipality in 1866. It is the headquarters of the East Godavari District administration.

5. The population of the city as per the Census of 1961 is 122,865. The city is not perhaps overcrowded and has been built and developed in a planned way. Its parallel and long thoroughfares are the envy of other sister cities in the State.

Rajahmundry

6. Rajahmundry is the headquarters of the sub-division and taluk of the same name in East Godavari District, situated on 17°-1' N latitude and 81°-46' E longitude on the left bank of the Godavari, 360 miles from Madras by the Southern Railway which crosses the river here by a girder bridge of 56 spans. The Imperial Gazetteer of India, 1908, Volume XXI records that the founding of Rajahmundry has been variously ascribed to either the Orissa or the Chalukyan kings; but it was almost certainly founded by the latter. Being the key to the passage of the Godavari, it became a fortress of importance. Owing to its favourable position with regard to the main lines of communication in the district, it is an important distributing centre and the principal depot for the timber floated down the river. Rajahmundry was constituted a municipality in 1866.

7. The population of the city as per the Census of 1961 is 130,002. As a flourishing centre of trade and commerce, it has a few rivals in the State. Rajahmundry has been the birth place of many social, cultural and literary activities.

Kalahasti

8. Kalahasti is the headquarters of the taluk of the same name in Chittoor District. Situated on 13°-45' N latitude and 79°-42' E longitude it is a railway station also on the Renigunta-Gudur section of the Southern Railway. The town is about 30 miles from Tirupati and one can reach it easily by road from Gudur on the Madras-Vijayawada line. Kalahasti has a temple dedicated to Lord Siva called Sri Kalahasteswara, and is famous not only in Andhra Pradesh but also throughout India as a sacred place of pilgrimage. The river Swarnamukhi flows on one side of the town which on the other side is bounded by hills. The temple and town are situated in beautiful natural surroundings. This is an ancient place mentioned extensively in Puranas. A

festival takes place for Lord Siva annually in connection with Maha Sivaratri for 12 days from *Magha Bahula Navami* to *Phalguna Suddha Panchami* (February-March).

9. Certain crafts like the brass industry, temple cloth painting, and handloom weaving have flourished at Kalahasti since many decades. The town recorded a population of 26 460 in the Census of 1961.

10. Excellent articles of brassware meant for daily use in households are produced in the cities of Kakinada and Rajahmundry and in the village Chitrada in Pithapuram Taluk. Chitrada lies at a distance of about 7½ miles from Kakinada connected with a good asphalt surfaced road on bus route. It is also the centre where screw jugs (jugs or jars with tight fitting screwed lids) called *maru hembu* (మారుహెంబు) in vernacular, of brass metal for carrying water or liquid beverages over places, are produced in a private manufacturer's workshop, specially equipped for the purpose. All these products are marketed in various districts all over the South India. It is claimed that while certain types of cast brassware like the tumblers had their origin in Kakinada, many of the craftsmen who have set up the manufacturing units elsewhere had first learnt the art in Rajahmundry.

11. The availability of *pala matti* (a type of clayey soil) in abundance on the banks of river Swarnamukhi, which is used for preparing moulds and a ready market for the products at Kalahasti, being a great pilgrimage centre must have been the main causes for the growth of this industry in this town. There is a saying “పాదక్షిణి పాత్ర పొంద్యోపాధి” i.e., one who goes on a pilgrimage shall get a vessel. It is but common among the rural folk to purchase some vessel or at least a tumbler when they visit this town to have a *darshan* of the Lord Sri Kalahasteswara. As this place is only about 48 kilometres from Tirupati, almost all the people that visit Tirupati pay a visit to Kalahasti also. Throughout the year pilgrims visit this place. Various varieties of brassware are manufactured here. The well-known *marachembu* (మారుహెంబు) i.e., screw jug of brass metal for carrying water or liquid substances is said to have been invented by the craftsmen of this place. The products have a ready local market and are also in demand in various other districts in the South India outside the State also.

12. The brassware articles as produced in the East Godavari District and at Kalahasti are made of casting process. That is, the industry as covered by the field study embraces the production of castware articles only. The molten metal at a high temperature is poured into moulds prepared out of clay to suit the shape of the required articles. As different from this method, at certain other centres in the State, the articles are produced out of brass sheet. The sheet is obtained by turning brass ingots in rolling mills situated at places like Ajlaram in West Godavari District, Vijayawada in Krishna District and Secunderabad.

13. Probably casting is an improved method. It is more precise and quicker. Time and labour are saved. The finished articles look more attractive than those wrought out of brass sheet. Perhaps the technique of casting might have been deduced from that of casting of bronze artware, since, it is learnt, round about the year 1935 only bronze and aluminium vessels used to be cast out of molten metal, whereas brass articles were mostly prepared from metal sheets.

14. The Madras District Gazetteer for Godavari (East) District (*vide* pp. 258-260 Vol II, Madras Government Press, 1935) records that making vessels of domestic use from metals such as brass, bronze, copper and lead was common in this district also at elsewhere. The Kamalas of Peddapuram made brass and bronze vessels as independent workmen investing their own capital in the business. The process for making bronze vessels involved pouring molten metal in specially prepared moulds and after cooling, taking it out and polishing it. Besides Peddapuram, brass vessels used to be made out of sheet metal at Rajahmundry and Jagannathapuram (Kakinada) also in those days. The workers got brass sheets from the *sowcars* and made vessels for them, the wages varying with the kind of vessel. Women and boys were also engaged in the industry. An adult worker earned from Rs. 10 to Rs. 20 a month and a boy about Rs. 3.

15. It may be mentioned here that Peddapuram which figured in the annals of the yester-years for the brass and bronze vessels no longer enjoys that reputation. Nor are the reasons far to seek. The craftsmen families of those days must have migrated to the nearby cities, Kakinada and Rajahmundry in pursuit of better wages and better living conditions.

SECTION II

RAW MATERIALS

16. The raw materials needed for the brass castware industry are the following:-

- (i) Copper
- (ii) Zinc
- (iii) Old brass (scrap of worn out or broken vessels etc.)
- (iv) Aluminium (usually old scrap is used)
- (v) Lead
- (vi) Borax
- (vii) *Tankam*
- (viii) Coke
- (ix) Charcoal
- (x) Furnace oil

Gunmetal, firewood, wax, *guggilam* (resin) and margosa seed oil are the other important materials applied at Kalahasti.

17. The metal of brass is the alloy of the two metals viz., copper and zinc mixed in the proportion of 60:40. When pure copper (in slab form) and zinc (in the form of thinner slabs of rectangular shape) are obtained by the manufacturers for preparing the alloy, they melt the ingots in the big melting crucibles of about 40" height. As these two metals are now-a-days in short supply, they are allotted to the various manufacturers by the Industries Department of the State Government and supplied through the Industrial Estates. It is, however, said that the quota assigned for a year to an individual dealer would actually be sufficient for production of only a period of one month or even less. For the rest of the year the manufacturer has to depend upon the old scrap which is, however, fortunately always available in the market in adequate quantities. The scrap of worn out or broken brass vessels is procured by the merchants from street hawkers, who go about door to door in villages and towns and buy all discarded brasswares from the households. This is the case with regard to the manufacturers in the East Godavari District. The manufacturers at Kalahasti depend upon gunmetal for preparing brass. Gunmetal is an alloy of copper and tin broadly in proportion of 9:1. It is reddish white in colour, and harder than brass. To this gunmetal lead is added in the proportion of 8 : 1. Gunmetal is abundantly available

in the market. It is in the form of used pipes, screws, rods, etc. It is obtained from Madras generally. The availability of gunmetal in large quantities nearby perhaps accounts for the reason which prompts the manufacturers at Kalahasti to go in for that as the principal raw material, as different from their counterparts in the East Godavari District who use mostly brass scrap.

18. In the East Godavari District the merchants sell outright the scrap to the manufacturers for production of new articles by smelting them or get articles produced for themselves on order from the scrap given by them. Making charges or wages, which are called *majuri* (మజూరి) in vernacular locally, obviously derived from the Hindi word *majdoori* which means labour charges, are paid to the manufacturers in this method. Most of the manufacturers who cater to the needs of the local brassware merchants at Kakinada and Rajahmundry mostly follow this system of converting the old scrap into new articles and receiving the wages for the work. The wages which have been in vogue presently and which have been fixed by the Brassware Manufacturers' Association, Kakinada comprise allowance of one viss (1.4 Kgs.) reduction in weight and Rs. 15 per maund (11.2 Kgs.) weight of finished goods. In other words, if a mass of scrap brass weighing 9 viss is given by a trader to a manufacturer, the former gets back finished articles (of the shapes, sizes etc., as specified by himself) of the weight of 8 viss (one maund) on payment of making charges of Rs. 15 to the manufacturer. The practice is slightly different at Rajahmundry. The finished articles are returned at equivalent weight as the scrap received from the merchants. The *majoori* (wages) is paid at the rate of Rs. 2.30 P. per viss for all the articles. Most of the production of the brass castware articles at these places is now a-days dependent on the supply of old brass, owing to the scarcity of the fresh metals.

19. The other material which is vital for the industry is hard coke which also is unfortunately scarce in availability. This is allotted by the Director of Controlled Commodities on quota system from the stocks received for the State from the Jharia coal fields etc. Coke is required for the furnace

to melt the metals in the graphite crucibles. Its good qualities of burning without smoke and giving heat upto a very high degree render it the most desired fuel for the manufacturers. The Government allot monthly quotas in the names of the Manufacturers' Associations of Kakinada and Rajahmundry, the members of which divide it among themselves. A rake of wagons is unloaded at Visakhapatnam, Kakinada or Rajahmundry, from where the manufacturers have to get it by lorries etc. to their respective workspots. The manufacturers at Chitrada get their quotas individually. The wagons are unloaded at Pithapuram Railway Station. The cost of a ton of coke works to about Rs. 90 to Rs. 100 including transport charges. But the supply made through the permit system is said to be hardly adequate for the needs of the manufacturers. It is, therefore, alleged that they are perforce made to go in for purchase of coke in black market at a cost of even Rs. 200 to Rs. 250 per ton.

20. It is noticed that a few producers at Kakinada and Rajahmundry who cannot afford to go in for purchase in black market sometimes use coal for the furnace. But coal belches out a lot of smoke like that in a railway engine and envelopes all the neighbourhood with it. In the long run it is likely to tell on the health of the inhabitants of the area. Lately oil furnaces with furnace oil as fuel have also found their place with some of the manufacturers, particularly at Rajahmundry. At Chitrada also there is an oil furnace. Electricity is required for supplying air to it through the blower. It seems to be a little cheaper because there is saving in labour, but the temperature it reaches is lower than that of coke furnace. Either of these substitutes can never make up for the original and the manufacturer's choice is always coke and its adequate and regular supply is a boon for him.

21. At Kalahasti, however, most of the units use ordinary firewood only. It is cheap here and is also suitable for the furnace of the local type which, however, takes longer time for the process. Firewood is supplied by lorries from the nearby forests by local contractors. Oil furnaces are installed at the unit which follows the Chitrada method of moulding and casting at Kalahasti.

22. The other raw materials listed are used in the process of manufacture in the respective stages. Aluminium which is also got in the form of old scrap from bazaar is used for cleansing the molten

brass from impurities. Just when the molten metal has boiled sufficiently and is ready for pouring into the moulds, a little of aluminium is put into that crucible. It has the effect of making the impurities in the molten material to float on it as a layer which is removed off with a flat spoon. Aluminium has also got the property of making the molten metal more fluidy to enable it to flow into the moulds well. As little as 100 grams of aluminium would do for 40 Kgs. of brass metal. At Kalahasti, aluminium is added like this only when the alloy is of copper and zinc.

23. Some manufacturers, and not all, add a little lead also to the brass metal, while scrap is melting in the furnace. It is said that the effect of this is making the brass utensils less brittle. Usually the lead required for this purpose is extracted from old utensils of brass containing the content of lead in them. It is understood that a larger element of lead is found in the articles manufactured at Kalahasti centre. Therefore, old scrap of that make is obtained and stocked separately by the manufacturers in East Godavari District for utilising whenever necessary.

24. It is obvious enough that the cost of the raw materials varies from time to time. Generally old brass scrap which is purchased by the manufacturers from local markets is got for Rs. 4 a kilogram. Copper supplied on permits costs about Rs. 180 and zinc Rs. 100 per Cwt. The prices of other materials are as follows :

	Rs.	P.
Lead	1.62	per Kg.
Aluminium scrap	3.00	..
Borax crystals	1.44	..
Charcoal	7.00	a bag of 100 Kg.
Gunmetal	5.40	per Kg.
Firewood	52.00	per ton
Wax	2.00	per Kg.
Guggilam	2.50	..
Margosa seed oil	2.30	..
Furnace oil	30.00	a drum

It is relevant to note here the charges at which Godavari clay (which is used for moulding) is procured by the manufacturers at the different places mentioned below :

Kakinada	Rs. 28	per cart load (roughly 16 cement bags by volume)
Rajahmundry	Rs. 7	
Chitrada	Rs. 33	

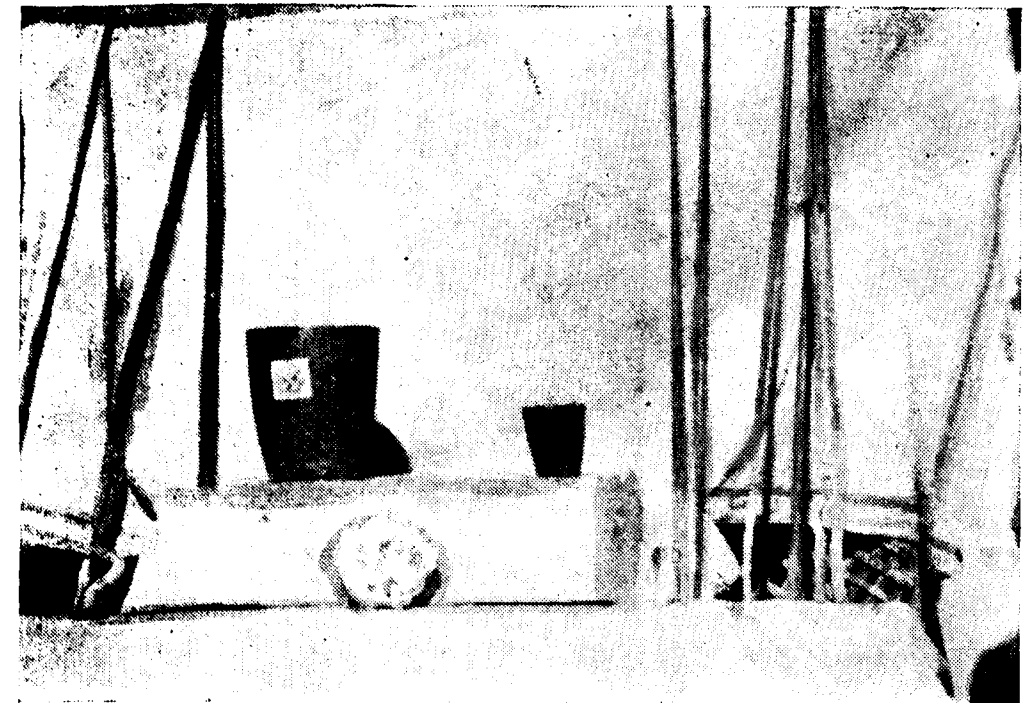


Plate 1. The implements used for melting the metal for casting in the moulds.

SECTION III

TOOLS AND PLANT

25. The various tools and implements which are used in the production process of the brass castware articles may be listed as follows with their local names in vernacular :

East Godavari District

- (i) Hammer (*Sutti* సత్తి) : These would be of several sizes ;
- (ii) *Karavai* (కరవాయి) : A type of anvil. It is made of iron mass in the shape of rails and bent ;
- (iii) Files of different gauges ;
- (iv) Tongs called *karlu* (కర్లు) in vernacular used for transporting hot articles and for holding vessels while heated ;
- (v) *Lega kammi* (లేగకమ్మి) : These are steel pieces made out of worn out files and have sharp edges like knives—used for turning and polishing ;
- (vi) Chisel, locally called *saanamu* (సానము) used for cutting off metal ;
- (vii) *Gunapamu* (గునపము) a short crowbar used to support surfaces from below while beating ;
- (viii) Crucibles of graphite used for melting the metals in the furnace and for transporting molten metal ;
- (ix) Fan or *pankah* (పంకా) for supply of air to the furnace ;
- (x) Power motor: It is used for purpose of turning the completed articles holding a sharp edge scraper against their surfaces ;
- (xi) Models: These are usually component parts of metal articles which are to be made, or the whole articles themselves if they are small and have no curvature ; and
- (xii) Moulding frames—*dodlu* (డొడ్లు) : These are hollow squares of wood of 3" width and $\frac{3}{4}$ " thickness.

26. Many of the tools listed above are got manufactured from the local blacksmiths or carpenters. Because these are all iron implements, a set once taken lasts for years together excepting files. The files are to be replaced very frequently because they go blunt on using for a week or so continuously. Each file of 12" length costs Rs. 3.75 approximately. The crucibles are purchased from the manufacturing units at Rajahmundry. The cost varies from Re. 0.56 P. to Rs. 20 according to the size of the crucible. A crucible which can hold metal of 50 Kg. for melting on a furnace costs Rs. 20 and of 25 Kg. costs Rs. 10. Bigger crucibles are used for melting the metals in the furnace whereas smaller ones are meant for transporting the molten metal to the moulds, etc. Plate 1 includes two crucibles along with a collection of iron implements used at the furnace.

27. The average prices of some of the other tools are reported to be as follows :

Hammer	Rs. 4
<i>Karavai</i>	Rs. 25
<i>Karlu</i> of length 4'—5'	Rs. 12
<i>Gunapamu</i> (crowbar)	Rs. 10

As all these articles are got made with iron, the prices mentioned are too approximate. Used away files are converted into *lega kammi* and *saanamu*.

28. The motor used for turning is propelled by electricity. The cost of a motor of 2 H.P. is said to be about Rs. 1,000. The cost of all the tools and implements used at the workshop of M/s. Chandrayya Brass Works at Kakinada was estimated to be Rs. 5,000 approximately.

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29. The following are the various tools and implements used in the manufacture of the brass castware articles:

- (i) *Pattukarlu* (పట్టుకర్లు) : Iron pincers. These are of different sizes and varieties. They are used to remove the heated moulds from furnace and for removing the crucible from the furnace. Long iron pincers with two round edges are used for removing the crucible from the furnace. A smaller iron pincers about 3 feet in

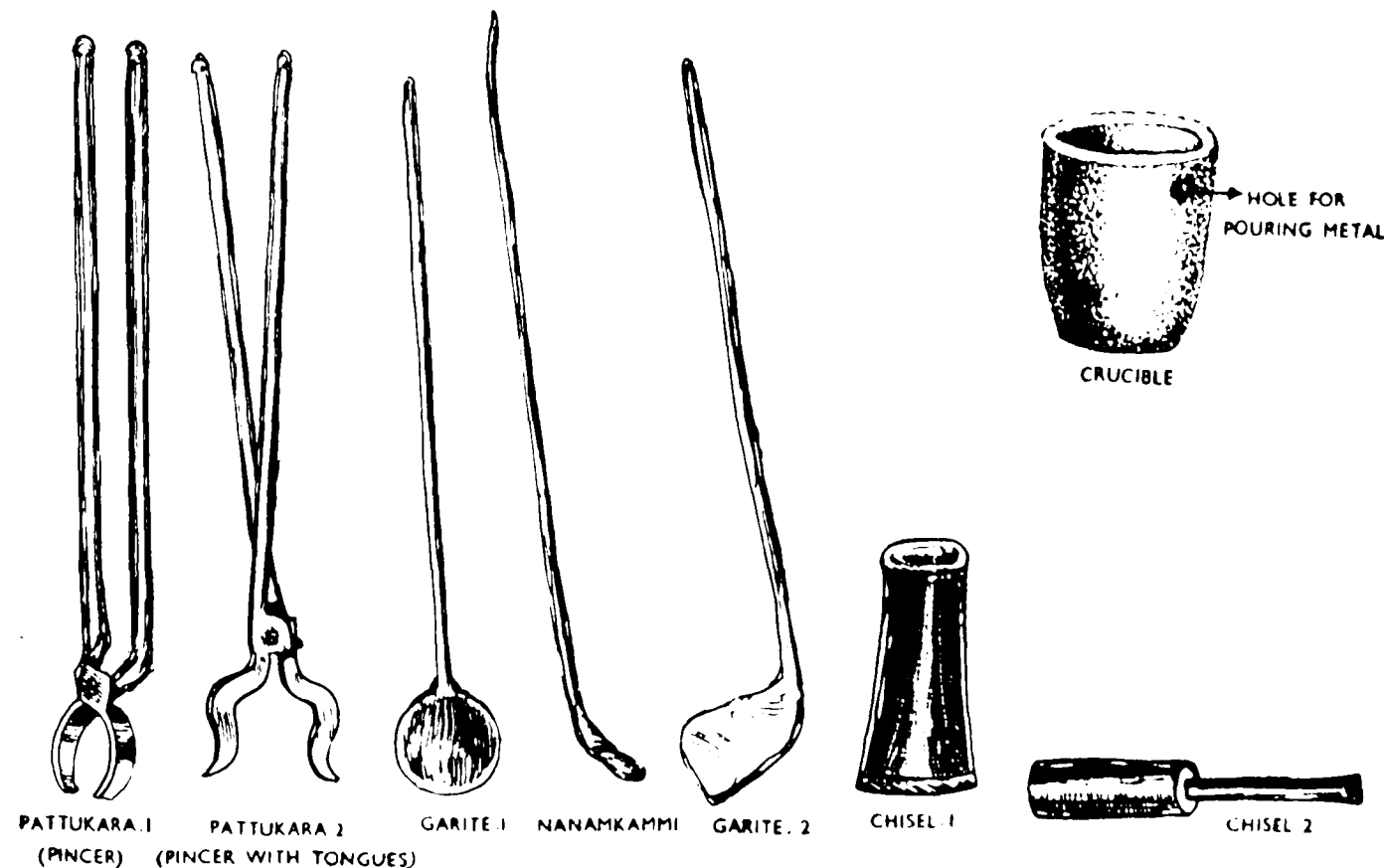


Plate 2. Some of the tools used at Kalahasti.

length with tongues at the edge will be used for transporting the heated moulds;

- (ii) *Garite* (గరిత): Big spoon with long handles. A long rod with a flattened and bent end (*nanamkammi*) is used for mixing the metal while heating;
- (iii) Hammers (*suttelu* సుత్తలు): These are of several sizes;
- (iv) Chisels (*uli* అలి) of different sizes. For cutting the metal and for holding against the article while turning on the machine;
- (v) Crucibles of graphite for melting the metal;
- (vi) Metal moulds; and
- (vii) Power motor used in turning section.

Some of the above listed tools can be seen in Plate 2.

30. Except the crucibles, the files and the power motor, all other implements are produced locally. The crucibles are imported from Rajahmundry and the files from Madras. The iron implements generally last for some years. The files have, however, to be replaced often since they wear out within a week or two. As regards the prices of the tools it has to be mentioned that as only files are purchased often from the market, the cost of others is too approximate. A *pattukaru* of length of about 6' costs Rs. 40 whereas one of length 3' is got made for Rs. 15. A *garite* 6' long is got for Rs. 15. Chisels are made from worn out files and files are bought at a rate of Rs. 2.50 per Kg. by weight. The length of the files for ordinary use ranges between 1'-1½' though there are bigger ones upto 3' long. The price of crucibles is said to be calculated at 55 paise per one number. Most of the crucibles put to use for melting metal are of 25 No. costing Rs. 13.75 each.

SECTION IV

TECHNIQUE OF PRODUCTION

31. The whole process of production of a brass metal castware article can be roughly divided into five stages, namely (i) moulding (ii) casting (iii) repairing (iv) filing and (v) turning and polishing. In the local jargon at Kalahasti the first stage is known as పాలపత్రం (*palapatra*) and the second one is కొలిమి (*kolimi*). *Rapadam* (రాపడం) is the word for repairing and filing; and *tarige* or *tarine* (తరిగె or తరినే) denotes the operations of turning and polishing.

32. Usually, different sets of workers are employed in the work connected with each of these operations; and this division of labour renders each group proficient in that branch of production alone. The system would thus be conducive to efficiency and also economy and quickness in mass production. But in cases where the workshop is a small unit with only 3 or 4 persons the same workers would have to operate the different processes alternately to finish the articles right from the moulding stage. However, in some of the workshops like the one of M/s. Chandrayya Brass Works at Kakinada it is observed that the workers, most of whom are teenaged boys, are changed from one branch of manufacture to another, as a result of which they have become well conversant with all the stages of production. Here the aim of the proprietor seemed to have been to train up the boys alround; and so much so, they owe him a sort of gratitude althrough.

33. Similarly in the Maheswara Metal Factory at Kalahasti it is found that many of the workers know the technique of all the operations. It is said that the workers are changed from one branch of work to another to enable them to learn all the operations, so that dearth of hands is not felt under any stage of production. The various stages of production are discussed below in detail:

(i) Moulding

East Godavari District

34. Even though the process of moulding is not too intricate, its importance is unique. The nature and quality of the article are determined by the

mould. The mould is prepared into the shape in which the article is required. The component parts of the article are used for this purpose. If the article is of a straight shape without any curvature e.g., tumblers or *lotas*, a whole model of the article itself is used for preparation of the moulds; in cases otherwise, the different parts of the articles broken up at each turn of the shape are used to prepare the mould. A separate mould is made for each of the parts and all these component moulds are joined together to form the whole for the object. Moulds (whole pieces or components, as the case may be) of many shapes of the articles as are likely to come up on demand for production are always preserved by the manufacturers. Plate 3 illustrates the metal moulds (component parts) used for making the articles kept beside them.

35. The chief raw material used in the process of moulding is clay. The alluvial soil of the river Godavari is the clay used for the purpose. During the season when the river is not in spate, the soil is gathered on the river bed, filtered there to remove off the coarser type and the finer clay is transported in bullock carts to the banks of the river, from where the manufacturers purchase and get to their workshops. All the manufacturers in Rajahmundry, Kakinada, Chitrada or elsewhere in the neighbourhood use the clayey soil of Godavari only for moulding purposes. The clay freshly got from the river bed is said to be not quite suitable for being used as such. It evolves gas on pouring hot metal into it, and this causes formation of bubbles affecting the shape of the article badly. Therefore, the fresh soil is mixed with the used one before using. There is no fixed proportion in which the mixture is made. However, for every 15 days half the quantity of the soil under use is replaced by fresh soil. Sometimes, three quarters of old soil is retained and only one fourth of the volume is replaced by fresh soil as and when need for it is felt roughly at an interval of one week each time.

36. For the purpose of moulding, hollow squares made of four wooden planks are used. The planks are of 2" width, 9"—13" long and about 1" thickness; and are got made of mango wood once a year by the manufacturers. Small nails on the side walls make them fit with each other closely. For the purpose

of preparing moulds for single items at a time like *chembus*, screw jars etc., the squares of a smaller size can be used; and for glasses, which are set 4 or 5 at a time, bigger frames are employed. As an illustration the making of a mould for a screw jar of medium size can be detailed as follows:

37. Five squares of 11" sides are taken. The component parts of the model of a screw jar are taken and fitted loosely into its form. The worker places a frame on the ground, fills it with the clay, which is already prepared soft with a sprinkling of water. Upon that layer of clay the model combined of the component parts is placed. Another frame is put above it which envelopes the model upto a height of about 2 inches covering the part of base of it. Clay is thrust into all the empty space around the model within the square, and also inside the model to its full capacity thrusting with a small wooden stick for tight filling. An iron spoke of 15" length is pierced in the centre of the clay in the model. The surface of the layer formed by the clay in the frame is smoothened and a little ash of charcoal is sprinkled over it. Then, another hollow square is put upon that layer of the clay around the model; and again clay is thrust tightly. The layer now formed covers approximately another component part of the metal model. The layer is levelled horizontally and smoothened again with a sprinkling of ash over it. This is repeated till the model is entirely covered underneath the layers of clay surrounded by the wooden frames. The whole mass of clay containing the model in the shape of the screw jar would be inside the open box called *ṣṭṛāṅṅ* or tub formed of the joined square frames one above the other with layers of clay (tightly enveloping the model) held within its four walls as per the height of the article. The box (*ṣṭṛāṅṅ*) is put in an inverted (topsy-turvy) position and a small opening is made in the upper most layer with a small rod of about 1" diameter so as to touch the metallic model. This orifice will serve as the passage for the molten metal to pass through. Afterwards the box (*ṣṭṛāṅṅ*) is turned upright and then the wooden frames are removed one by one and the component parts of the model are slowly removed off. The clay mass inside the model assumes the round shape of the jar and would be like a clay ball. It is lifted up with the help of the iron spoke pierced through it and the surface is smoothened and put again in its place in the frames. The gap left by the metallic mould between the outer shape of it wrought in the clay and inner mass is the space through which the molten

metal pervades, settles down and assumes the exact shape of the object for which the mould is made and kept ready.

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38. At Kalahasti, as has been mentioned elsewhere, there is one unit which brought down workers from Chitrada; and not unnaturally they follow their own method in preparing moulds (Plate 5). Others follow what is known as *palapatra* (*ṣṭṛāṅṅ*) which is described in detail below:

39. The chief raw material used in the process of moulding is (*ṣṭṛāṅṅ*) *palamatti* i.e., the soil on the banks of the river Swarnamukhi. The right of mining the earth is auctioned by the Municipality. The manufacturer pays RS. 6 per annum to the contractor and gets the earth on bullock carts from the bank of the river. The soil is then filtered with an iron sieve to remove small pebbles and coarser earth. The finer particles of the smooth earth are then soaked for one day with water and small bits of waste gunny bags are added. The jute fibre is mixed with the earth, so that the earthen replica of the article may not break away in the process of making or when the mould is heated. The soaked earth is then kneaded by one or two persons with feet to make it into a paste. This paste is used for moulding.

40. The metal models of the various articles to be made are stored in plenty. Each model is in the form of two halves cut in the middle vertically, if it is round *chembus* or screw jar etc., or is used as it is, if a glass or tumbler. Let us see how the mould for a screw jar is prepared through the various stages. First the inside of the two halves of the model is smeared with a little margosa seed oil. Then the clay paste is smeared to the walls (inside) upto a thickness of about 1" so as to cover fully the walls of the mouth also. Both the halves are joined together in the shape of the screw jar. About 30 to 40 articles are prepared at a time like this. Then they are heated on a flat iron sheet placed on a furnace for about 2 hours so as to dry up the clay. Then, they are taken out. Afterwards, the worker sits before a round wooden disc which revolves on a fulcrum, carried by a wooden piece fixed in the ground. The thickness of the disc is about 1" and its diameter 10". The model is placed upside down on the disc and is wholly covered with the clay paste (after a little margosa oil is applied to the metallic outer surface upto a thickness of about 1" again. For covering with the clay paste, the disc is revolved



Plate 3. Component parts of metal cast articles used for preparation of moulds.



Plate 4. The workers at the process of making moulds with earth and wooden frames.

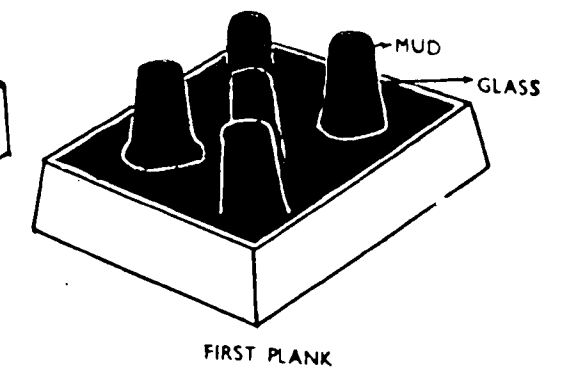
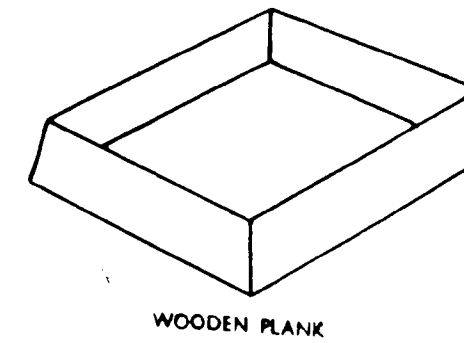
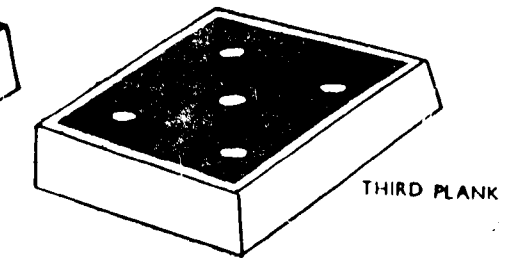
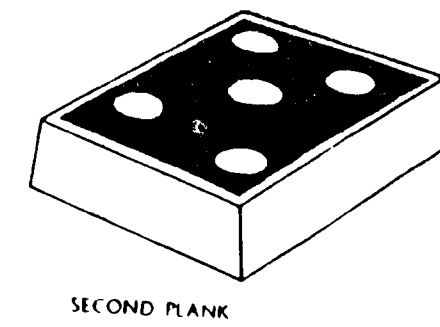
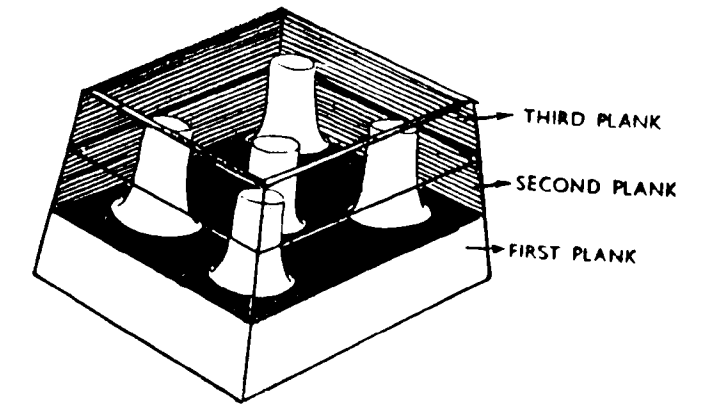


Plate 5. Moulding.



Plate 6. *Palupura* moulding.

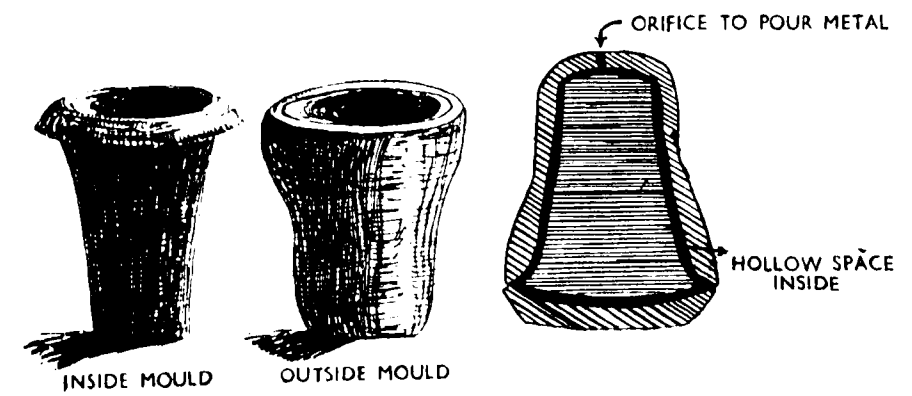
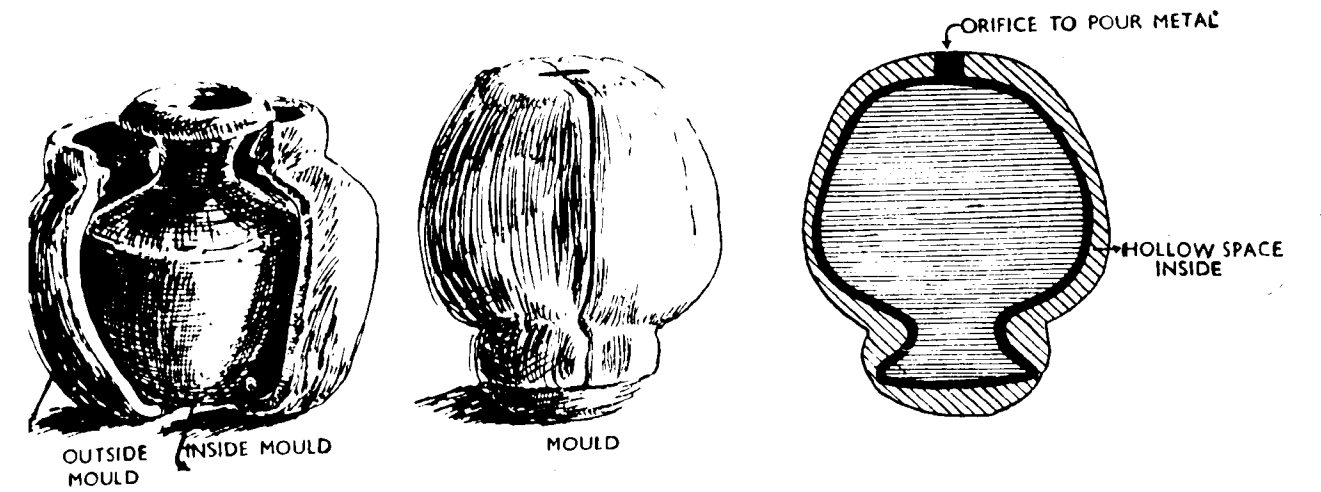


Plate 7. Earthen moulds for casting.

round and round on the analogy of the potter's wheel and the clay surface is made as smooth as possible with a sprinkling of water also (Plate 6). Then the clay surface is nicely cut into two halves with a sharp edge along the cut in the metal model, but the shape is kept attached together around the metal mould by applying a little clay at the joint. A small rectilinear slit at the bottom of the mould is cut into the outer layer of the clay. This slit has to serve as passage for the molten metal to go through. Afterwards, the objects (Plate 7) are heated again for a night on the iron sheet on the furnace with mild heat underneath.

41. The next morning they are removed from the furnace and allowed to cool down. Then, the clay surface is bifurcated along the cut already made; and slowly the metallic model is removed. The inner replica of the model formed by the clay and the outer replica are put together and passed on to another worker. Then the outer surface of the inner replica and the inner surface of the outer replica are smoothened with a sand paper. Then a coating of a soft paste, prepared out of a mixture of clay, fine charcoal powder and the powder of used crucibles, is given to these two surfaces. This coating is said to prevent formation of bubbles when hot metal is poured into the clay mould; otherwise the shape of the article is affected by the bubbles.

42. The next operation is fixing a wax thread round the inner replica of the article (Plate 8). The wax thread is prepared as follows: A quantity of 4 viss (5.6 Kg.) of *guggilam* (resin) is melted in a big cauldron on a firewood furnace. Then, $1\frac{1}{2}$ viss (1.75 Kg.) wax and $1\frac{1}{2}$ viss (2.1 Kg.) margosa seed oil are added to it. The whole mixture is boiled for some time and then filtered into a trough containing cold water. The filtered mass assumes the form of a thick paste, which later is put on an iron gauze and pressed heavily. A thread of uniform thickness drops down through the gauze, which is used for the purpose. The use of this wax thread is said to maintain the gap uniformly between the inner replica and the outside mould—this gap being the space vacated by the metallic model of the article. When the hot molten metal is poured into the mould it spreads all through the hollow space, and the wax thread melts away.

43. Afterwards, the two halves of the upper replica are placed around the inner mass and the whole object is tied with a jute thread so that every-

thing retains its proper position during the further operations. Then, again a coating of clay paste of about 0.1" thickness is given to the object with the help of the revolving disc, leaving open the orifice made for pouring the metal into. The moulds are then dried in sun sufficiently for a day or two (Please see Plate 9). In the rainy season it is difficult to get them dried in the sun; besides taking as long time as 3 or 4 days they have to be removed from open place whenever rain falls. Therefore, as many large numbers of moulds as there is storage space are prepared in the summer season and stored for use in the rainy days. The next stage is *kolimi* or casting.

(ii) Casting

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44. As has already been mentioned elsewhere, coke furnace is used for melting the metal at a high temperature in graphite crucibles. A blower with hand-rotated wheel arrangement is used for flaming the furnace. The furnace is a specially constructed brick-work with a big mouth or opening at the top for placing the crucible inside, while the flame is enkindled from the bottom connected to the blower (Plate 10). When the furnace is ready and the crucible is sufficiently heated on it, the required quantity of the brass scrap is put into the crucible. Whenever fresh metals are used for preparing brass alloy, the copper and zinc are weighed and put in proportion of 3:2 for melting. The heating is then done to a very high degree of temperature. It takes nearly 3 hours when the metal reaches the molten state and boils in the crucible. When the metal boils, a little of aluminium is added to it. The aluminium immediately burns out evolving a white flame. This has the effect of making the impurities float on the surface, which are removed, and of making the molten metal more fluid. The floating dirt is removed with a flat spoon. The more fluid the metal is, the passage and spreading through the mould is easier. Afterwards, the liquid metal while still boiling in the furnace, is lifted with a crucible (of a smaller size) carried with long tongs and is poured into the moulds, which are kept ready by that time in a line for the purpose. The pouring of metal has to be done slowly but steadily, lest there should be spilling of the metal on the floor or on the persons working. Immediately, it is poured through the orifices of the prepared moulds, it settles down through the cavity in the clay previously

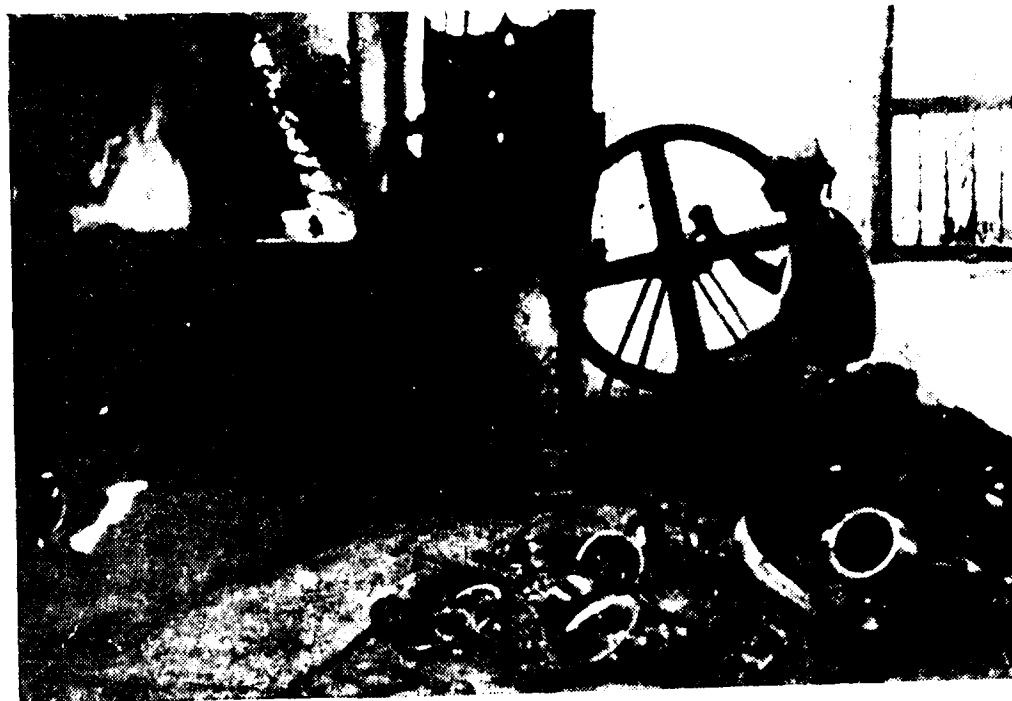


Plate 10. Metal boiled in the furnace before being poured in the moulds.

vacated by the metallic mould. It gradually occupies the whole of the hollow space and solidifies into the article required. Large iron implements of shapes like spoons and tongs are used for testing the boiling metal, for carrying it outside from the crucible and for removing off the impurities from the liquid metal.

45. After about 5 to 6 minutes, when the metal cools down, the wooden frames and the clay are disintegrated and removed. That is, the wooden frames are removed one by one and the cast article is taken out of the clay with a tongs. Thus the casting process is over and the brass article is ready in its primitive form.

Kalahasti Town

46. A furnace (Plate 11) about 8' in height is used for melting the metal at a high temperature in graphite crucibles (Plate 2). It is a specially constructed brick-work with a big opening at the top and a small one at the bottom. The furnace has a special device by which both the moulds and the metal in graphite crucibles are heated simultaneously. In the middle of the furnace there is a horizontal brick wall with small round holes (Plate 11). This wall separates the furnace into two portions. From the bottom hole and underneath the horizontal wall the graphite crucible with metal in it is placed. From the top opening the moulds are placed above the horizontal wall. The moulds are so arranged that the flames which come from beneath the horizontal wall through the small holes touch all the moulds. As many moulds as are necessary for the quantity of metal melting in the crucible are heated simultaneously. The workers know from experience as to for how many moulds the metal is sufficient for pouring into and they are placed in the furnace along with the crucibles of metal underneath. The furnace is heated with charcoal or firewood from the bottom opening. While heating, the top orifice of the furnace will be covered with an iron sheet, which serves as a lid. The heating is done to a very high degree of temperature till the moulds become red hot. By then the metal in the crucible also reaches molten state and boils. It will take at least three hours for the metal to reach the molten state. Now the moulds are removed from the furnace with long iron pincers and are placed in a row with their openings upright. The crucible with the molten metal is then removed from the furnace with the aid of another long iron pincers which have round clips.

The crucible has a small round hole near the upper edge and the molten metal is very carefully poured through this hole into the orifices of the heated moulds till the crevice in each mould is completely filled. Please see Plate 12. This will be done with the aid of another *pattukara*. The crucible with the metal mould be very heavy and the workers have to put in a great effort to carefully carry it and pour the metal to fill in all the moulds slowly and steadily at the same time taking care for themselves. The molten metal occupies the entire space inside the mould. The objects will then be allowed to cool for five or six minutes, by which time the molten metal solidifies and takes the shape of the respective articles. All the moulds are then thrown into a cement water tank and kept there for three or four minutes for cooling. Afterwards they are taken out from the water tank and broken with a light hammer and the baby article comes out from the womb of the mould.

(iii) Repairing

47. The next stage of the production consists in rectification of the defects that have occurred in the casting process. It is possible that there would be malformations mostly due to non-spreading of the molten metal in any particular portion of the article on account of the mud having come in its way or otherwise. This would result in a crevice or hole in the walls of the article or the bottom. But, such cases would invariably be a few. Immediately, a defect is noticed when the casting is over, all such articles are separated and sent to the fitters' section. There is a small furnace here with a blower fixed to it, on which the articles are heated (Plate 13). The workers use tin, *tankam* and *veligaram* (borax) for covering the holes. Sometimes a little silver also is useful for patching up the holes easily. *Tankam* is the soldering substance made out of a mixture of 3 parts of brass sheet and 1 part of zinc. Repairing is done by placing the article on a small furnace so that the defective spot of the surface touches the burning charcoal in it. A small blower is attached to the furnace to enkindle it. The surface is heated well. An iron rod is also heated simultaneously in the furnace held with tongs. Then, a little borax is placed at the heated spot and a little *tankam* is taken with the red hot end of the iron rod and applied at that defective spot and spread on it so as to cover it smoothly. Then the article is allowed to cool down, the defective part or the small hole, as the case may be, would have been patched up completely in the process. Then the articles are also beaten with

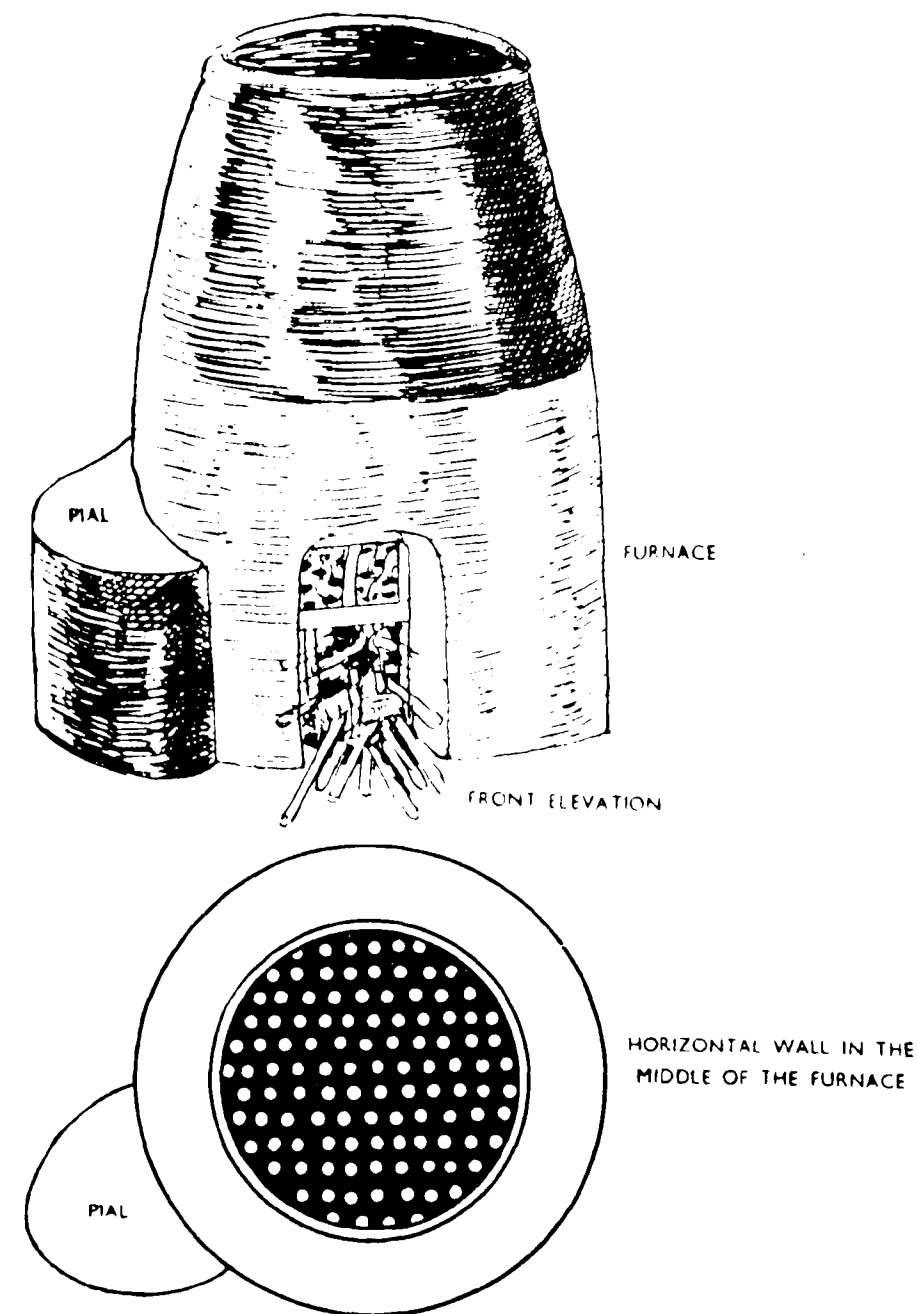


Plate 11. Furnace for melting metal and heating moulds.



Plate 12. Pouring molten metal in earthen moulds.

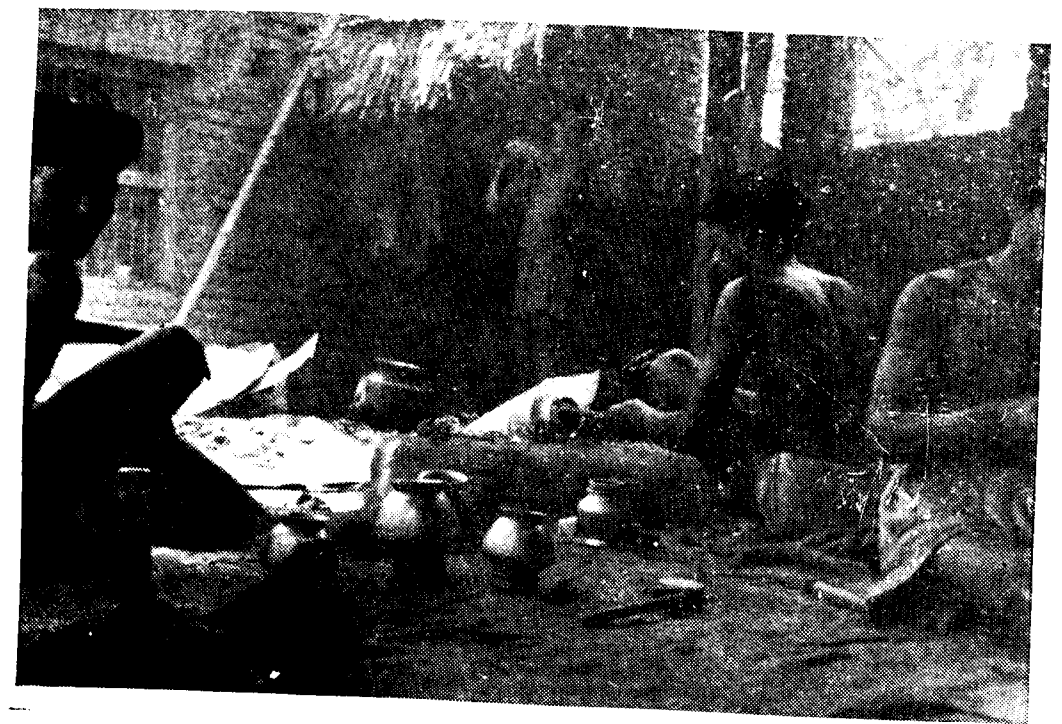


Plate 13. Repairing articles for minor defects with *tankam*, etc.



Plate 14. Hammering the articles.



Plate 15. Turning finished articles.

hammer to make the joints appear as part of the original articles themselves, without being prominently visible as joints or patches. Plate 14 also shows the process of repairing the articles.

48. Apart from repairing the defective articles as described above, another activity is setting right by beating the defects like zig-zags etc., if any, that have occurred in the casting process. The surface of the article is supported on the head of a short crowbar fixed on the ground and is beaten with a small sized hammer with a moderate stress. The side walls of the article can be supported on an iron rod from inside. This hammering has the effect of levelling the surface uniformly.

(iv) Filing

49. What all now remains to be done for the castware brass article is to make its appearance finer and finer and to render it glossy and shining. This is achieved at two levels—firstly by filing or rubbing with files and secondly by turning. Sometimes, additional polishing also is made; but some manufacturers feel it to be superfluous as turning itself would render the article sufficiently lustrous. It can be said that the two processes of filing and turning are complementary to each other. There are many sizes and grades in files used for the purpose. Usually teenaged boys are employed in this section. The whole outer surface of the article is rubbed with files. Files of larger gauge (that are with bigger teeth) are used first to smoothen the surface wherever it is considerably rough. Afterwards, files of smaller and smaller teeth are applied to the surface to achieve smoothness.

50. The process called *rapadam* (రాపడం) at Kalahasti is essentially the same as detailed above under items (iii) and (iv).

(v) Turning and polishing

51. Turning is always done on a machine. The worker who does this job is paid more, almost invariably than the other workers, whether the payment of wages is on time basis or on a piece rate basis, as the work involves lot of continuous strain. In a variety of cases, the article to be turned (i.e. polished) is fixed to the machine and a sharp implement is applied to the surface holding with hands. Please see Plate 15. This implement is a scraper and is locally called *legakammi* (లేకమ్మి) in vernacular in the East Godavari District. It is made out of the worn out files by bending them and sharpening the edge as that of a knife. Usually, a file does not

last for more than a week and it has to be replaced by a new one with the filing workers. And, the discarded file is given away to the turning section for utilising it for the new purpose after suitably converting it. Generally, electric power is applied for the turning machine and the peg of the machine to which the vessel is attached revolves very swiftly. By tightly holding the sharp edge of the *legakammi* against the surface of the vessel, the worker achieves, in effect, brisk scrubbing of the brass metal surface with a sharp steel edge thus lending to the surface smoothness coupled with brightness and gleaming. After the outer surface is completed, the worker fixes the *legakammi* to the turning machine and holds the inner surface against it. He turns the vessel into the required positions alternately, so as to enable every area of the inner surface to come into contact with the swiftly rotating sharp edge of the *legakammi*. In this way the article is turned for a while by which time it gets sufficiently polished.

52. As regards the process at Kalahasti, not much need be said again because the operation is quite similar. The sharp edged tool is called *uli* (ఉలి) here and it is held with stress against the surface of the article which is revolving swiftly fixed to the peg of turning machine. The article is attached with lac to the peg of the machine (Plate 16) by applying a little heat. The *uli* is held against the outer and inner surfaces of the article alternately until the whole surface becomes shining. Afterwards, the article is removed applying a little heat again.

53. The next stage of additional polishing is resorted to only by a few manufacturers, particularly in cases of articles of costlier type like drinking tumblers, screw jugs, etc. At the Chitrada workshop the polish bars of Ronuk polishing composition manufactured by M/s. Ronuk & Company, Bombay are used for the purpose. The polish which is in the form of solid wax is applied to a cloth (Mettur Mull is used) sandwiched between two circular wheel frames fixed to a revolving machine. While the frame rotates rapidly the article is held against it so that the cloth edge (with polish applied on it) keeps contact with the surface. Evidently only the outer surface has to be polished like that. After this final polishing, the brass castware is ready for market.

54. At some workshops in Kalahasti, the polish is applied to a thin leather and rubbed against the outer surface of the article, while at others, the above described method is adopted for polishing.

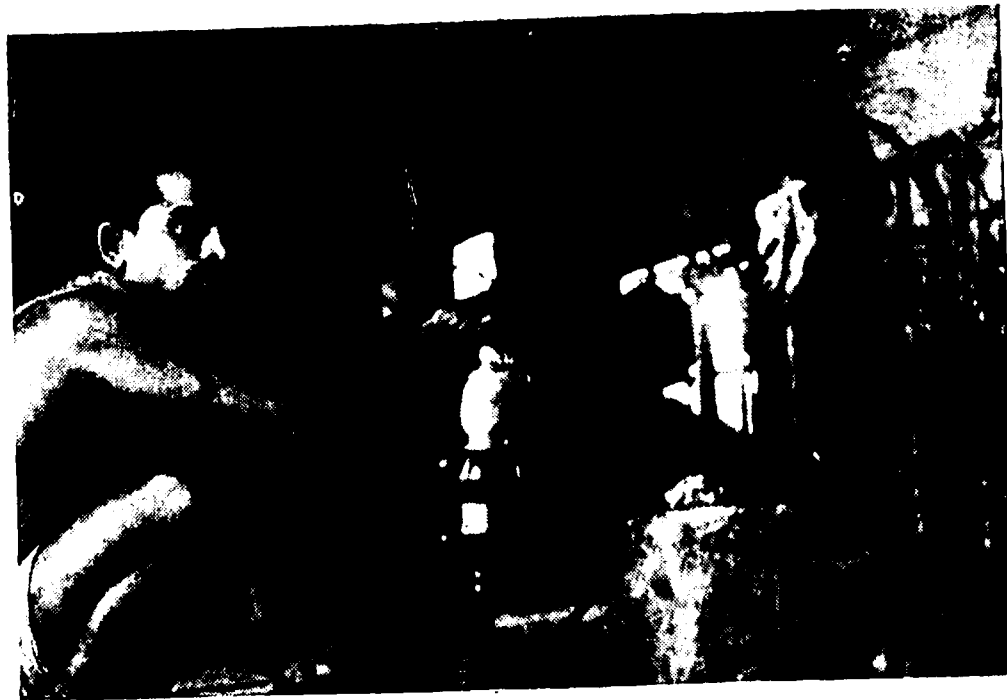


Plate 16. Attachment of the article to the turning machine.

55. There is another step in the manufacture of screw jugs between the processes of repairing and turning namely, threading. It is done on lathe machine (Plate 17). Fine threads of about 0.1" thickness are wrought on the outer surface of the jug as well as on the inside wall of the lid so that each fits into the other at screwing. Though the process is neither elaborate nor too intricate, its importance needs no emphasis, and the lack of that machine with the other manufacturers in the area in the East Godavari District has the effect of confining the facility of producing these articles to 2 workshops, namely, Sri Rama Cottage Industries, Chitrada and M/s. Dasari Sambayya & Co., Rajahmundry. The same procedure is followed at Kalahasti also.

56. All the articles, as they come out of the production unit, are weighed and covered with white tissue paper and kept ready for sale either locally or by export to various places.

Crucibles

57. It would be of interest in this connection to say something about the manufacture of crucibles,

as the casteware industry is closely dependent upon the availability of good quality crucibles at reasonable prices.

58. There are 28 crucible manufacturing units at Rajahmundry, which supply all sizes of the crucibles to many neighbouring districts and even to the far South for several industries of metal castware. Graphite is obtained from mines at Sambhalpur and Titilagarh in Orissa. It is said to be also available at Jangareddigudem in Polavaram Taluk of West Godavari District. The manufacturing process of the crucibles involves powdering the graphite, mixing in it a proportion of 1/9th clay and a little borax with water, pounding the mixture with human feet (trampling) for 4 or 5 days continuously, then putting that mass in moulds of required sizes and pressing hard 3 times successively, repairing for any malformations in shape, drying in the sun, coating with a colour of brick-brown and finally burning for one day with ordinary firewood. One of the manufacturing units visited is M/s. Sri Vijayeebhava Crucible Works of Rajahmundry city at Jampeta, which seems to have widespread market, for, the production load here is fairly heavy.

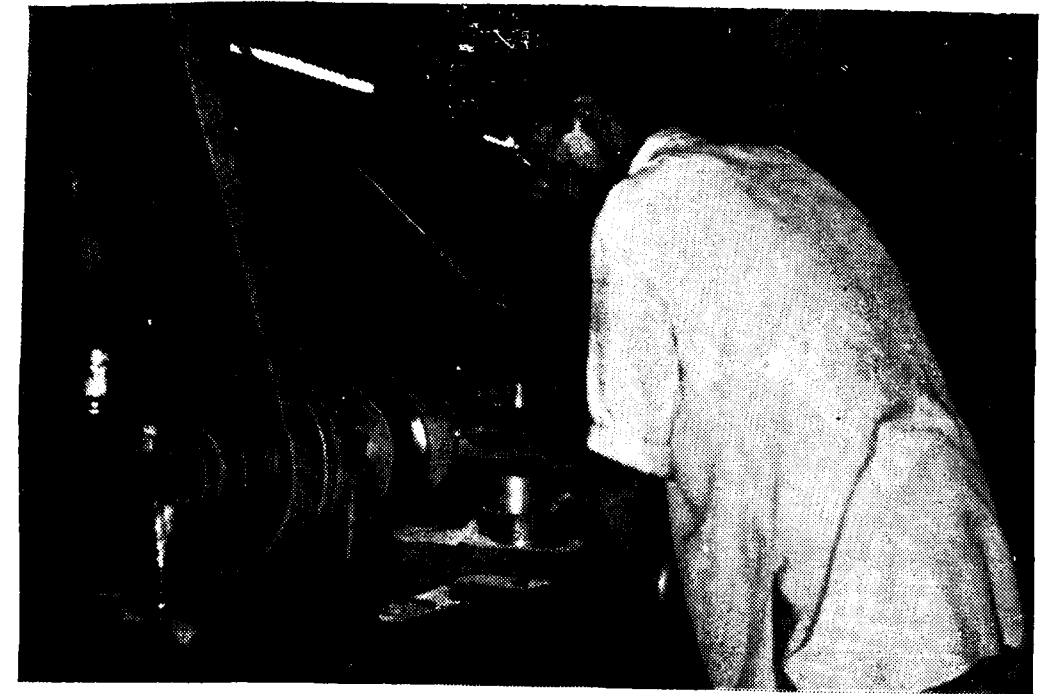


Plate 17. Lathe machine for making threads on screw jars.



Plate 18. A few finished screw jars of brass castware.

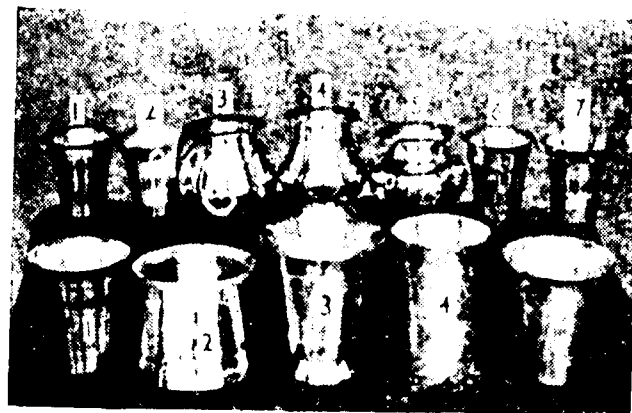


Plate 19. Finished articles of brass castware.

SECTION V

ARTICLES AND DESIGNS

59. The range of brass castware articles manufactured is very large. The shapes and designs vary according to the demands in the market. The following are some of the articles produced in the workshops visited at Chitrada, Kakinada and Rajahmundry of East Godavari District and at Kalahasti of Chittoor District :

- (i) Screw jars (మర చెంబులు or శైల చెంబులు).
- (ii) Cooking utensils (for rice, dhal, curries and for boiling milk, etc.).
- (iii) *Chembus* or handy vessels for carrying water, milk, etc. (చెంబులు).
- (iv) Tumblers or glasses — drinking jugs.

East Godavari District

60. A few of the names by which the different shapes or designs of the above articles are known at the centres studied at Kakinada, Rajahmundry and Chitrada are as below :

Item (i): Round shape, cylindrical shape and a shape resembling paraboloid.

Item (ii): (a) Round utensils of numerous sizes according to their utility for cooking different kinds of food etc.

(b) Curry utensils which are with a broad mouth and of shape resembling more or less a wide cylinder and the height of which is less than its diameter.

(c) Mysore vessel or cooking vessel having a round bottom and a straight upper portion.

Item (iii): Some of the *chembus* are called by names *tiruvrakunda* (తిరువ్రకుండా), *kumbhakonam chembu*, etc. Usually they are of round and oblong shapes.

Item (iv): The names of different patterns in the drinking glasses or *lotas* (లోతలు):

- Ice glass
- Soda glass
- Butta* glass (బుట్టా గ్లాసు)
- New pattern glass
- Palakala* glass (పలకాల గ్లాసు)
- Vampu* glass (వంపు గ్లాసు)
- Orange glass (ఆరంగ్ గ్లాసు)

Plate 18 illustrates the three kinds of screw jars (మర చెంబులు or శైల చెంబులు) of the three shapes, cylindrical, parabolical and round, locally called *jadee kaja*, *mundiri kuja* and *sada kuja*.

61. Plate 19 shows some of the glass tumblers and drinking vessels. From left to right the articles illustrated are known by the following names:

- First row:
1. New pattern
 2. *Kalayi ginne* or field vessel (*Polamu ginne* పొలము గిన్నె)
 3. *Palakala* tumbler or *mattu* glass (పల్లకాల గ్లాసు) i.e., tumbler with a base
 4. Soda tumbler or Calcutta glass
 5. *Vampu* tumbler or Palghat glass
- Rear row:
1. Orange glass
 - 2 & 7. Ice glass
 3. *Lota chembu*
 4. *Apukara chembu*
 5. *Gundu chembu*
 6. New pattern glass

Items 4 and 5 of the first row have a large market among the glasses.

62. The range of production as per the designs listed above depends on the quantum of demand obtaining for each variety and design or shape of the articles. The round shape screw jars are more sold because they hold more volume of water etc., and therefore more utilitarian. The other shapes are selected for their appealing pattern. The round utensils for cooking purposes are of old taste and the Mysore vessels are of fashionable type produced in recent years. The broad mouthed curry vessels are convenient for their named purpose. In this way the production of different types of vessels or other articles depends upon the trends of the market. Among the types of glasses or *lotas* mentioned above, the soda glass and *vampu* glass are said to be more in demand because they are convenient to use, beautiful to look at; and also it is said to be possible to make more number of glasses of these shapes out of a maund of metal weight. The *palakala* glasses

are used more by labour classes, perhaps because they are made of more weight with sturdy walls to last for several years. As the drinking glasses find their place in drawing rooms, at dinners and at other social gatherings, more importance is bestowed by higher classes of society on their attractiveness in shape and design than on their utilitarian character.

Chittoor District

63. A similar study of the articles produced at Kalahasti reveals the following varieties of articles. Here again the production moves with the demand in the market.

64. Some of the articles that are produced in the workshops are given below:

1. Screw jars: (There are two varieties locally called *mundri kuja* and *jadi kuja* besides the ordinary type or *sada kuja*);
2. *Chembus*: These are generally round in shape;
3. Tumblers locally known as *lotas* in Telugu. These are meant for drinking water, milk etc. There are different shapes in their production. They are:
 - (i) *Sappa lota*
 - (ii) *Kalahasti lota*
 - (iii) *Madikaya lota*
 - (iv) *Valappu lota*
 - (v) *Pala lota*
 - (vi) *Ice lota*
 - (vii) *Sada glass*.

65. It is generally complained that the invasion of the market by the stainless steel in recent years has to a certain extent hampered the demand for brass articles, particularly in case of drinking glasses and handy vessels. All rich people prefer the bright

and shining steel articles. For purposes of cooking, the brass articles have not yet been displaced from the market.

66. If we attempt to know the sale prices of the articles of brass castware it must be first noted that it is difficult to enumerate all the shapes and sizes produced at the various centres. Moreover the prices vary from time to time. However, the following list conveys an idea of the sale prices of the articles collected from the various centres within the obvious limitations for that type of data.

<i>Kakinada</i>		Rs.	P.
Glasses all shapes-medium size	...	8.25	per Kg.
Glasses-all shapes-small size	...	8.50	do
<i>Rajahmundry</i>		Rs.	P.
Screw jars	...	9.20	per Kg.
Glasses all shapes medium size	...	8.00	do
Cooking utensils-all shapes and sizes	...	8.00	do
<i>Chembus</i>	...	8.20	do
<i>Chitrada</i>		Rs.	P.
Screw jars (<i>sada kuja</i>)	...	9.25	per Kg.
Screw jars (<i>mundiri kuja</i>)	...	9.35	do
Glasses	...	8.75	do
<i>Chembus</i>	...	9.15	do
<i>Kalahasti</i>		Rs.	P.
Screw jars (<i>sada</i>)	...	10.25	per Kg.
Screw jars (<i>mundiri</i>)	...	10.35	do
Screw jars (<i>jadi</i>)	...	10.35	do
<i>Chembus</i>	...	10.15	do
Glasses (ice glasses called fancy tumblers)	...	12.00	do

SECTION VI

MANUFACTURERS

67. There are 20 manufacturing units of brass castware articles at Kakinada. Out of these 20, a few are considered to be bigger units depending upon the capacity of the workshops and turnover at them. About 14 of these are large; and all the 20 establishments employ a total of about 250 workers.

68. In fact, the work of production does not go on throughout the year at the same pace. The heaviest season is during the four Telugu calendar months *Magha* (January—February), *Phalguna* (February—March), *Chaitra* (March—April) and *Vaisakha* (April—May) perhaps due to its being the time for marriages and also due to the atmosphere being congenial. During the rainy months of *Sravana* (July—August) and *Bhadrapada* (August—September) there is no work practically for the smaller units. The bigger establishments pull on with a bare minimum of workers.

69. A list of these 20 concerns along with the caste of the proprietors is given below:

Name of company (1)	Caste of proprietor (2)
1. Chandraiah Brass Works	Padmasale
2. Sri Krishna Brass Works	„
3. Laxmi Brass Works	„
4. Ramadoss Brass Works	„
5. Venkateswara Brass Works	„
6. Ratnamma Brass Works	„
7. Markandeya Brass Works	„
8. Ganesh Brass Works	„
9. Parvathi Sankara Brass Works	„
10. Potharaju Brass Works	„
11. G. Narayanamurthy Brass Works	„
12. Mereti Satyam Brass Works	„
13. Seetaramanjaneya Brass Works	Kapu
14. Sai Brass Works	„
15. Kumili Paidiah Brass Works	„
16. Venkataramana Brass Works	Golla
17. Satyanarayana Brass Works	„
18. Dhanalakshmi Brass Works	„
19. Kona Apparao Brass Works	„
20. Raja Rajeswari Brass Works	Kshatriya

70. A list of the workshops at Kalahasti along with the caste of the respective owners is given below:

Name of workshop (1)	Caste of owner (2)
1. Sri Ramachandra Metal Industries Limited	Reddy
2. Maheswara Metal Industries	Vanniya Reddy
3. Venkatachalapathi Metal Works	„
4. Sai Metal Works	Baliya
5. Venkatachalapathi Metal Industries	Pillai
6. Srinivasa Metal Works	„
7. Murali Metal Works	Baliya
8. Krishna Metal Works	Mudaliar
9. Jayaram Metal Works	Yadava
10. Rama Krishna Metal Works	Baliya
11. Sri Rama Metal Works	Aiyangar
12. Sri Narayana Metal Works	Reddy

All the first eleven workshops are bigger units and many have lathe machines also. All the above concerns employ about 450 workers. The slump period in production is the rainy season. In other seasons of a year the production goes on at a uniform pace, the peak period being the months of marriages i.e., April and May.

71. The following are the units at Rajahmundry:

- (i) Dasari Sambayya & Co.
- (ii) Raja Metal Industries
- (iii) Kalepu Samudram & Sons
- (iv) Nandam Ganiraju & Sons
- (v) Vamana Suryanarayana
- (vi) Pichika Veerabhadru
- (vii) Godavari Brass Foundry
- (viii) Mothika Sanyasi

It is estimated on a rough basis that about 150 workers are employed in the workshops of the above 8 companies. The two companies at Chitrada are:

- (i) Sri Rama Cottage Industries; and
- (ii) Sri Subrahmanya Brass Foundry.

72. The progress of production in the workshops of brass industry does not dwindle to a considerable extent in the rainy season. There are, however, certain difficulties which some of the bigger units manage to get over and maintain their

tempo of production. The first thing is that the market is slack during those months owing to the fact the season is not one of marriages nor of *jataras* etc. The other difficulties are—

- (i) water in the clay is not suitable;
- (ii) water in the furnace and wet fuel are bad as also any fall of water drops in the melting metal is dangerous;
- (iii) moisture on the surface of the articles is not conducive to turning; and
- (iv) additional difficulty involved in the Kalahasti process is that drying the prepared clay moulds in the sun takes a lot of time and also to protect them from rain water is fraught with difficulties.

73. If we enquire into the types of the manufacturing units as to the categories (a) entirely based on the labour of family members (b) run on labour of family members and paid apprentices (c) mainly run on labour of employee (d) co-operative and (e) others, we almost fail to find units falling in the categories (a), (b), (d) and (e). The brass industry involves mass production at all the 4 centres under study. The manufacturing units are each so big that mere participation by the family members takes nowhere. Each concern has necessarily to employ several workers for the production to go on satisfactorily. However, it is noticed that at Kakinada there are 10 units in which the owners' family members also work along with the workers. At Chitrada there is one such unit where the proprietor also works. There is no unit run on co-operative lines at any of these 4 places of study.

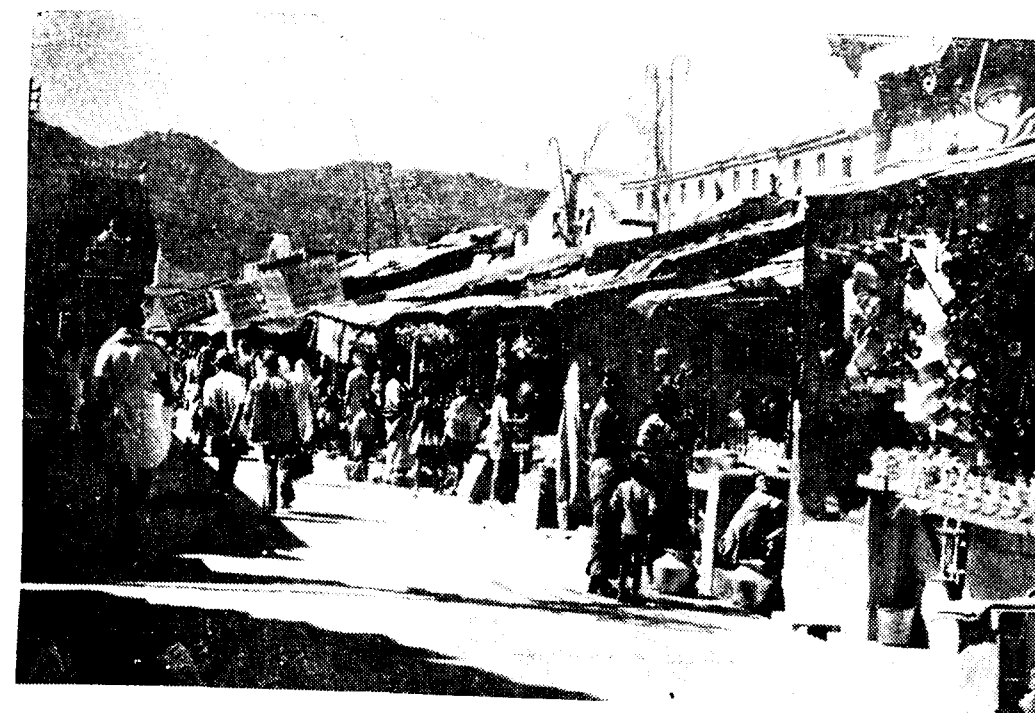


Plate 20. Rows of shops selling brassware articles on the Tirumalai Hills.

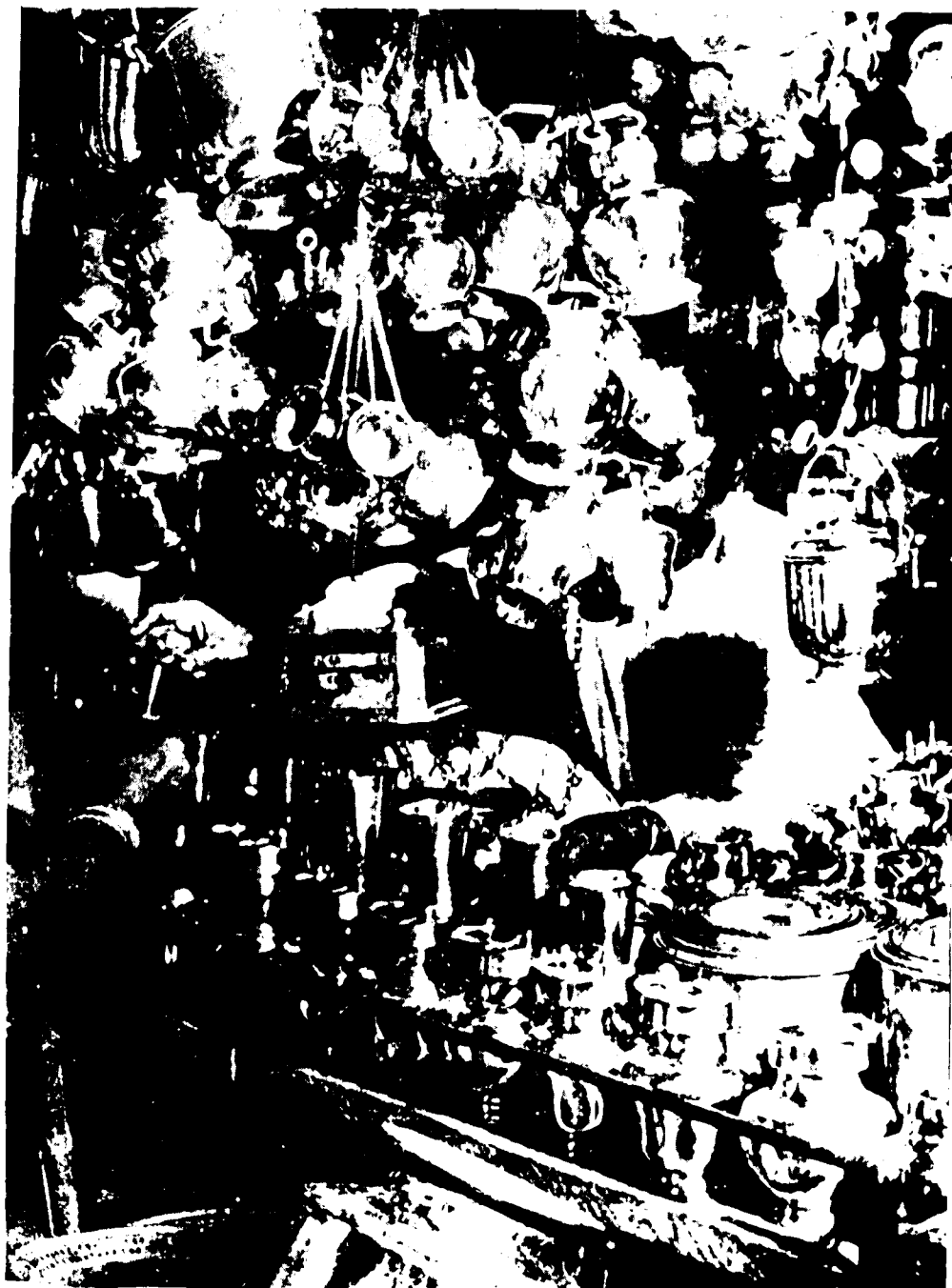


Plate 20A. A collection of brass articles at a shop.

—Courtesy : Sri S. R. K. Rao, Deputy Director of Information and Public Relations, Hyderabad.



Plate 21. A display of brassware articles at a shop on the Tirumalai Hills.

SECTION VIII

WORKERS

77. In the firm called Sri Rama Cottage Industries at Chitrada there are 45 workers. All are adults and males. Most of them are local persons excepting two who belong to Kalahasti. In those days, when the workshop was started in 1950 about 20 workers with families were brought over from Kalahasti to Chitrada, as the craft was entirely new to this place. They were paid advances of sums of Rs. 300 each, besides provision for mess and lodge. Local people gradually learnt the craft working with the Kalahasti batch and became proficient. Originally, it is stated, Kalahasti invented the screw jug which is also called (రైలు కంబు) *railuchembu* (meaning vessel used in railway journeys). This Chitrada workshop is equipped for producing these articles. The cost of the lathe machine which is essential for creating threads at the mouth of the jug as well as for the lid is prohibitive and it is beyond the means of average manufacturers. However, the production of this species of beautiful and very useful articles has developed well at Chitrada in the East Godavari District. The names of the two Kalahasti workers who have stayed back are Satterwada Kollapur Reddy and R. Subrahmanya Reddy. Curiously enough, they follow their traditional method in turning finished articles. This method of Kalahasti technique is a little at variance with the local system generally followed by all others.

78. In Maheswara Metal Works at Kalahasti there are thirty-six workers. Thirty-two workers are skilled workers and the rest are unskilled workers. Except one minor worker all the others are adults. All the workers are males excepting one female who is also a skilled worker. The child worker is employed in turning and polishing section for sharpening the chisels. He is paid Rs. 1.50 P. per day. All the workers in the workshops visited at Kalahasti are local people. It is, however, interesting that many workers from Chitrada have come over to Kalahasti whereby the Chitrada method of moulding is introduced here. In the workshop called Sri Narayana Metal Factory at Kalahasti all the workers (10 in number viz., 1 Muslim, 1 Naidu, 2 Kapus and 6 Settibalijas) belong to Chitrada of East Godavari District. They have migrated to Kalahasti at the request of the

proprietor of Sri Narayana Metal Factory. The leader of Chitrada workers is one Sri Kakrapalli Surya Rao. The reason for their migration was that the proprietor of the factory had agreed to pay wages according to the quantum of production by the workers. For 90 *chembus* produced three workers get Rs. 12 as wages per day *i.e.*, each worker gets Rs. 4 per day. Three workers can manufacture 90 *chembus* in a day. But it is said that at Chitrada they were paid at fixed rate of Rs. 2.50 P. per day irrespective of the number of articles produced.

79. The workers at the other manufacturing units visited at Kakimada and Rajahmundry are all local people. The workers at Rajahmundry had once formed a manufacturing unit jointly and run it for a few years. It seems to have ended in failure due to mismanagement and inadequate finances.

80. The financial condition of the workers is generally poor. Every family of the workers ordinarily consists of 4 members of whom only one member is working in the industry. The children or brothers of the workers themselves are not generally initiated into this industry. Sometimes they are put on education and sometimes on other professions like tailoring, servicing in hotels, selling vegetables, cycle repairing, motor mechanism, etc. This trend goes to show that the workers in this industry are not quite happy with their lot. The work involved is very hard. Working conditions are such that sweat is always on the foreheads of the workers, because of the presence of furnace at a high temperature and also because of the strenuous job of heating the metal and turning. Turning is particularly exacting and the worker will have to continuously hold the knife edge against the wall of the vessel with all the force at his command. For this reason alone the workers at turning are usually paid at a higher rate than others.

81. At Kalahasti also, the economic condition of the workers is far from satisfactory; with the exception of a few, almost all of them are on rocks. Generally one or two persons of each family work in this industry. The kith and kin of the workers are not encouraged to take to this industry as the task involved is strenuous.

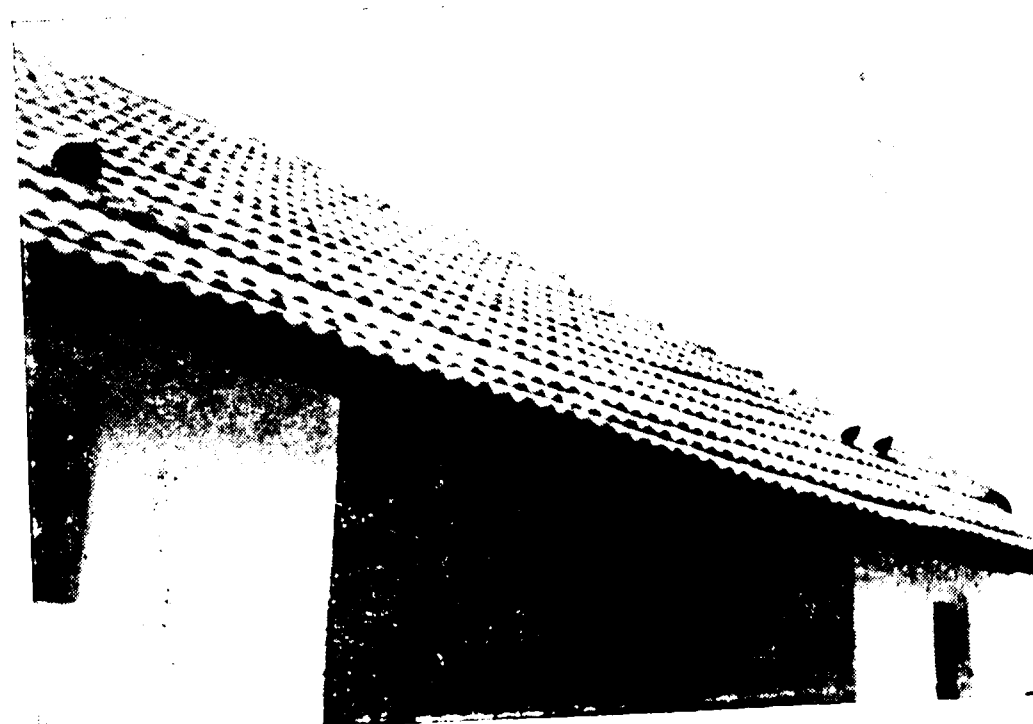


Plate 22. The house type of a craftsman of the brass industry at Chitrada village.

82. There is a workers' union at Panagal called the Kanchupatra Karmikula Sangham (workers' union). The workers get their grievances redressed through the union and the union strives to maintain unity among them. Altogether it is gathered that there are about 650 workers at Kalahasti engaged in brass industry. The union was formed in the year 1953; and about 75% of the total workers are members of the union. At the time of revisit to the town in May 1965 the members of the union went on a strike as a sequel to a dispute with the managements of the manufacturing concerns regarding the items of work the workers had to do and the wages paid for them, etc. The workers who were not members of the union went to work and the workshops in which they were employed ran normally.

83. The workers at Kakinada mainly belong to the castes Padmasale, Kapu, Settibalija, Yadava, Kshatriya and Agnikulakshatriya. Even though the brasssmithy is the traditional profession of the castes Kamsali and Kanchara, the people from other castes as well have become quite proficient through generations especially in big towns and cities where the outlook is not so orthodox and where the employment opportunities are too many. Similarly the workers at Rajahmundry pertain to castes Devanga, Kapu, Vaisya, Padmasale, etc. One conspicuous difference between the workers at Kakinada and Rajahmundry is that at the former place the workers are mostly teenagers or young apprentices while at Rajahmundry each is a full-fledged craftsman quite proficient in the industry. It is claimed that the production at Rajahmundry is more complicated comprising mostly cooking vessels etc., while at Kakinada the *lotas* (glasses etc.) made do not require so much skill.

84. The craftsmen of Kalahasti come from many communities, the prominent among them being Reddy, Vanniya Reddy, Balija, Yadava, Muslim, Mudaliar, Harijan, etc. Almost all the craftsmen are employees in workshops. Many of them reside in tiled houses with the exception of a few who dwell in huts. Their residences are situated very near the workshops at Panagal, Balajipantula Agraharam and Ardalamittaputtur localities of Kalahasti town. The economic condition of the workers is generally poor.

85. The house types of the workers in the brass industry need no specific mention. They live severally in the tiled houses or thatched ones on rent. A few, of course, possess own houses also especially in villages like Chitrada. Plate 22 shows the tiled house of a craftsman at Chitrada.

86. It would be of interest to record a few particulars about the earnings of the workers in the various centres covered by the study.

Kakinada: An alround worker who is conversant with all functions in the manufacture of castware articles from start to finish is paid Rs. 3.50 per day. The turners earn by quantum of work turned out and nobody gets less than Rs. 2.50 a day. The moulders, hammersmen etc., are paid Rs. 1.00 to Rs. 2.00 according to their proficiency and skill.

Rajahmundry: Payment is always by turnover on each day. The wages earned by the different categories of workers are as follows on average:

	Rs. P.
Turners	4.62
Moulders	2.00
Hammersmen and repairers	3.00

Chitrada: Here also payment is on the basis of outturn on each day by different classes of workers. Those in the turning section earn Rs. 2.50 to Rs. 4.00 a day and those in the other sections namely, moulding (including casting) and repairing (including hammering) earn Rs. 2.25 to 3.00 per day.

Kalahasti: Payment of wages is on turnover basis. The range in which the workers in the various sections earn their wages daily are reported to be as under:

	Rs. P.	Rs. P.
Moulding section	2.50	to 3.00
Casting section	2.25	to 2.83
Filing, Repairing	2.50	to 2.75
Turning	2.75	to 3.25

An assisting boy in turning section is paid Rs. 1.65 a day.

SECTION IX

CASE STUDIES

Case study of an artisan-cum-manufacturer at Kakinada

87. Sri Nalamati Suryanarayana Murthy (52), Proprietor of Chandrayya Brass Works, Jagannadhapuram, Kakinada is a master craftsman of the brassware industry with a vast experience of over 35 years. He belongs to Padmasale caste. His father late Chandraiah had been an illustrious manufacturer of brass vessels and trader in them. It is claimed that several craftsmen who have now turned into producers at many places in the neighbourhood had learnt the craft from Chandraiah. Chandraiah's ancestors had once belonged to the northern region of Visakhapatnam — Srikakulam Districts. Many decades ago, Chandraiah seems to have been a pioneer in the field and was among the first who established the brassware industry at Kakinada. Sri Suryanarayana received his training from his father since childhood. His education was only of elementary standard, but he has built up considerable trade in the brassware industry and he is now an employer of about 20 workers. Sri Suryanarayana Murthy is the Treasurer of the local Brassware Manufacturers' Association; President for the 5th Mandal of the Town Congress Committee as well as a Member of the Working Committee of that Congress. He knows dispensation of Ayurvedic medicines and used to have considerable practice in yester-years. Sri Suryanarayana Murthy's wife belongs to Rajahmundry and her father had also been an Ayurvedic Vaid. He has 2 sons and 3 daughters and a dependent widowed sister. The first son is 19 years old and studying in B.Sc., (Final) class. Sri Suryanarayana Murthy likes to put his son also in the same trade as himself, but only after completing the higher education; the latter also reciprocates the idea. The other children are all young and studying at school.

88. Sri Suryanarayana Murthy has seen the industry as a full-fledged craftsman from as far back as 1925. According to him, prior to World War II, all articles were produced only from brass sheet and the range included *binde* (బిందె), *chembu* (చెంబు) [round containers - bigger and smaller for water carrying], vessels for keeping milk as well as vessels for cooking. The brass sheet had become very

scarce when the imports were heavily hit during the war period. Later on, the industry saw its revival in 1947 with the introduction of process of casting. The advantage in the process of casting is that all old, used and scrap metal can be utilised while preparing new articles and the production is very quick. The quantity of metal once melted in a crucible in the furnace comes to 3 maunds (1 maund = 11 Kg. 200 gr.) of weight at a time and about 100 to 150 tumblers can be prepared. Thus the turnover is very quick.

89. Sri Suryanarayana Murthy has at present confined his production only to tumblers, or *lotas* (లోతా) as locally called, of various shapes and sizes. As is the case with the other workshops, the production range depends upon the demands in the market. According to him 25 to 100 glasses can be manufactured out of a maund of brass metal which numbers depend upon the variations in size. According to different sizes of the tumblers, the total number of articles that can be made out of a maund of metal are:

<i>Palakala</i> glasses	25, 32, 40, 50
Soda glasses	25, 32, 40, 50
<i>Vampu</i> glasses	32, 40, 50, 60, 70, 80, 100
New pattern	40, 50
Orange	40, 50
Ice glasses	40, 50

As seen from the above, the maximum number of *vampu* glasses that can be manufactured is 100 from one maund of metal and the smallest size would be of 3" in height. These cheaper varieties are purchased in bulk for free distribution during funeral ceremonies, etc. The whole quantum of production at his workshop is against orders and disposed of immediately. The names of wholesalers who usually place orders with this manufacturer are M/s. Kaza Chandrudu, Vijja Apparao and Saudagar Shaik Ahmad & Son. Of course, these traders get articles produced from other manufacturers also besides the informant.

90. Most of the workers with Sri Suryanarayana Murthy are teenagers, who get themselves trained in the various stages of production, because

the employer takes care to see that workers are posted to the different jobs alternately. This practice is claimed to be developed out of the progressive outlook of Sri Suryanarayana Murthy inherited from his father in imparting training to employees, so that they may themselves become proficient in all aspects of the craft.

91. The working hours of workshop are from 8 a.m., to 12 noon, and from 2 p.m., to 6 p.m. The ground plan is rectangular whose length and breadth are about 36' x 16'. On one corner the furnace and on another corner the turning machine are situated. Most of the other space is occupied by moulding operations. There is also the fitter's section near about the furnace. At the time of the visit there were 10 persons working there. The workers are paid on daily rate basis from 88 P. to Rs. 3; the highest paid workers are the turners. It is ascertained that it takes half-a-day for preparing a set of 96 glasses from start to finish the casting. One man can turn all of them in one day on the machine for polishing and lustre.

92. For the purpose of manufacturing, Sri Suryanarayana Murthy gets old scrap from the traders themselves while receiving orders. The wages or *majuri* as locally called comprise of Rs. 15 in cash payment per 9 visses (12 Kg. 600 grams) of scrap to be converted into finished goods taken back by weighing 8 visses or one maund (11 Kg. 200 grams). These are the rates fixed by the Brassware Manufacturers' Association at Kakinada. The daily expenditure on the workshop consists of Rs. 20 as wages to the workers, Re. 1 on charcoal and Rs. 6 for coke and Re. 1 on miscellaneous items like borax, clay, *tankam*, etc. The turnover would be 2½ maunds of finished goods per day on average.

93. The average net income of Sri Suryanarayana Murthy is given out to be Rs. 300 per month, or Rs. 3,600 a year. The annual expenditure on different items of household needs would be roughly as follows: Rs. 800 on cereal and Rs. 700 on non-cereal foods; Rs. 400 on such items as milk, curds, ghee, edible oils etc; Rs. 435 on fuel and lighting; Rs. 500 on clothing; Rs. 400 on travelling and Rs. 200 on education of children, the balance of Rs. 165 being on miscellaneous. It is asserted by the informant that all persons engaged in the industry have only enough means for comfortable living with their families and none has become rich as such.

94. Sri Suryanarayana Murthy is the Treasurer of the Brassware Manufacturers' Association, Kakinada. This Association was formed in 1948 and presently has a strength of 18 members. An advantage which the members derive out of the Association is said to be that they get regular allotment of coke from the Government usually at the rate of one wagon a month; and it is distributed among themselves equitably. It is learnt from the Association that there are about 150 families of Padmasale caste engaged in the industry—the largest number for any caste—and 50 families of Kapu caste, the next in numerical strength.

Case study of a manufacturer at Rajahmundry

95. M/s. Kalepu Samudram & Sons is a big concern manufacturing brass castware articles at Jampeta in Rajahmundry. Altogether there are 10 units in this city, of which 6 are situated at Jampeta, one each at Annapurnapeta, Tadithota, Aryapuram and Thummalava. It is understood there is equipment with some of these units to convert the dust of metal, which falls off while turning cast articles, into ingots of brass for use again. Sri Samudram says that the craft originated here about 45 years ago and that the existing companies started 25 years back. The reason for concentration of the industry at Jampeta is given to be that the present employers of the manufacturing units were in the beginning workers in this craft and gradually became owners, and, that they established their production units in the locality where they had been living previously. Even now many of the workers in the industry belong to Jampeta area. Four-walled houses with thatched or tiled roofs consisting of one room and a kitchen are the usual habitations of these workers on a monthly rental of Rs. 12 to Rs. 15. Sri Samudram says that every manufacturing unit at Rajahmundry employs about 20-25 paid labourers a day. There are altogether 29 male workers and 2 females with the informant—9 in the moulding section, 2 with furnace, 8 for fitters' job and 10 as turners; the females attend to carrying vessels hither and thither. Most of the workers belong to the 3 castes or communities—Devangas, Kamsalis and Kapus. Most of the proprietors at Rajahmundry are said to be Devangas. It is believed that persons who knew the craft came down first from the east (తూర్పు) namely, Vizianagaram side.

96. There is an Association for the workers here called the Brass Castware Workers Union, which takes up matters relating to protection of rights of

the workers and guarding them against ill-treatment at the hands of the employers. It was started in 1946. They ran for some time a workshop on co-operative basis but it had to be given up owing to financial losses incurred. There is a Brass Castware Manufacturers' Association also at Rajahmundry started in 1944. All the local manufacturers are its members.

97. The workshop of Sri Samudram is considerably large. The total fixed capital is expected to be Rs. 15,000 and circulating capital is about Rs. 20,000 per annum. The total weight of manufactured goods at this workshop is estimated to be 23½ tons in a year, of which about 20 tons are produced on own account and 3½ tons on hire system (on payment of production charges) for traders against orders. The rate of *majuri* or production charges is Rs. 16 per maund. There was a profit of about Rs. 4,000 during the calendar year 1961. The usual working hours are 8 a.m., to 12 noon and 2 p.m. to 5 p.m.

98. The consumption of coke for the furnace at this workshop is 2 Cwt. a day. The Brass Castware Manufacturers' Association is allotted a quota of one wagon every six months and the share of each manufacturer does hardly last for a fortnight. Owing to this scarcity, crude oil furnaces have been fitted in 3 establishments here. The consumption of copper and zinc is put at 3 Cwt. and 2 Cwt. respectively in a period of six months, in addition to 25 tons of old scrap purchased locally. The clay of Godavari river, which flows by the side of the city, is got at a rate of Rs. 8 per cart load and it lasts for a month.

99. The range of articles produced at this workshop is large. Cooking vessels of all types, glasses of all designs and shapes and *chembus* are prepared. Usually, no decoration or motif is embossed on the brass articles, because they are meant for every day use. A few perforated lines would do to relieve the monotony to the eye on any article. The articles are stacked in the office room of the workshop either in large baskets or almyrahs. The time lag for disposal is too little.

100. The sale of articles is always by weight. The cost varies according to the workmanship and skill involved in the production of a particular species. It is said that most of the articles manufactured here

are exported mainly to Tamilnad. It seems there are no production units of brass castware articles in Tamilnad, except a very few, started recently by the persons migrated from here with the help of local labour there. The exported goods are transported by lorry service and railway and collection of cost is effected through the banks.

Case studies of Chitrada

(i) Sri Rama Cottage Industries

101. Sri Rama Cottage Industries is the biggest manufacturing unit of brass castware articles at Chitrada. It is owned by Sri Patchala Subba Rao. The turning machines are electricity-power driven and the furnace is of hard coke. There is a Manufacturers' Association at Chitrada also, in which this concern is by far the most prominent member. Quotas of hard coke are allotted in the name of the *Association—one wagon was given in August 1962 for that year, and another of 21 tons load in April 1963. As has been mentioned elsewhere, the production of screw jugs (సకంబం) is the speciality of this concern. The equipment here includes 2 lathe machines. There are 2 furnaces for melting the metal. There are 45 workers in all—12 in the moulding section, 6 in fitters' (repairing) section, 12 in turning, 2 on lathe machines, 4 in casting; the rest being entrusted with sundry jobs like polishing, fitting handles to screw jugs, etc. The wages that accrue are approximately as follows per day (payment is on turnout basis—a man who works more gets more):

Moulding	Rs. 2
Fitter	Rs. 2
Casting	Rs. 2
Turning	Rs. 2 to Rs. 3.50
Polishing	Rs. 1

The raw materials used are mainly the old scrap purchased from the shops at Kakinada and Rajahmundry, besides the quotas of copper and zinc allotted by the Director of Industries & Commerce and supplied through the Raw Material Servicing Centre in the Industrial Estate at Samalkot.

102. The goods manufactured here are supplied to towns far and wide. The production range of the various varieties embraces several designs and shapes as the articles cater to the needs and tastes of people in different areas. The concern supplies to many

* At the time of revisit to the village in April 1965 the Association was not functioning at all. There were only two manufacturing units including the one under study. The quotas of coke came to be allotted individually.

dealers in Orissa, Mysore, Madras and Pondicherry States, in addition to meeting the orders received from the districts of Srikakulam, Visakhapatnam, East Godavari, West Godavari, Krishna and Kurnool and Hyderabad city.

(ii) *Sri Kisala Abbayi*

103. Sri Kisala Abbayi is the owner of a small manufacturing unit at Chitrada. He belongs to Settibaliya caste. He is son of the soil and 30 years old. He was married 10 years back and has now 3 children-2 boys and 1 girl. The two boys are at school. He himself works in the workshop which is situated at his home. An outside view of the workshop can be had in Plate 23. A few labourers are employed by him on piece rate basis. The goods manufactured here comprise only tumblers and *apukaras* (a semi-round shaped tumblers) [Plate 19]. He prepares and sells on his own account. Sri Abbayi says that his monthly income would be about Rs. 100 on average, after meeting all the expenditure relating to the workshop. The yearly expenses for the household comprise Rs. 400 on cereals, Rs. 250 on non-cereal foods, Rs. 120 on milk and curds, Rs. 60 on fuel and lighting, Rs. 170 on clothing and the rest on miscellaneous items. Sri Abbayi's workshop is a family unit and it is nothing more than one man show. He can himself manage all the stages of production without the assistance of the coolies, of course, if occasion demands, working through the stages one after another. He first learnt the craft at Sri Rama Cottage Industries, Chitrada and now has come to a status of standing on his own feet independently.

Case studies of non-practising artisans at Chitrada

(i) *Sri Kala Nagaraju*

104. Sri Kala Nagaraju of Chitrada village is a craftsman of the brass castware industry. He was engaged in the manufacture of the articles till recently. Only in March 1962 he stopped production on account of difficulties in obtaining adequate quantities of hard coke and the metals of copper and zinc. He is not a member of the Manufacturers' Association here. He used to work with his brother and wife with the assistance of 2 or 3 hired labourers as a family unit. He could do all types of the castware articles except, of course, the screw jugs. Now he is working on fields as cultivator. Thus, the scarcity of the essential raw materials needed for the industry has driven some of the versatile craftsmen out of production.

(ii) *Sri Anesuri Edukondalu*

105. Sri Anesuri Edukondalu is another craftsman who gave up this work 2 years ago due to similar difficulties. It is stated that he has started coffee hotel business at Kakinada on a very small scale.

Case study of an artisan-cum-manufacturer at Kalahasti.

106. Sri T. Venkata Muni Reddy, aged 32 years and belonging to Vanniya Reddy caste had learnt the craft from his father and in the now defunct Sri Kuncham Subba Reddy factory. He is now the proprietor of M/s. Maheswara Metal Works, Kalahasti. Educated only upto V class, he has risen from the position of a mere artisan to the status of the owner of a workshop now employing 36 workers. There are in his family 9 members, namely, his wife, who hails from the same taluk from a farmer's stock, one son, uncle i.e., father's elder brother, three brothers, and two sisters-in-law besides himself. Sri T. Venkata Muni Reddy desires to educate his son, who is only 7 years old and is presently in the primary class, and to put him in a government job. Two of his brothers are engaged in the same industry. One of his brothers Shri T. Munirathnam Reddy works in the workshop and is paid Rs. 100 per mensem. Another of his brothers, Shri T. Ranga Reddy who is educated upto S.S.L.C. looks after the accounts in the workshop and is also paid Rs. 100 per mensem. Sri T. Muniswamy, another brother, looks after cultivation.

107. At M/s. Maheswara Metal Works many varieties of articles are produced, the most commonly manufactured being *lotalu* (glasses or tumblers) *gundu chembulu* (round *chembus*) and *marachembulu* (screw jars). The articles are almost always manufactured against orders. It is stated that the quantity of articles produced out of one maund of the metal varies according to the size and design of the articles. The number of glasses which can be produced from a maund of metal is given below :

<i>Sappa lota</i>	65, 55, 45, 32
Ice glass	60
<i>Gundu chembu</i>	50, 25, 16, 12, 10

The customers are the local merchants and merchants from Tirumalai and Tirupati.

108. All the workers with the exception of one are males in the workshop. There is one woman



Plate 23. A view of the workshop of a private manufacturer at Chitrada village.

worker. The workers in this workshop know the technique of all operations. It is said that the workers are changed from one branch of work to another to enable them to be acquainted with all the operations so that dearth of hands is not felt in any stage of production.

109. The working hours of the workshop are from 8 a.m., to 12-30 p.m., and again from 1 p.m., to 5 p.m. The length and breadth of the workshop are 150' x 20'. All the sections excepting the turning section are located in this building. The turning section is located in another building which is at a distance of 100 yards from the main workshop. The wage rate ranges from Rs. 1-50 to Rs. 2-87 P. per individual. The workers in moulding section are paid at the rate of 0-03 P. per each mould prepared.

110. The materials used in the workshop for the manufacture of the brassware are gunmetal and lead. The daily expenditure on the workshop comes to Rs. 35 which includes Rs. 25 towards wages, the rest being spent on charcoal, firewood and miscellaneous items. The turnover is 3 to 4 maunds of finished goods per day.

111. The monthly net income of Rs. 450 of Sri T. Venkata Muni Reddy is spent on the following items: Rs. 200 on cereal and non-cereal foods; Rs. 50 on such items as milk, coffee, curds etc; Rs. 20 on fuel and lighting; Rs. 30 on clothing; Rs. 40 on travelling; Rs. 15 on recreation; Rs. 5 on education; Rs. 50 towards interest on and part payment of principal amount of the loan borrowed by him; Rs. 10 on improving his land of about 2 to 3 acres and Rs. 30 on miscellaneous items. He states that all persons engaged in the industry can have a comfortable living with the income out of this industry.

Case study of a craftsman working at Kalahasti

112. Sri Kakarapalli Surya Rao, son of K. Surya Rao is a native of Chitrada, Pithapuram Taluk,

East Godavari District. He migrated to this place some time back along with 9 others on the specific request of the proprietor of Sri Narayana Metal Factory, Panagal. It is stated that the proprietor of the factory had agreed to pay wages according to the quantum of production by the workers. For 90 *chembus* produced three workers get Rs. 12. The three workers can normally produce 90 *chembus* in a day. So each worker gets Rs. 4 per day. But it is stated that at Chitrada the workers were paid a fixed rate of Rs. 2-50 P. per day irrespective of the number of articles produced.

113. The craft technique adopted by this worker is different from that in practice at Kalahasti. By Chitrada process an article can be produced in 4 hours whereas by Kalahasti method it takes a week to produce an article.

114. The worker belongs to Settibaliya community of East Godavari District and has studied upto 4th class. He is not a traditional artisan. His father was a Village Munsiff. He alone has taken to this industry. He had learnt this craft and also aluminium casting from one Sri Samu Veeraswamy of Draksharama town of East Godavari District.

115. The average net income of this worker is given out to be Rs. 150 per month. He is the only prop for his family of three members consisting of himself, wife and mother-in-law. The expenditure on the various items of household are as follows: Rs. 50 on cereal and non-cereal foods; Rs. 10 on such items as milk, coffee, etc; Rs. 10 on fuel and lighting; Rs. 15 on house rent; Rs. 20 on clothing; Rs. 10 on travelling; Rs. 5 on going to pictures, etc., and Rs. 15 on miscellaneous items. He saves about Rs. 15 per month. He states that though it will not be possible for the workers engaged in the industry to amass wealth, still they can expect wages that would be adequate to give them a comfortable living.

(iii) BRASS AND BRONZE INDUSTRY B—BRONZE ICONS MAKING

SECTION I

INTRODUCTION

To instal images for the purpose of private and public worship is a custom that is coming down from the hoary past in India where the practice of worshipping Gods or Goddesses in 'form' is deep rooted. There is a common saying that a person should not dwell in a village that has no money-lender, doctor, perennial stream and temple. This only shows the great importance attached to the temples and the worship of the images of Gods and Goddesses in those temples. Based upon the mode of worship viz., daily worship, ceremonial worship, worship on the occasion of processions, decorations etc., the images of worship are divided into such three categories as *chala* (moveable), *achala* (immoveable) and *chalachala* (moveable and immoveable). The images made of metal are moveable images which are easily portable. These moveable images are called *kautuka beras*, *utsava beras*, *bali beras* and *snapana beras*. Whereas the *baliberas* and *snapana beras* are meant for offering daily services, the *utsava beras* are meant for being taken out in procession on festive occasions and the *kautuka beras* for *archana*. Metal is used for casting *bali*, *snapana* and *utsava* images. This practice of taking out images in procession and performing ceremonies like *kalyana mahotsavam*, etc., has necessitated casting of images. It may thus be said that the

"fashioning of metal images arose from the desire of the devotee to take out the representations of his deities in procession. The stone carved deities being heavy and unwieldy could only be worshipped in the shrine. But the metal images, the replicas of the original in the sanctuary – *utsava murtis* – could easily be carried in processions on festive days, and so allay the religious hunger of even those who longed to see their God, but on account of the rigours of religion could not approach shrine."¹

"In regard to the bronze images, it is believed by some that India, could not have known the *cire perdue* method of making metal images earlier than about the tenth century A. D. and that India must have therefore borrowed it from Europe."²

2. The recent findings of a metallic image at Mahenjodaro and Harappa proves beyond doubt that the art of metal casting is an old one in India

and is indigenous. This art is not unknown to the craftsmen of Andhra Pradesh. Sri O. C. Gangooly, in his monumental work *South Indian Bronzes* observes :

"We find from the metal images of Buddha discovered at Amaravathi and other places that the art of the bronze sculptor was practised throughout the Buddhist period and it must have been in existence during the earlier Hindu form of worship which prevailed in various parts of India before the advent of Buddhism."³

This art seems to have flourished in Andhra Pradesh during the Vijayanagar period. Sewell, author of *A Forgotten Empire* makes a reference to a bronze temple in the account of Abdur Razzak, the Persian ambassador to Deva Raya II (1420-43) of Vijayanagar. Abdur Razzak states that he saw 'a small but wonderful temple made of bronze' in the course of his journey from Mangalore to Vijayanagar. Whatever may be the veracity of this statement, the metal portraits of Krishna Deva Raya and his two queens which are now on Tirumalai Hills are evidence to the existence of the art of casting images. The Kings of Vijayanagar bestowed lavish endowments to the temples at Tirupati and Tirumalai. They had renovated the temples.

3. Many families of image-makers and bronze casters might have migrated from Vijayanagar during the time of renovation of the temples at Tirupati and Tirumalai. In the vicinity of Tirumalai Hills lies Perumallapalle, a village in Chandragiri Taluk, Chittoor District, which is just four miles away from Tirupati, where there are still a few families of bronze casters. Puthalapattu-Naidupeta road runs through the village. There are 14 families practising this craft. They claim that their ancestors had migrated to this village at the time of Vijayanagar Kings. One of the reasons for their settling in this village appears to have been the availability of the clay in abundance required for moulding the images before casting. It may also have been due to the fact that the later Vijayanagar Kings who made Chandragiri their abode, must have patronized these craftsmen. Further, the ready

¹ Shanthi Swarup, *The Arts and Crafts of India and Pakistan*, p. 42.

² T. A. Gopinath Rao, *Elements of Hindu Iconography*, Vol. I, Part I, pp. 17-21.

³ O. C. Gangooly, *South Indian Bronzes*, p. 52.

market at the great pilgrimage centres, Tirupati, Tirumalai and Kalahasti for the images produced might have induced the craftsmen to settle down at Perumallapalle.

4. The families gradually spread over the near-by villages also. At the village Dornakambala which is at a distance of 4 miles from Perumallapalle there are 10 families of workers and at Dukkagamudram

(2 miles) 2 families are engaged in this craft. Most of the craftsmen work at their respective houses with their own tools and raw materials. The finished articles are sold in the market. Excepting for the few workers who sit at the premises of the co-operative society, which affords facilities as a common workshop, there are no units which can be termed as established workshops for the manufacture of these icons.

5. Bronze has been described as *panchaloha*, meaning thereby the amalgam of the five metals—copper, silver, gold, brass and white lead. Of these, copper is the main raw material. The use of gold and silver is almost given up now-a-days. Some of the craftsmen use 10 parts of copper, $\frac{1}{2}$ part of brass and $\frac{1}{4}$ part of white lead.

6. According to the craftsmen at Perumallapalle, the following raw materials are required for preparing a bronze icon :

- (i) Copper (iii) Lead
- (ii) Zinc (iv) Brass

Wax and charcoal are the other two items required in the preparation of a bronze icon. It is peculiar that besides copper and zinc, brass also which itself is an alloy of copper and zinc, is considered as one of the metals required to get the alloy bronze.

7. The raw materials differ according to the size of the images to be produced. For images of larger sizes, say of 1 to 2 feet height, the following is the proportion of raw materials.

SECTION II

RAW MATERIALS

(i) Copper	...	1 Viss (1.4 Kg.)
(ii) Brass	...	1 Seer (0.93 Kg.)
(iii) Lead	...	3 Tolas (35 gr.)
(iv) Zinc	...	3 Tolas (35 gr.)

For small images of 1 to 3 inches size, copper (two parts) and zinc (one part) are used. As the two metals copper and zinc are in short supply, they are allotted to the Co-operative Society by the Industries Department.

8. The prices of raw materials differ from time to time. The cost of copper is about Rs. 4 per Kg., if it is got through the society at controlled rate. In the open market, copper is usually bought by the workers at Rs. 7.50 per Kg. The prices of other materials are given below :

(i) Lead	...	Rs. 1.50 per Kg.
(ii) Brass	...	Rs. 5.50 per Kg.
(iii) Zinc	...	Rs. 2.00 per Kg.
(iv) Wax	...	Rs. 5.75 per Kg.
(v) Charcoal	...	Rs. 6.00 per 100 Kgs.
(vi) Clay	is obtained free.	

SECTION III

TOOLS AND IMPLEMENTS

9. The various tools and implements used in the production of bronze icons are listed out hereunder :

- (1) Hammers (ஹமர்): These would be of different sizes (Plate 1-B)
- (2) Chisels (செய்க்கை): There are different varieties of chisels which are used for carving out the large number of ornaments and weapons which adorn the images (Plate 2). They are :
 - (i) Tamarapogara: To cut round holes on the base (தாமரப்பொகரா) of the image (Plate 2-A)
 - (ii) Summapogara: To inlay stars and dots (Plate 2-B)
 - (iii) Koulupogara: To carve out garlands, fine dress, etc. (Plate 2-C)
 - (iv) Gubbogara: To carve out the breasts and mamillas (Plate 2 D 1 to 3)
 - (v) Rekhapogara: Used to cut deep lines (Plate 2 G)
 - (vi) Dattepogara: To smoothen the surfaces (Plate 2-H)
 - (vii) Vathipogara: To draw small lines on an image (Plate 2-J)
 - (viii) Pedupogara: To carve out small squares (Plate 2 K)
 - (ix) Valupogara: To carve out eyes, eye-brows, eye-lids etc. (Plate 2-L)
 - (x) Gorupogara: Used in small places of the images (Plate 2-M)

- (3) Chivvelega or Chivvepogara } A tool used for polishing (Plate 1-A)
- (4) Burmas for poking holes
- (5) Files (பைல்) of different gauges
- (6) Pattukaras for holding hot things, etc.
- (7) Crucibles of graphite for melting metals in the furnace (Plate 4)
- (8) Blower to fan the furnace (Plate 4)

10. Except the files, blower and crucibles, all the other tools listed above are got manufactured locally. Files are purchased at Tirupati whereas crucibles are got from Rajahmundry. Files have to be replaced frequently as they go blunt, when used for more than a week continuously. The cost of chisels ranges from 50 P. to Re. 1 each.

11. All the tools used are of different sizes according to the part of the icon at which they are applied for work. There are 5 to 6 sizes of hammers, small, medium, big, bigger etc., which are used according to the needs of the stress to be applied at each time. There are various sizes of pogaras in each category listed in para 9 above. The smaller pogaras are necessary for smaller icons, bigger ones for bigger icons. Also smaller pogaras have to be applied for chiselling at narrow places, whereas bigger tools can be manipulated at wider places of the icons. Similar is the case with the other tools also. Almost all the tools are made by the workers themselves. Only files are purchased outside besides, of course, crucibles. All pogaras are made out of old and worn out files as also legas which are tools with sharp edges used for polishing finished icons.

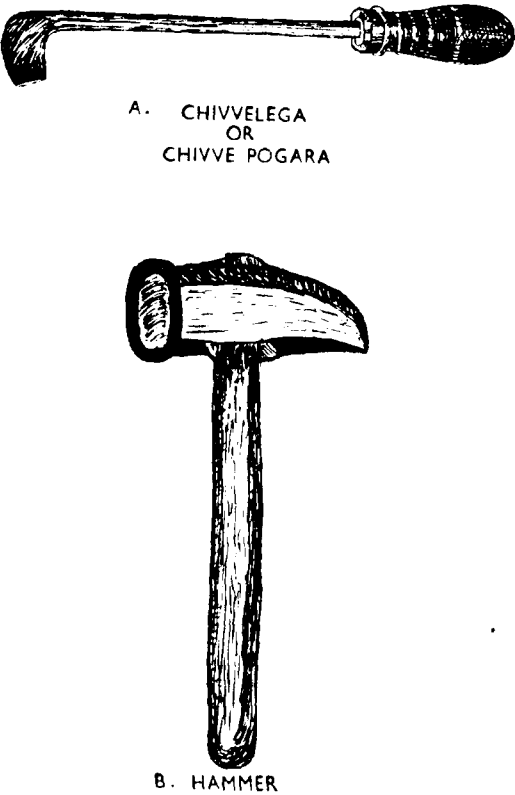


Plate 1. Chivvepogara and hammer.

SECTION IV

TECHNIQUE OF PRODUCTION

At Perumallapalle two different processes of production of bronze icons are practised. They are (1) *cire perdue* casting or lost-wax process known in Telugu as ‘శిలకం’ and (2) simple casting.

A. Cire perdue casting process

13. The different stages of this process are (i) modelling, (ii) moulding, (iii) casting, (iv) filing, (v) *pogarapani* (chiselling) and (vi) polishing.

Moulding

14. A wax model of the image to be cast has first to be prepared. This is known as ‘*Madhuchishta Bidhanam*’ technically. This wax model has to be prepared according to the rules and canons of iconography given in *Brahmiya*, *Saraswatiya*, *Kasyapiya* and also in *Manasara* Sanskrit texts. For preparing the image, the body of the image should be divided into so many *talas* or heads. The face is taken as the unit or the common measure and is technically known as *tala*, which is the measure of the face from the hair on the forehead to the bottom of the chin. The *tala* being thus deduced from the length of the face, is not a fixed measurement like inches but is a variable unit, being proportionate to the total height prescribed for a particular figure. In *Sukranitisara* is laid down that an average human male figure is to be eight times the face (*i. e.*, *ashta tala*), an average human female figure to be 7 times the face (*i. e.*, *sapta tala*) and an average infant figure to be five times the face (*i. e.*, *pancha tala*), the face being represented by one *tala* as said above. The measures higher than *ashta tala* are reserved for the images of Gods, demons, *rakshasas* and other super human beings. Both the *nava tala* (ninth measure) and the *dasa tala* (tenth measure) are divided into Uttama (best), Madhyama (medium) and Adhama (lowest).

15. Following are *talas* or *talam*s and the divisions thereof for the various images :

<i>Tala or Talam</i> (1)	<i>Divisions otherwise known as Dehangulas</i> (2)
10 Dasa-tala	... 124 Uttama 120 Madhyama 116 Adhama

—Contd.

<i>Tala or Talam</i> (1)	<i>Divisions otherwise known as Dehangulas</i> (2)
9 Nava-tala	... 112 Uttama 108 Madhyama 104 Adhama
8 Ashtama-tala	... 100 Uttama 96 Madhyama 92 Adhama
7 Saptama-tala	... 88 Uttama 84 Madhyama 80 Adhama
6 Shat-tala	... 76 Uttama 72 Madhyama 68 Adhama
5 Pancha-tala	... 64 Uttama 60 Madhyama 56 Adhama
4 Chatus-tala	... 52 Uttama 48 Madhyama 44 Adhama
3 Tri-tala	... 40 Uttama 36 Madhyama 32 Adhama

16. The different *tala* measurements to be adopted for some of the images are given below :

“The *Uttama-dasa-tala* (of 124 *dehangulas*) is prescribed for the images of the principal deities Brahma, Vishnu and Siva. The *Madhyama-dasa-tala* (of 120 *dehangulas*) for those of Sridevi, Bhumidevi, Uma, Sarasvati, Durga, Sapta-matrikas, Usha and Jyeshtha. The *Adhama-dasa-tala* (of 116 *dehangulas*) for Indra and the other Lokapalas, for Chandra and Surya, for the twelve Adityas, the eleven Rudras, the eight Vasus, the two Asvini-devatas, for Bhrgu and Markandeya, for Garuda, Sesha...

The *Navarddha-tala* for Kubera, for the nine *grahas* (planets) and certain other celestial objects.

The *Uttama-nava-tala* for Daityesa, Yekshesa, Uragesa, Siddhas, Gandharvas and Charanas, Vidyesa and for the Ashtamurthis of Siva. *Satryangula-nava-tala* for such persons as are equal to the gods in power, wisdom, sanctity etc. *Nava-tala* for *rakshasas*, Asuras, Yakshas, Apsarasas, Ashtamurtis and Marudganas;

- Ashta-tala for men
- Sapta-tala for Vetalas and Pretas
- Shat-tala for Pretas
- Pancha-tala for Kubjas or deformed persons and for Vigneswara

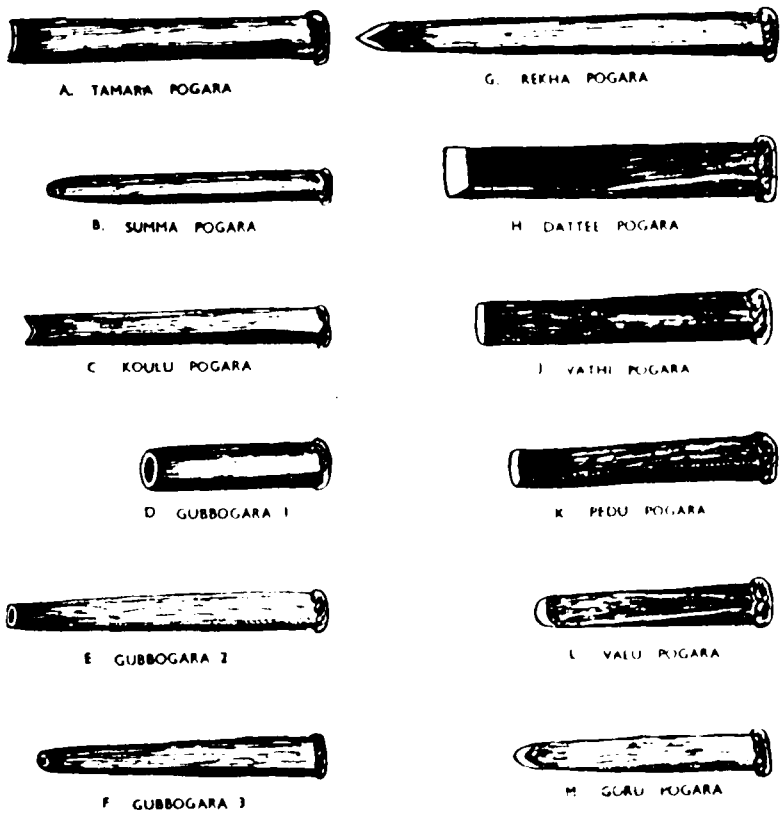


Plate 2. Chisels

Chatus-tala for Vamanas or dwarfs and for children
 Tri-tala for Bhutas and Kinnaras
 Dvi-tala for Kushmandas
 Eka-tala for Kabandhas¹

17. The skill of the craftsman lies in the preparation of the wax model. It is the wax model that determines the basic shape of the bronze icon to be turned out finally. The process of preparing wax model is roughly as follows: Bee wax is purchased from bazaar. Fine charcoal powder (approximately in proportion of 1/4th by volume) is mixed with the wax after slightly heating it. Charcoal powder makes the wax turn black, makes it more amiable for delineation of curves and figurines and attain subtlety, so that it can be cut easily into small pieces or chopped of wherever necessary. The wax thus prepared is made into the form of long rods and kept for use. The skilled worker who is thorough with making wax models (there are only 3 or 4 such workers at Perumallapalle) sits before a charcoal furnace. He keeps before him a pencil drawing of the figure to be made. A rod of measured length of the wax is taken and with the dexterous hand work it is turned into the shape of an idol as per the drawing before him with head, trunk and legs. A boy acts as assistant to the worker. He has to blow the furnace with a hand rotating blower and also to supply to the worker wax pieces heated suitably. The worker exposes the wax rod (which is held in left hand while the right hand works on it) to heat now and then, so as to keep it smooth and amiable. The shape of the figure is wrought slowly with hand keeping in view the drawing. And imagination contributes not a little in determining the size and thickness of the various limbs etc., of the figure. Hands, ears, feet, weapons, etc., of the figure are made separately with wax pieces and attached to it. The worker always uses heated wax with wet fingers dipped in water now and then. Besides the fingers and nails of the worker, wooden implements like *pogaras* and hammers are used to work out the shapes and curves of the different parts of the body, ornaments, weapons etc., of the figures. The same types of *pogaras* as are used for chiselling the metal figures are applied for preparing the wax models. Only difference is wooden tools are used for wax work. Of course, it is difficult to prepare a wax model with all intricate curves and designs depicting ornaments etc., on the body of a figure, nor is it necessary to achieve that perfection. Emphasis is on cutting outline of the proposed metal figure,

with as near a clear shape as possible. (Plate 3 shows a skilled worker preparing a wax model. The boy sitting opposite is handing a heated wax slab for use to make additional portions of the body).

18. The next stage is coating the wax model with a paste of clay otherwise called *puttamatti* or *jedumatti* (ಪುಟ್ಟಮಣ್ಣು or ಜೆಡುಮಣ್ಣು). The *jedumatti* is light yellowish in colour. It is available free near the Sugarcane Research Farm in the village. The clay is gathered, cleared of stones, etc., and kneaded into fine powder. Small pieces of old gunny bag (jute fibre) are added to the clay before it is watered and made into a thick paste. The paste is soaked with water for a night and is churned with hammer. The clay paste is smeared to the wax model with a thickness of about 1/4". A little castor oil is smeared to the model beforehand.

19. It has to be mentioned here that wax models are prepared only for complicated models like Nataraja, Sri Devi etc. For ordinary figures to be made the metallic model would serve the purpose. For small icons, for icons with less decorative features, for bases or *kamalapeetams* and the like only metal models are employed. This would save lot of time and labour. A model of metal can be used again and again for manufacturing similar icons on a large scale. The workers go in for wax model only when the icon to be made is of a complicated shape, is of rare specimen or size or when only one of its kind has to be made on a special order (e.g., an icon to be installed for worship in a temple with specific dimensions and features). For all routine things (stereo-typed) to be sold in everyday market, metal models are enough; and the process reduces itself to that of preparation of a brass vessel, a *chembu* or a *lota*, as practised at Kalahasti and observed in other sections. Only difference is that no hollow space need be left inside the icon (it is solid with metal) whereas empty space has to be created in a vessel or *chembu* with the aid of an inner replica of the clay mould as described elsewhere. Less capable workers always depend upon metal models only for their work.

20. Returning to the continuation of the process, after coating the wax model or metal model of the figure to be made with the paste of clay upto a thickness of 1/4", it is dried in the sun for 4 or 5 hours. If it is a metal model that is inside, the clay surface is neatly cut into two halves vertically and



Plate 3. Wax models of the icons are made.

¹ T. A. Gopinatha Rao, *Elements of Hindu Iconography*, Vol. I, Part II - Appendix B.

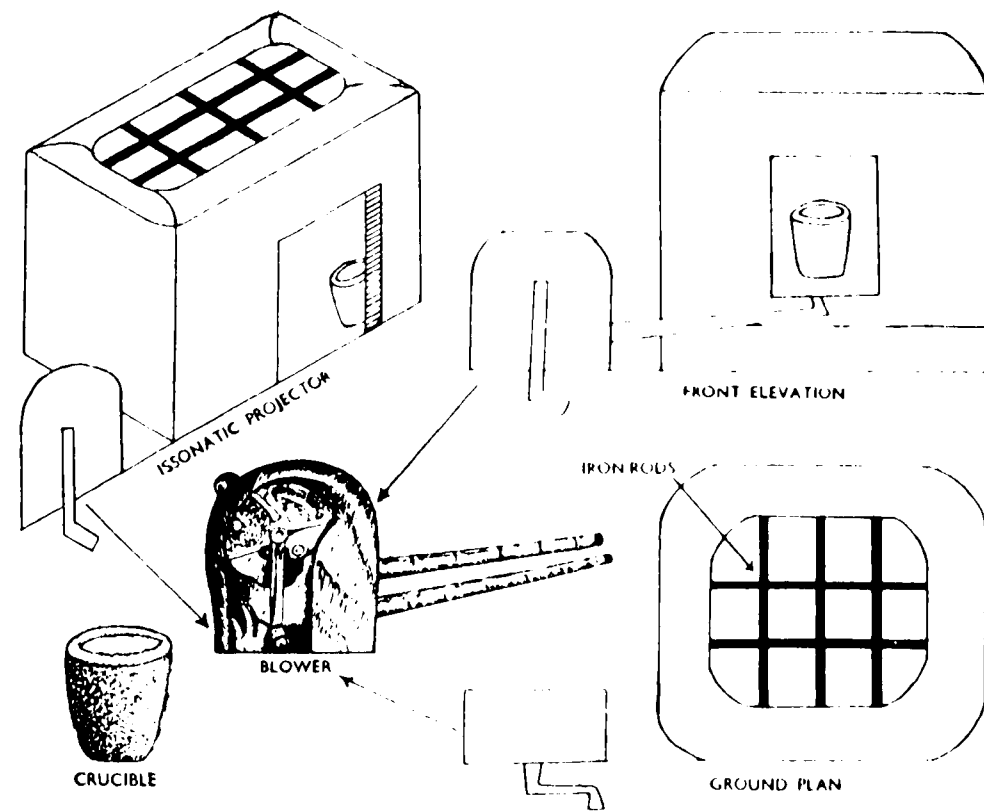


Plate 4. Layout sketches of kolimi.

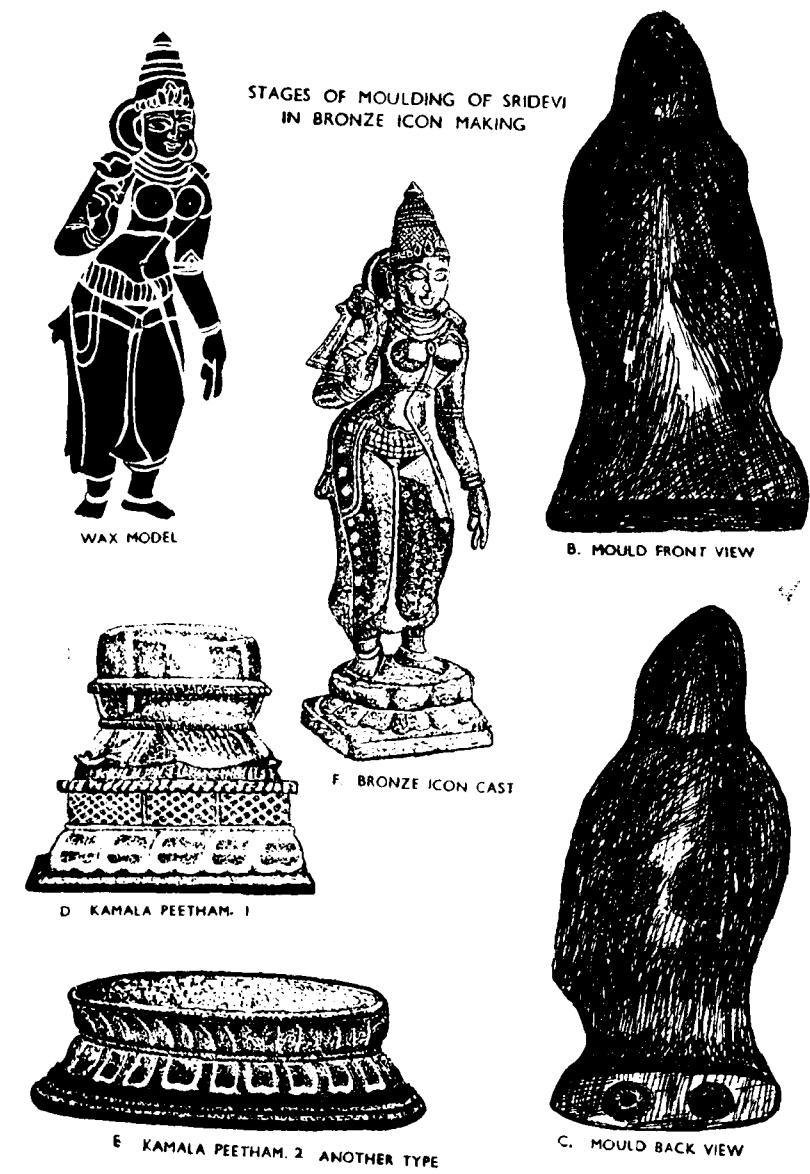


Plate 5. Stages of moulding of Sridevi in bronze icon making.

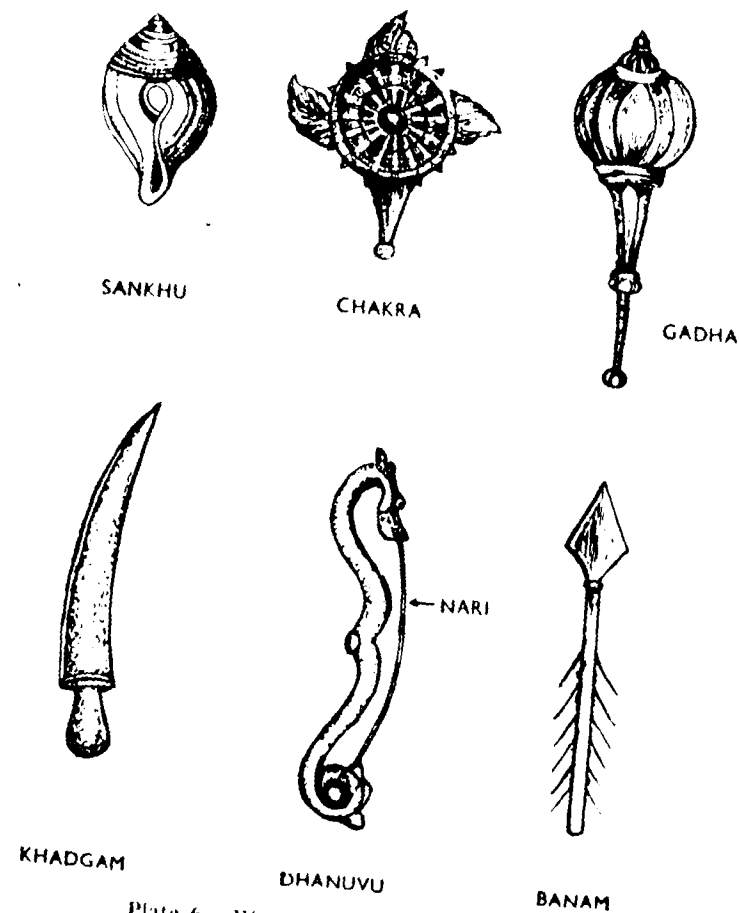


Plate 6. Weapons of Gods and Goddesses.

loosely joined together before drying in the sun. Two round holes are made at the bottom of the clay mould before it is dried which serve as passage for the metal to be poured into. After the clay mould dries, the metal model is removed out slowly opening the former along the cut already inflicted and the two halves are joined together again and are tied round with a thin wire. In the case of moulds with a wax model inside, the model is tied securely with a thin wire and is placed in an inclined position on a pan on the furnace with the holes at the bottom downwards so that only the upper portion of the mould is heated gradually. The wax slowly melts and collects down through the holes in a water bowl kept underneath. The same wax can be used again for preparing a new model. After all the wax comes out vacating the space occupied by the model, another coating of clay paste is applied again upto $\frac{1}{4}$ " thickness over the mould and the whole object is allowed to dry in the sun. Next stage is casting the molten metal in the mould to bring out the article of the required shape which will later have to be carved finely.

Casting

21. A special furnace is used for melting the metal at high temperature. A blower in the form of a small rotating wheel is used for flaming the furnace (Plate 4). The furnace is so devised that the mould and the metal in graphite crucible are heated simultaneously. The mould is placed on two iron rods and the crucible below the rods. The flame from underneath touches both the crucible and the mould. When the crucible is sufficiently heated, the required quantities of copper, lead, zinc and tin in the approximate proportions of 1 viss of copper (1.4 Kg.), 6 tolas of lead, 9 tolas of zinc and 6 tolas of tin are put into the crucible. First copper is put in the crucible and heated. When it is red hot, lead and zinc are added. Tin is lastly put before pouring out the metal. This will make the metal more fluid for easy flow. The heating is done to a very high degree. It takes about 3 hours for the metal to boil in the crucible and reach the point of readiness. When the metal is molten (meanwhile the mould becomes red hot) and is still boiling on the furnace, it is lifted with a small crucible with the aid of iron pincers. The red hot mould is also removed and placed on the ground with the openings upwards. The metal taken out with the small crucible is poured into the mould till the holes are filled with it. Metal

is poured through one hole till the mould is filled up i.e., till it reaches the brim of the second hole indicating that all the hollow space inside is full. The pouring has to be done with proper care, since if the mould is spoiled during the process, all the work of artisan is lost and he has to undertake the whole work again. The molten metal poured settles down and takes the shape of the wax replica which was put originally inside the mould and subsequently drained off; the hollow space vacated by the replica would exactly be in the shape of it to be occupied by the metal. The mould with the molten metal inside will be allowed to cool down for about one hour. The wires wrapped to the mould will afterwards be cut and the mould is put in water and the cast image comes out of the womb of the mould. The clay once used for the mould becomes useless afterwards and is discarded.

Filing

22. The next stage consists in setting right the defects that have occurred in the casting process. First chopping is done and then files of different gauges are used to clear out uneven surfaces resulted on account of uneven spreading of the molten metal.

Pogarapani

23. After the work of filing, the ornamentation work has to be taken up using the various chisels mentioned elsewhere. In the words of Mrs. Ruth Reeves, the sculptor-cum-metalsmith becomes an expert jewellery engraver as well. Though it is possible to represent some such weapons (Plate 6) as *sankhu*, *chakra*, *gada*, *khadga*, *dhanus*, *bana*, etc., held by the various Gods, it may not be possible to represent certain other weapons, ornaments and costumes of Gods and Goddesses in the wax model. The craftsman has to work with his chisels and he must be thorough with the various ornaments, and costumes worn by the various Gods. A very large number of ornaments are mentioned as useful for adorning the images of Gods. It may not be out of place to mention about some of them here. *Hara* (हर) means a necklace. *Keyura* is a flat ornament worn on the arm just over the biceps muscle; the *kankana* or bracelet is worn at the wrist. *Kundalas* are the ear ornaments. It will take one or two months to complete this process depending upon the skill and technical capacity of the craftsman concerned. The craftsman completes the whole

work on the image except fixing up the eyes. Before polishing there is yet one process known as *santana* (సంతన) i.e., joining or rivetting. That is, the base and the image are fitted into one another. It is the process of fixing the icon in the middle position of the base without inclination rivetting with a hammer. A separate mould is prepared for the lotus base or pedestal (*kamalapitam*) [Plate 5] and it is cast separately as the image. The *santana* is done so nicely that the joint will not at all be visible, giving an impression that both the image and the base were cast at the same time.

Polishing

24. Polishing is done with the aid of *chivrepagara*. The process is, in essence, scrubbing the metallic surface with a sharp steel edge made of files to smoothen and bring out shining. Mirror-like smoothness is obtained by rubbing the image with seashore sand. The seashore sand (also called *merugu isuka* మెరుగు ఇసుక) is said to be available at a particular spot on Rayapuram beach in Madras. It is also sold in market at Rs. 2 for a viss (1.4 Kgs). Some sand is taken on tips of fingers and rubbed against the surface of icon.

25. After the polishing work is over the ceremony of fixing the eyes *nethrotsavam* (నేత్రోత్సవం) is performed and the eyes are fixed to the image. A popular saying is सर्वोन्द्रियाणां नयनं प्रधानं (సర్వోంద్రియణాం నయనం ప్రధానం). Of all the sense organs, eyes are of the utmost importance to the human beings. So also they are for the images, it takes a lot of skill of the worker. The eyes reveal the nature of the image i.e., whether *radramurthi* or *prasanna-murthi*. That is why the craftsman chooses to fix the eyes on an auspicious day and after taking bath and praying to God. It is said that Mondays, Wednesdays and Sundays, with such *thidhis* as *Vidiva*, *Tadiya*, *Panchami*, *Sapthami*, *Dasami*, *Ekadasi* or *Triodasi* are auspicious for fixing up the eyes and the ceremony is performed in temples. The *nethrotsavam* (నేత్రోత్సవం) is not done for all icons but only to images installed in temples. The icons sold

in market are depicted to be with closed eyes. It is said to be against the canons of iconography to fix eyes for each and every icon made by a worker. Therefore no eyes are usually fixed for the articles produced at Perumallapalle, except only for those installed in temples on special orders.

B. Simple casting

26. This process is the same as the *cire perdue* casting except that this method differs in moulding. Here also the wax model of the required image is prepared according to the rules and canons of iconography. After the wax model is completed, it would be smeared with the paste of light yellowish clay (పసుపు) which is prepared as elsewhere noted. Before applying the clay paste to the wax model, the latter is smeared very lightly with castor oil. This is done so that the wax model can easily be removed when the mould is cut into two halves. After giving two coatings of this paste as in the case of previous process, the mould is allowed to dry. When it is dried half way, the mould is cut oblong into two halves, along the edges. Care should be taken to see that the wax model inside the clay mould is not spoilt while cutting. There are now two pieces of the clay mould when the wax model is removed. These two pieces are joined together very carefully and smeared again with the clay paste, this time reinforced by wrapping the mould with a fine thin wire. The mould is then given a lavish coating of the paste. A small round hole will now be made at the bottom of the mould. This opening serves as ingress for the molten metal. The molten metal occupies the hollow portion of the mould and takes the shape of the image created by the negative impression of the wax model. The advantage in this method of moulding is that any number of images of the wax model can be cast. For preparing small images called *enikalu* (ఎనికలు) which are only 1" to 2" in size, the craftsmen use permanent metal models instead of the wax models.

27. The other stages of production as mentioned under 'lost wax' casting are adopted here too after the mould is ready.

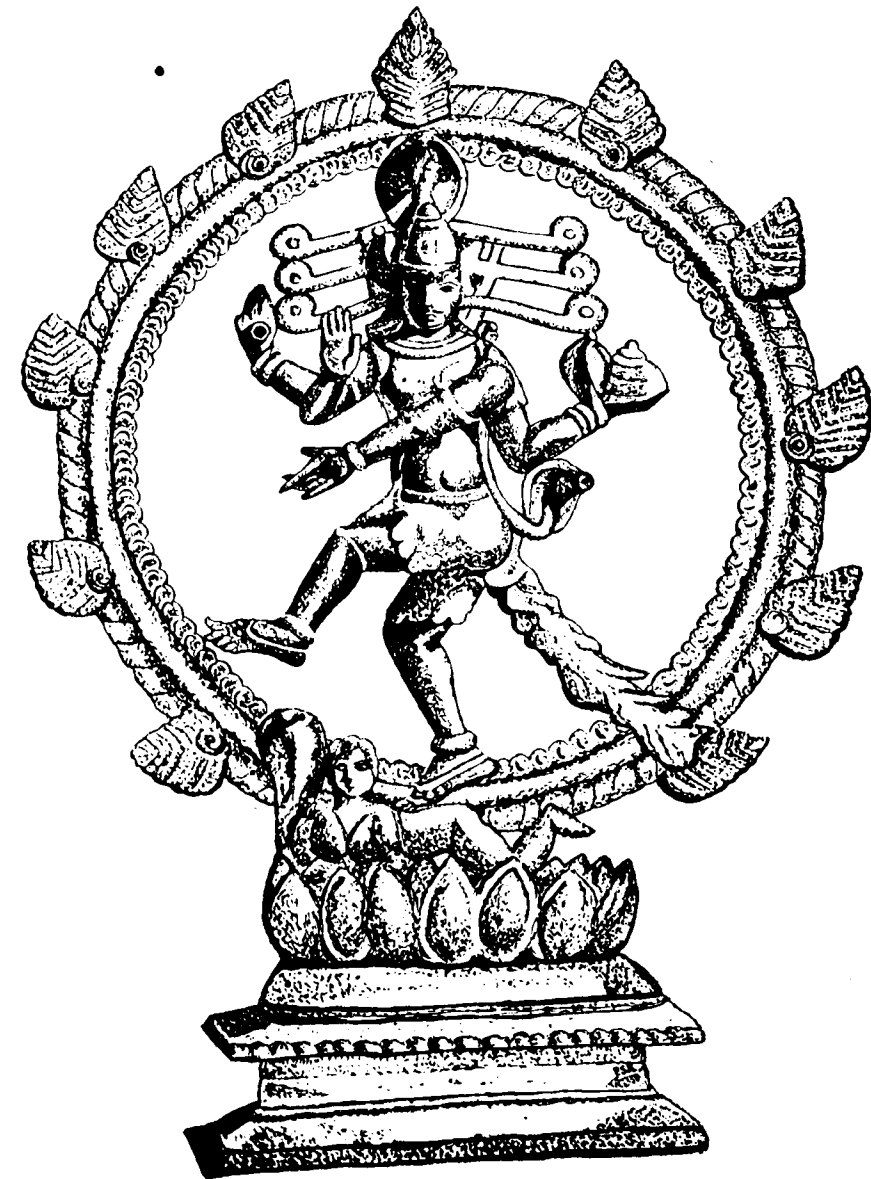


Plate 7. Nataraja.



Plate 7A. A celebrated bronze from Perumallapalle.

—Courtesy: Sri S. R. K. Rao, Deputy Director of Information and Public Relations, Hyderabad.

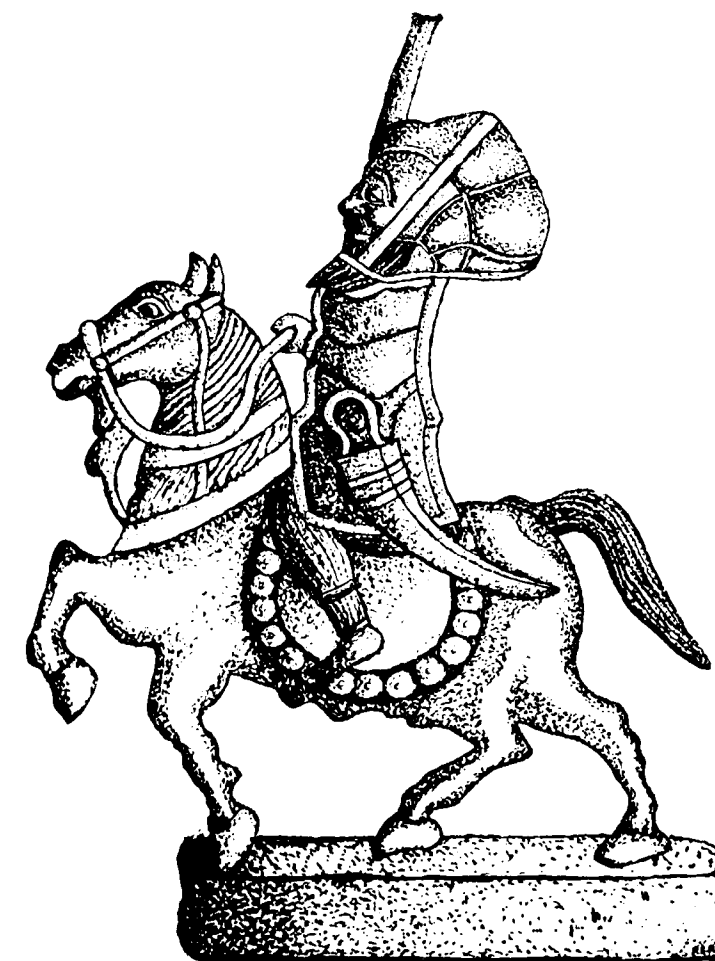


Plate 8. A sepoy riding a horse.

SECTION V

IMAGES AND DESIGNS

28. As many varieties of bronze icons of Gods and Goddesses, etc., as there are in the Hindu pantheon can be manufactured. Though it is not possible to enumerate all of them in this brief monograph, some of the images that are produced at Perumallapalle are given below :

(1) All the twenty-four *murtis* of God Vishnu. They are Kesava, Narayana, Madhava, Govinda, Vishnu, Madhusudana, Trivikrama, Vamana, Sri-dhara, Hrishikesa, Padmanabha, Damodara, Sankarshana, Vasudeva, Pradyumna, Aniruddha, Purushothama, Adhokshaja, Narasimha, Achyuta, Janardana, Upendra, Hari and Sri Krishna.

(2) All *murtis* of Lord Siva.

(3) All images of Vigneswara—the elephant-headed - God—Bala - Ganapathi, Vira - Vigneswara, Sakti - Ganesha, Harimbe, Prasanna-Ganapathi, Dhvaja-Ganapathi, Unmaktauchchista-Ganapathi, Bhuvanisa-Ganapathi, Nritta-Ganapathi, Haridra-Ganapathi, Bhalachandra, Surpakarna-Ekadanta.

(4) Images of Goddess Lakshmi.

(5) Images of Goddess Parvathi. There are several forms of this Goddess e. g., Gouri, Uma, Sankari, Annapurna, Kali.

(6) Images of Rama, Lakshmana, Sita and Hanuman.

The craftsmen also produce the various images of Gods and Goddesses in sizes of one to two inches; these are called *ennikalu* (ఎన్నికలు).

29. Besides producing the images of Gods (Plate 7) and Goddesses, they also can cast the image following any given photo. The image shown in Plate 8 is cast according to the photograph given by the Handicrafts Sales Emporium at Hyderabad.

30. Usually the icons are produced as per the orders received from the customers. The small images *ennikalu* (ఎన్నికలు) which range from one to two inches in size are produced in large numbers for sale. These small icons are not prepared according to the rules and canons of iconography. They are only meant for adorning homes and to serve as dolls to children. They are made according to the creative imagination of the artist.

SECTION VI

MARKETING

31. All the icons except the smaller ones are produced against orders from customers. The bigger icons produced are meant for worship in temples. As already stated elsewhere, the images meant for worship are divided into three categories *chala*, *achala* and *chalachala*. The bronze icons are meant for ceremonial worship, occasional processions, and decorations and for daily services. There is no difficulty of marketing nor is there problem of storage also, since the icons are disposed off soon after they are ready for marketing. The icons of smaller size are sold to the merchants at Tirupati, the nearest town to Perumallapalle.

32. Sales are effected through the shops of brass and bell-metalware at Tirupati, Tirumalai and Kalahasti. There are rows of shops at Tirumalai

which sell bronze icons along with the brassware. It is, however, observed that there is striking disparity in the prices of the icons sold by the Perumallapalle Society and the shop-keepers at Tirumalai. Some instances are given below :

	At Perumallapalle Rs. P.	At Tirumalai Rs. P.
(i) 12" high Rama Lakshmana set . . .	170-00	200-00
(ii) 6" high female image with both hands shaped to hold oil for lighting . . .	20-00	25-00
(iii) 2" high Vinayaka (Ganesh) . . .	3-00	6-00
(iv) 1" to 2" high small images . . .	0-30 to 0-50	0-50 to 1-00

33. There are 14 families at Perumallapalle practising the craft of bronze icons. Out of these fourteen families, members of 12 families are working in the Co-operative Society called the Perumallapalle Metalware Sculptors Cottage Industrial Co-operative Society Limited, Perumallapalle. Till 1960 there was no Co-operative Society for the artisans. They were individually executing the orders received from the customers. It is said that Sri Ananthasayanam Ayyangar, the former Speaker of Lok Sabha, who once happened to visit this village, was very much impressed with the workmanship of the bronze icon casters and suggested to the artisans to form a Co-operative Society among themselves to better their lot. The then Assistant Director of Industries and Commerce, Chittoor, Sri P. Neelakanthiah appears to have had the suggestion from Sri Ananthasayanam Ayyangar to consider the proposal for starting a Co-operative Society at Perumallapalle for the benefit of the artisans there. The proposal fructified and a Co-operative Society by the name mentioned above was registered on 22-12-1960 with the aim of improving the standard of living of the artisans and providing assured wages for their work. It started functioning from 14-2-1961, with a humble beginning of 12 members and a paid up share capital of Rs. 300 at the time of registration. There are now 25 members with a paid up share capital of Rs. 625. The members belong to Perumallapalle, Dornakambala and Dukkasmudram villages. The area of operation of the Society covers villages situated within a radius of 5 miles from Perumallapalle. All the members are ordinary members. Each share is of value Rs. 25. Any metalware sculptor worker who is over 18 years of age and residing within the area of operation of the Society can become a member. A non-metalware sculptor-worker can also become a member, but such membership shall not exceed 20% of the total strength. Now excepting the President, who is a Kamma Naidu, all the members are craftsmen and belong to Viswabrahmin community.

Financial position of the Co-operative Society

34. The maximum borrowing capacity of the Society is 8 times the paid-up share capital plus a reserve fund which comes to Rs. 5,000 only. On 2-3-1961 the Government of Andhra Pradesh in

SECTION VII

CO-OPERATIVE SOCIETY

the Industries Department sanctioned a working capital loan of Rs. 5,000 to be repaid in 5 yearly instalments, the interest being Rs. 21 per year on the borrowed amount. They have also sanctioned Rs. 2,000 for the purchase of tools and furniture, besides sanctioning the expenditure on the salaries of one clerk and a foreman.

35. The Society with the aid of a working capital loan of Rs. 5,000 and paid up share capital of Rs. 625 and also tapping some temporary deposits from its members turned out a good business during the years 1961-62 and 1962-63. The business turnover since the inception of the Society has been as noted below :—

Year	Purchase of raw material (1)	Wages paid (3)	Sale of finished goods (4)	Net loss (5)	Net profit (6)
	Rs. P.	Rs. P.	Rs. P.	Rs. P.	Rs. P.
1960-61	2,663-75	1,465-00	367-00	630-79	...
1961-62	11,662-91	5,575-00	14,181-00	...	345-92
1962-63	4,032-59	4,877-00	12,894-00	...	719-95

36. The Co-operative Society is trying to provide the members with assured wages and to extend facilities to carry on their work smoothly. Some tools were supplied to the members who work at the premises of the Society. But most of the small tools are got made by themselves by the workers out of old files. The Society supplies copper and zinc to its members. Copper is obtained on quota from the Director of Industries and Commerce. The members purchase for themselves other raw materials required for their work. The finished products weigh about 10% less than the weight of the metal used for them. The wages are paid according to the weight of the image and also on the basis of the degree of skill which the artisan brings to bear on the image produced. For an intricate and finely carved Nataraja icon of 1 foot height the wages paid are Rs. 100. For a lesser complicated work like Sri Devi Rs. 40 only are charged. On an average each worker earns Rs. 3 to 4 a day. Most of the artisans live in huts and one or two in terraced houses. The economic condition of the workers seems to be satisfactory. Some of the members carry on the work in the premises of the Society itself while

others work at their residences and deliver the finished goods at the Society. Female members of the households assist the workers in sundry jobs like clay kneading, drying the moulds, etc.

37. Though the work involved in this industry is neither hazardous nor detrimental to the health of the worker, it requires patience and involves strain to the eyes, as he has to carve out minute details on the images.

38. The management of the Society rests with the Board of Directors, consisting of 5 members elected by the General Body. The names of the present Directors are given below:—

- (1) Sri M. V. Naidu (President)
- (2) Sri K. Krishnamachari (Secretary)
- (3) Sri D. Ramachandrachari (Director)
- (4) Sri K. Venkatramachari (Director)
- (5) Sri P. Subbachari (Director)

Sarvasri K. Munirathnam, K. Changanarayachari and K. Venkataramachari, said to be very skilled craftsmen of bronze icons making at Perumallapalle, may be seen in Plate 9.

39. The problems confronting the Society are, however, not many. It is said that the Society is experiencing difficulty to find capital for purchasing the raw materials (copper and zinc) allotted to it. Perhaps the Society needs a working capital loan of Rs. 10,000 to ease the situation. Another problem for the Society is to acquire land for digging out the particular type of clay useful for making moulds. It is said that the land, where the particular type of clay known locally as *puttamatti* (పట్టమట్టి) is available, has been occupied by the Sugarcane Research Farm, Perumallapalle. The Farm authorities are objecting to the use of the earth in that site. But there seems to be no objection for the outright sale of the land to the extent required by the Society. As the Society has no finances of its own to acquire it, it has approached the Director of Industries and Commerce, Andhra Pradesh to get the land acquired free of cost from the Farm authorities. It has to be seen whether this would fructify.

40. Two craftsmen of Perumallapalle (Sri Munirathnam and Sri Veeramalli Srinivasachari) have not been members of the Society for the reason that they were not getting wages according to their skill exhibited. Sri Veeramalli Srinivasachari was once a member of the Society, but disassociated himself after some time for the reason mentioned above.

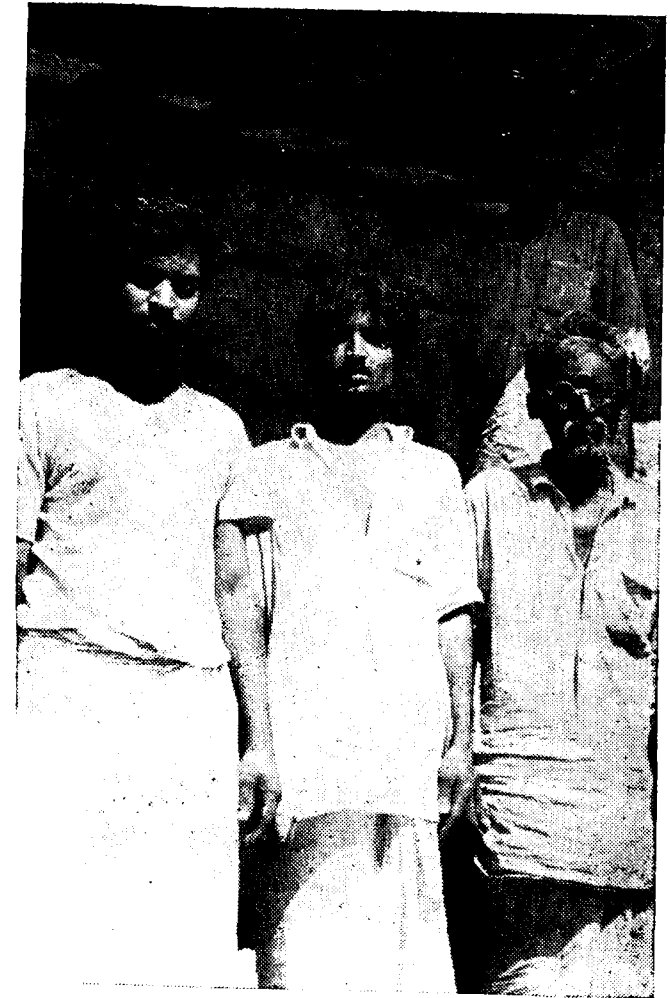


Plate 9. Three craftsmen of bronze icons.



Plate 10. A skilled craftsman at work.



Plate 11. Bronze icons made by Sri Venkata Ramachari.

SECTION VIII

CASE STUDIES

Kundavaram Venkata Ramachari

41. Sri Kundavaram Venkata Ramachari is one of the skilled workers in bronze icons making at Perumallapalle. He claims that his fore-fathers had migrated to Perumallapalle from Hampi Vijayanagar and settled down here. He belongs to Viswabrahmin community and his mother tongue is Telugu. He is purely a vegetarian and worships the deity, Kalikadevi. He would be generally addressed with the prefix 'శ్రీశైవ' and so on. He is now aged 60 years. Though bespectacled because of defective eye-sight, owing to his old age, he has still the stamina to work steadfastly. The chisel in his hand dances on the icon to the tune of the hammer. The good old bronze sculptor at work can be seen in Plate 10. He has very good mastery over the craft. He states that he can cast any image of the Gods or Goddesses belonging to the Hindu pantheon. Some of the bewitching bronze icons brought forth by the sculptor can be seen in Plate 11.

42. He is now living in a hut (30'x15') [Plate 12]. It has an open space inside. He has three sons. One of his sons is residing at Tirupati. The other two sons are residing in the same hut. But each one of them has a separate kitchen and Sri Venkata Ramachari has nothing to do with the earnings of his sons. He has to depend upon his own earnings. He gets his share of produce from the 2 acres of land commonly owned by him and his sons. The two sons may be seen in Plate 9 along with their father. Sri Ramachari's average income per month amounts to Rs. 130. The yearly expenses for the house comprise (i) Rs. 720 on cereal and non-cereal food-grains, (ii) Rs. 120 on milk and curds etc., (iii) Rs. 120 on fuel and lighting, (iv) Rs. 180 on clothing and the rest on miscellaneous items. He has to share with his sons the expenditure on the land, which comes to about Rs. 100 per year.

43. All his three sons have learnt the craft from him and they have also become very skilled craftsmen.

Veeramalli Srinivasachari

44. Silpi Veeramalli Srinivasachari of Perumallapalle is also another skilled craftsman in bronze icons making. Besides making bronze icons, he engages himself in drawing plans for the construction of houses, etc. He too claims that his fore-fathers had migrated to this village from Vijayanagar and asserts that the craft of bronze icon making has been in existence in this village since a very long time. He is a Viswabrahmin by caste and his mother tongue is Telugu. He is now 62 years old. He is strong, hale and healthy. He has been practising this craft from his childhood. Once a member of the Perumallapalle Metalware Sculptor Cottage Industrial Co-operative Society, he states that he has withdrawn from the membership of the Society as in his opinion the Society was not being managed well and as the quality of work had been deteriorating. He complains that many craftsmen make images for prayers without following the Sanskrit verses wherein the physical features of the Gods or Goddesses are prescribed. In his opinion the images should be cast according to the principles of iconography laid down in Sanskrit verses. He professes that he can cast the image of any of the Gods and Goddesses mentioned in Hindu mythology, and that he is a master in casting the image of Nataraja. He has a treasure of information on bronze icons making. He is however reluctant to give out information on details of iconography.

45. He is now residing in a hut which has a hall and a kitchen. He owns a house, but he has let it out for a school on a rent of Rs. 50 per month. The average income of this craftsman would be about Rs. 150 per month including the rent on his house. The earnings out of the bronze icons making amount to a sum of Rs. 90 per month. The expenditure on different items of household needs would be (i) Rs. 50 on cereal and non-cereal foods, (ii) Rs. 10 on drinks like milk, curds, etc., (iii) Rs. 3 on rent of the hut, (iv) Rs. 10 on clothing, (v) Rs. 5 on lighting and fuel, and (vi) Rs. 22 on other items. He thus spends about Rs. 100 a month and saves the remaining amount.



Plate 12. The house type of a craftsman.

46. He has produced the images of Lakshmi, Vigneswara and Sivalingam under the serpent-hood, etc. The cost of the images vary according to the workmanship and skill involved in the production of a particular image. It is said that most of the images are sold to the shopkeepers at Tirupati and

Tirumalai and that there is no problem for marketing. He firmly believes that this industry will thrive so long as there is faith in God among Hindus. He is of the opinion that a good craftsman can always earn a living wage always from this craft.

(iii) BRASS AND BRONZE INDUSTRY

STATISTICAL TABLES AND THEIR INTERPRETATION

INTRODUCTORY NOTE

The Statistical Tables I to VII of the Brass and bronze industry are compiled in two parts—namely, rural and urban. Forms of village schedule of industries and crafts (proforma of which both in English & Telugu is given as Annexure to this part) were sent to the Assistant Directors of Industries and Commerce of the districts in which it was known that there existed concentration of families working in the brass and bronze industry or an established industrial co-operative society for it. The Assistant Directors returned the schedules got duly filled in either by the office-bearers of the concerned co-operative society or by their departmental staff themselves. The information collected

is therefore, authentic to a large extent, though it is not complete in all respects. As some of the columns in the schedules were left blank, owing probably to the non-availability of ready particulars, or to the difficulties encountered in condensing the details known only in practical and elaborate ways, the Statistical Tables naturally reflect the scantiness of data here and there. However, an attempt has been made to carve out a representative picture of the various facets of the industry, as far as possible, in the interpretation which follows these Tables. All the centres excepting Chitrada covered by the detailed write-up in Parts A and B are also included in these Statistical Tables.

TABLE - I
(Rural)
List of Rural Crafts and Number of Persons Employed in Production

S. No.	Branch of Industry— Major Group of Indian Standard Industrial Classification	Name of craft	Number of villages in which the crafts are in practice	Number of persons employed in production		
				Persons	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	36	Brass bells making	1 (Mylavarany)	11	7	4
2	36	Bronze icons making	1 (Perumallapal'e)	14	13	1
3	36	Brass icons making	1 (Pembarthi)	10	10	...
4	36	Brass utensils making	10 (Budithi, Pedakota, Makivalasa, Ajjaram, Mylavaram, Ramanakkapet, Vanipenta, Bhiknoor, Pembarthi and Mustyal)	1,476	1,108	368

TABLE - II
(Rural)
Distribution of Artisan Communities

S. No.	Name of caste or community	Name of craft	No. of villages surveyed	No. of families working	Total No. of adult workers			No. of families working under co-operation	No. of families working in	
					Persons	Males	Females		Own houses	Work-shops set up by their employers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Baliya	Brass utensils making	1	15	46	26	20	5	10	...
2	Devanga	Brass utensils making	1	11	18	10	8	2	9	...
3	Ediga	Brass utensils making	1	8	8	8	...	...	...	8
4	Kaikalabathula or Karikalabhaktula	Brass utensils making	1	4	4	4	...	...	...	4
5	Kammara	Brass utensils making	1	1	1	1	...	...	1	...

—Contd.

TABLE - II—Concl'd.
(Rural)
Distribution of Artisan Communities

S. No.	Name of caste or community	Name of craft	No. of villages surveyed	No. of families working	Total No. of adult workers			No. of families working under co-operation	No. of families working in	
					Persons	Males	Females		Own houses	Work-shops set up by their employers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
6	Kamsali	Brass utensils making	6	134	280	248	32	39	54	41
		Bronze icons making	1	14	14	13	1	11	3	...
7	Kanchara	Brass utensils making	3	84	94	93	1	73	11	...
		Brass icons making	1	10	10	10	...	10	...	...
8	Kapu	Brass utensils making	2	161	170	166	4	2	10	149
9	Karnibhaktula	Brass utensils making	1	9	9	9	...	...	...	9
10	Marathi	Brass utensils making	1	20	40	22	18	...	20	...
11	Muslim	Brass bells making	1	7	11	7	4	...	...	7
		Brass utensils making	1	250	580	300	280	32	216	2
12	Reddy	Brass utensils making	1	86	86	86	...	6	20	60
13	Vadde	Brass utensils making	1	15	20	15	5	4	11	...
14	Velama	Brass utensils making	1	80	120	120	...	21	59	...

TABLE - III
(Rural)

Distribution of Articles of Rural Crafts by Material Used

S. No.	Branch of Industry—Major Group of Indian Standard Industrial Classification	Name of article	Main material		Subsidiary material		Raw material imported	
			Name of material	No. of villages engaged in manufacture	Name of material	No. of villages engaged in manufacture	Place from which imported (Name of State or Country)	No. of villages engaged in manufacture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	36	Brass bells	Bell metal and zinc	1 (Mylavaram)	Clay, fuel and husk	1	...	...
2	36	Bronze icons	Bronze	1 (Perumallapalle)	Lead and tin	1	...	...
3	36	Brass icons	Brass, copper and zinc	1 (Pembarthi)	Lead and tin	1	...	...
4	36	Brass utensils	Brass, bell metal, copper, zinc and old scrap of brass	10 (Budithi, Pedakota, Makivalasa, Ajaram, Mylavaram, Ramanakkapet, Vanipenta, Bhiknoor, Pembarthi and Mustyal)	Charcoal, coal, coke, nitric acid, sulphuric acid, tankam, tin and veligaram (bo-tax)	10	...	...

TABLE - IV
(Rural)
Designs

S. No.	Branch of Industry—Major group of Indian Standard Industrial Classification	Name of article	No. of villages engaged in manufacture indicating the sources from which they receive designs							Name of design		Colours used	
			No. of villages	Traditional	Self designed	Middle men who under take market ing	Design centres	Co-operative sale societies	Other sources	No. of villages engaged in its manufacture	Name of its manufacture	No. of villages engaged in its manufacture	Name of its manufacture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	36	Brass bells	1 (Mylavaram)	1	...	...	...	...	...	...	...	...	...
1	36	Bronze icons	1 (Perumallapalle)	1	...	...	...	...	...	...	...	...	...
3	36	Brass icons	1 (Pembarthi)	1	...	...	...	...	...	...	...	...	...
4	36	Brass utensils	10 (Budithi, Pedakota, Makivalasa, Ajaram, Mylavaram, Ramanakkapet, Vanipenta, Bhiknoor, Pembarthi and Mustyal)	10	...	...	...	...	...	...	...	...	...

TABLE - V
(Rural)
Consumption and Sale

S. No.	Branch of Industry—Major Group of Indian Standard Industrial Classification	Name of article	No. of villages which entirely produce for use		No. of villages which produce for both personal use and sale	No. of villages which produce for sale in open markets		No. of villages where there are co-operative sales societies
			Domestic use	Use for ceremonial purposes		Order of middle men who advance money and undertake marketing facilities	Others	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	36	Brass bells	...	...	...	...	1 (Mylavaram)	...
2	36	Bronze icons	...	...	...	...	1	1 (Perumallapalle)
3	36	Brass icons	...	...	...	...	1	1 (Pembarthi)
4	36	Brass utensils	...	...	...	...	10	9 (Budithi, Pedakota, Makivalasa, Ajaram, Mylavaram, Vanni-penta, Bhiknoor, Pembarthi and Mustyal)

TABLE - VI
(Rural)
Cost of Production, Sale Price and Earnings

S. No. (1)	Branch of Industry-Major Group of Indian Standard Industrial Classification (2)	Name of article (3)	No. of villages for which information was furnished (4)	Cost per unit of raw material		Cost per unit of conversion into finished product		Average sale price of finished goods with reference to Col. (7)	Average earnings per day per worker
				Unit of raw material	Cost	Unit	Cost		
				(5)	(6)	(7)	(8)	(9)	(10)
					Rs. P.		Rs. P.	Rs. P.	Rs. P.
1	36	Brass utensils	6 (Pedakota, Ajjaram, Mylavaram, Bhiknoor, Pembarthi and Mustyal)	1 Kg. Brass	4.00 to 6.70	1 Kg.	0.60 to 3.00	5.00 to 10.00	2.75 to 3.00

TABLE - VII
(Rural)
List of very Skilled Craftsmen of each Community

S. No. (1)	Location No. (2)	Name of village (3)	Name of Taluk and District (4)	Name of craft (5)	Name of caste or community (6)	Names of skilled craftsmen (7)
1	36	Budithi	Srikakulam Taluk and District	Brass utensils making	Kamsali	{ Garugu Sudarshan Rao Patoju Appalaswamy Patoju Satyam Patoju Seetaramaswamy
				Brass utensils making	Devanga	{ Aakasapu Nilakantam Bommanna Viswanatham Kolli Mallaiiah Nakkina Venkatappadu
2	6	Pedakota	Srikakulam Taluk and District	Brass utensils making	Kamsali	{ Mabagapu Sambasiya Rao Tamada Kama Raju
3	9	Makivalasa	Narsannapet Taluk, Srikakulam District	Brass utensils making	Not stated	{ Chilakalapudi Ramamurty Chilakalapudi Suryanarayana Garugu Rajalingam
4	42	Ajjaram	Tanuku Taluk, West Godavari District	Brass utensils making	Karnibhaktula	{ Ande Basavalingam Ande Kotaiiah Ande Narasimha Murty Ande Pullarah Boppe Kotilingam Boppe Koti Veeramallayya Boppe Veera Bhadrudu Boppe Samba Murthy Sala Gangadharudu
					Reddy	{ Arthamuri Subbi Reddy Arthamuri Mula Reddy Arthamuri Sreerama Reddy Arthamuri Suri Reddy Goluguri Krishna Reddy Karri Dharma Reddy Karri Venkata Reddy Konala Raoji Reddy Kovuri Tathi Reddy Medapati Satyanarayana Reddy Nallamilli Subbi Reddy Nallamilli Venkata Reddy Sabbella Krishna Reddy Sabbella Sathi Reddy Sabbella Venkata-Satyanarayana Reddy Tadi Krishna Reddy

-Contd.

TABLE - VII—Concl'd.
(Rural)

List of very Skilled Craftsmen of each Community						
S. No. (1)	Location No. (2)	Name of village (3)	Name of Taluk and District (4)	Name of craft (5)	Name of caste or community (6)	Names of skilled craftsmen (7)
4	42	Ajjaram (Contd.)	Tanuku Taluk, West Godavari District	Brass utensils making	Not stated	{ Achanta Rama Rao Achanta Suranna Addala Ramanna Alladi Paidiyya Badampudi Tataiah Baireti Veeranna Baireti Samba Murthy Baswa Rammurthy Baswa Tataiah Bhavana Suranna Boddureddi Ganga Raju Boddureddi Tathaiah Devari Suranna Devari Samba Murthy Eluri Chinnayya Gudapati Veeranna Jagu Ramanna Jayavarapu China Bhimacharyulu Jayavarapu Namassivaya Kosuri Venkanna Maniki Suryanarayana Medapati Venkata Ratnam Nunna Sathaiah Nunna Satyanarayana Murty Nunna Venkata Ratnam Palla Satyanarayana Palla Swamy Pothabathula Peranna Suravarapu Veerayya Tirugu Sivalingam Vanga Satyanarayana Vedurada Sundaracharyulu
5	17	Mylavaram	Vijayawada Taluk, Krishna District	Brass bells making	Muslim	{ Sheik Abdul Nabisaheb Sheik Ali Sheik Mastan Arejahanuddin
				Brass utensils making	Kamsali	{ Dasu Nageswara Rao Konnala Anrutacharyulu Penderu Sudarsan Samerupeta Venkatasastrulu
6	113	Perumallapalle	Chandragiri Taluk, Chittoor District	Brass icons making	Kamsali	{ Kundavaram Chengalaraya Chari Kundavaram Krishnamachari Kundavaram Manikyamachari Kundavaram Venkatarama Chari Veeramalli Sreenivasachari
7	81	Vanipenta	Proddatur Taluk, Cuddapah District	Brass utensils making	Not stated	{ Poola Subbarayudu
8	119	Pembarthi	Jangaon Taluk, Warangal District	Brass utensils making	Kanchara	{ Ayela Achari Ayela Balalingam Ayela Dakshinamurthy Ayela Yellaiah Kaluri Balalingam
9	63	Mustyal	Jangaon Taluk, Warangal District	Brass utensils making	Kanchara	{ Ragi Bhumaiah Ragi Brahmaiah Ragi Narasimhaijah Ragi Ramabrahmaiah Ragi Sakharam Ragi Venkatesham

RURAL

Table I

The Brass and Bronze industry as figured in the survey comprises the production of brass bells, brass icons, bronze icons and brass utensils. Bells are made in Mylavaram, a village in Krishna District, icons are prepared at Perumallapalle in Chittoor District and Pembarthi in Warangal District. The utensils of household utility are produced in 10 villages namely, Budithi, Pedakota and Makivalasa in Srikakulam District, Ajjaram in West Godavari District, Mylavaram and Ramanakkapet in Krishna District, Vanipenta in Cuddapah district, Bhiknoor in Nizamabad District and Pembarthi and Mustyal in Warangal District. Pembarthi is the most famous centre of all in the Telangana area of the State. As the making of household utensils out of brass is one of the village crafts essential for the society as a whole, one comes across brasssmithy along with the allied crafts like silversmithy, blacksmithy and carpentry within easy reach of every small group of villages, if not in almost all villages in the State. However, the particulars gathered represent only those places where there is a concentration of brasssmithy and as a consequence where there is, sometimes, an established industrial co-operative society for the furtherance of the interests of those engaged therein. There are 11 persons working in the craft of brass bells making at Mylavaram including 4 females. Ten persons (all males) are engaged in the production of brass icons at Pembarthi, whereas 13 males and a female work in the craft of bronze icons making at Perumallapalle. A total of 1,476 persons, including 25% women are employed in making brass utensils in the 10 villages covered by the survey. In Vanipenta village alone there are 323 females working, a number almost equal to that of males working in that village. This is a peculiar feature, for this craft normally requires men who are strong and sturdy and capable of hard work. Approximately 25% of the total males are working at Ajjaram village, with Makivalasa closely following it. Of the 3 places of Telangana region, Pembarthi has the highest number of workers *viz.*, 68—all males.

Table II

The workers engaged in the brass and bronze industry belong to 13 castes or communities. These are the following. Balija, Devanga, Ediga, Kaikalabathulu or Karikalabhaktula, Kammara, Kamsali, Kanchara, Kapu, Karnibhaktula, Marathi, Muslim

Reddy, Vadde and Velama. The workers who prepare bells are Muslims. The metal icons are made by persons of two castes namely Kamsali and Kanchara. The former one are practising the craft at Perumallapalle in Andhra and the latter at Pembarthi in Telangana area. In the rural areas these two castes still enjoy the traditional reputation for metal smithy, as they did originally. Several of the other communities must have entered the craft only after learning it from these two traditional groups, and it is no wonder that the craft still depends upon their ingenuity and skill at least in the countryside till to-day. Of the total number of 909 families working, 242 belong to Kamsali and Kanchara castes which works to roughly 26.6%. The Kamsali families (148) pertain to 7 villages (*viz.*, Budithi, Pedakota, Makivalasa, Ajjaram, Mylavaram, Ramanakkapet and Perumallapalle) in Andhra and all the 94 Kanchara families belong to the Telangana area. It is also gathered that no other caste seems to be engaged in the brass industry in the Telangana area. Almost an equal number of families (*i.e.*, 257) belong to Muslims in the single village Vanipenta in Cuddapah district which is again a peculiar feature here. The next largest caste represented is Kapu with 161 families followed by Reddy and Velama castes. Kapus, Karnibhaktulas and Reddys predominate at Ajjaram and Velamas at Makivalasa. Their numerical strength in the local population may perhaps be a factor that contributed to their having taken to this industry in larger numbers.

The total number of families working under co-operation is 205. This is about 22.5% of the total families engaged in the industry. Four hundred and twenty-four *i.e.*, roughly 47% of the total families work in their own houses. Thus about half of the people are more or less independent workers in the industry. The number of families having members in workshops set up by their employers is 280; most of them belong to Ajjaram village, where big workshops exist. The persons who are engaged in the preparation of icons both at Perumallapalle and Pembarthi villages work within the fold of Industrial Co-operative Societies at the respective places.

Table III

The main materials that are used for preparation of brass bells are given to be bell metal and zinc. Bell metal is none other than the alloy of

copper and tin in a proportion roughly equivalent to 7:3. The bells are used for many purposes mainly to hang in the necks of bullocks, for use in the temples, and to be carried by Jangams, a class of Saivite almsmen. The subsidiary materials are fuel, clay and paddy husk. The main materials used for icons are brass or bronze, copper and zinc; and the subsidiary materials are lead and tin. Bronze is the dark brown alloy of copper, tin and zinc with a little lead and steel dust added to it. It is very hard.

For the manufacture of the household utensils are required the same main materials namely brass, bell metal, copper and zinc. Brass is the alloy (of yellow colour) of copper with zinc. Usually old scrap of brass is used, owing to the scarcity of fresh metals. Coke, coal, charcoal, nitric acid, sulphuric acid (locally called *tejapu*) tin, *tankam* and *veli aram* (borax) are the subsidiary materials necessary for the industry.

Table IV

There are no established sources from which the artisans or craftsmen engaged in the brass and bronze industry receive the designs of the articles produced by them. The designs or patterns made use of in the course of production are all said to be traditional. There is practically nothing borrowed or copied from an outside agency. Generally, demand determines the design along which more and more articles are to be produced. The age-old patterns coming in the father-to-son generations in particular areas of the State are followed. Surely the designs of even household utensils, the brass containers of water, etc., vary from place to place in the State. But the production can be said to be confined to traditional designs, enriched, if possible with a few alterations to suit the modern tastes evolved by the passage of time. Thus all the villages are returned to be following traditional designs only.

Table V

All the villages produce the articles (bells, icons and household utensils) for sale in open market. A

large proportion of the articles would well be produced against orders of middlemen or traders. Out of the 10 villages producing utensils, 9 have co-operative sales societies. These villages are Budithi, Pedakota, Makivalasa, Ajjaram, Mylavaram, Vanipenta, Bhiknoor, Pembarthi and Mustyal. The craftsmen producing the icons both at Perumallapalle and Pembarthi are within the fold of co-operative societies.

Table VI

The cost of one kilogram of the raw material brass is reported to be between Rs. 4. and Rs. 6.70. The cost of conversion into brass utensils varies from 0.60 P. to Rs. 3.00 per Kg. The average sale price of finished goods is Rs. 5.00 to Rs. 10.00 per Kg. The average earnings per worker are Rs. 2.75 to Rs. 3.00 per day. Similar data in respect of the icons and bells is, however, not available from the filled in schedules.

Table VII

Eight names of skilled craftsmen in Budithi village are given, of whom 4 each belong to Devanga and Kamsali castes. There are two Kamsalis in Pedakota. The caste of three workers of Makivalasa is, however, not indicated. The number of skilled craftsmen at Ajjaram, whose names are furnished, is 57, of whom 9 belong to Karnibhaktula and 16 to Reddy castes. The caste of others is not known. The three persons engaged in brass bells making at Mylavaram are Muslims whereas those making brass utensils are Kamsalis. The five icon makers at Perumallapalle belong to Kamsali caste. Caste has not been mentioned in respect of the only name received from Vanipenta in Cuddapah District. The six skilled craftsmen of Pembarthi and Mustyal villages in Jangaon Taluk of Warangal District are from Kanchara community. It has to be noted here that equally good, if not better, skilled craftsmen surely exist in the villages not included in this Table. Their names have, however, not been furnished by the informants.

TABLE - I
(Urban)

List of Urban Crafts and Number of Persons Employed in Production

S. No. (1)	Branch of Industry—Major Group of Indian Standard Industrial Classification (2)	Name of craft (3)	Number of towns in which the crafts are in practice (4)	Number of persons employed in production		
				Persons (5)	Males (6)	Females (7)
1	36	Brass icons making	1 (Vijayawada)	8	8	...
2	36	Brass utensils making	6 (Anakapalle, Srungavarapukota, Kakinada, Rajahmundry, Kalahasti and Gadwal)	1,628	1,418	210

TABLE - II
(Urban)

Distribution of Artisan Communities

S. No. (1)	Name of caste or community (2)	Name of craft (3)	No. of towns surveyed (4)	Total No. of families in the towns covered by the survey (5)	No. of families working (6)	Total No. of adult workers			No. of families working under co-operation (10)	No. of families working in	
						Persons (7)	Males (8)	Females (9)		Own houses (11)	Work-shops set up by their employers (12)
1	Agnikula Kshatriya	Brass utensils making	1 (Kakinada)	10	10	10	...	...	...	...	10
2	Baliya	-do-	1 (Kalahasti)	105	105	93	12	...	...	...	105
3	Devanga	-do-	2 (Anakapalle, Rajahmundry)	18	95	89	6	...	...	...	18
4	Ediga	-do-	1 (Kalahasti)	76	76	65	11	...	...	...	76
5	Gavara	-do-	1 (Anakapalle)	2	2	2	...	...	...	...	2
6	Gujrati	-do-	1 (Rajahmundry)	1	1	1	...	...	...	...	1
7	Harijan	-do-	1 (Kalahasti)	125	196	182	14	...	...	...	125
8	Kamma	-do-	1 (Kalahasti)	100	100	85	15	...	...	...	100
9	Kamsali	-do-	2 (Srungavarapukota, Gadwal)	32	97	52	45	21	11	...	...
	-do-	Brass icons making	1 (Vijayawada)	4	8	8	...	...	...	4	...
10	Kanchara	Brass utensils making	1 (Anakapalle)	35	54	54	...	...	...	13	22
11	Kapu	-do-	2 (Kakinada, Rajahmundry)	63	112	106	6	...	...	...	63
12	Kshatriya	-do-	1 (Kakinada)	2	2	2	...	...	...	...	2
13	Muslim	-do-	1 (Kalahasti)	153	330	250	80	...	...	...	153
14	Sale	-do-	2 (Kakinada, Rajahmundry)	161	218	215	3	...	...	...	161
15	Settibalija	-do-	1 (Kakinada)	15	15	15	...	...	...	...	15
16	Vaisya	-do-	1 (Rajahmundry)	1	1	1	...	...	...	...	1
17	Vannekapu	-do-	1 (Kalahasti)	125	193	175	18	...	...	...	125
18	Yadava	-do-	1 (Kakinada)	10	10	10	...	...	...	...	10
19	Unspecified caste	-do-	1 (Anakapalle)	5	11	11	...	...	...	5	...

TABLE - III
(Urban)

Distribution of Articles of Urban Crafts by Material Used

S. No. (1)	Branch of Industry—Major Group of Indian Standard Industrial Classification (2)	Name of article (3)	Main material		Subsidiary material		Raw material imported	
			Name of material (4)	No. of towns engaged in manufacture (5)	Name of material (6)	No. of towns engaged in manufacture (7)	Place from which imported (Name of State or country) (8)	No. of towns engaged in manufacture (9)
1	36	Brass icons	Copper, brass	1 (Vijayawada)	Tin (tagaram), wax	1	...	...
2	36	Brass utensils	Brass, copper, gun metal, old brass utensils, zinc	6 (Anakapalle, Srungavarapukota, Kakinada, Rajahmundry, Kalahasti, Gadwal)	Aluminium, dammer, lac, lead, tanning lustre, tin.	6	...	...

TABLE - IV
(Urban)

Designs

S. No. (1)	Branch of Industry—Major Group of Indian Standard Industrial Classification (2)	Name of article (3)	No. of towns engaged in its production (4)	No. of towns engaged in manufacture indicating the sources from which they receive designs						Name of design		Colours used	
				Traditional (5)	Self designed (6)	Middlemen who under take marketing (7)	Design centres (8)	Co-operative sales societies (9)	Other sources (10)	Name (11)	No. of towns engaged in its manufacture (12)	Name of colour (13)	No. of towns engaged in its manufacture (14)
1	36	Brass icons	1	1 (Vijayawada)	...	...	...	...	...	...	...	...	...
2	36	Brass utensils	6	6 (Anakapalle, Srungavarapukota, Kakinada, Rajahmundry, Kalahasti, Gadwal)	...	...	...	...	...	...	...	...	...

TABLE - V
(Urban)

Consumption and Sale

S. No. (1)	Branch of Industry—Major Group of Indian Standard Industrial Classification (2)	Name of article (3)	No. of towns which entirely produce for use		No. of towns which produce for both personal use and sale (6)	No. of towns which produce for sale in open markets		No. of towns where there are co-operative sale societies (9)
			Domestic use (4)	Use for ceremonial purposes (5)		Order of middlemen who advance money and undertake marketing facilities (7)	Others (8)	
1	36	Brass icons	...	...	...	...	1 (Vijayawada)	...
2	36	Brass utensils	...	...	...	...	6 (Anakapalle, Srungavarapukota, Kakinada, Rajahmundry, Kalahasti, Gadwal)	2 (Srungavarapukota, Gadwal)

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TABLE - VI

(Urban)

Cost of Production, Sale Price and Earnings

S. No.	Branch of Industry-Major Group of Indian Standard Industrial Classification	Name of article	No. of towns for which information was furnished	Cost per unit of raw material		Cost per unit of conversion into finished product		Average sale price of goods with reference to Col. (7)	Average earnings per worker per day
				Unit of raw material	Cost	Unit	Cost		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Rs. P.		Rs. P.	Rs. P.	Rs. P.
1	36	Brass icons	1 (Vijayawada)	1 Kg. brass	4.46 to 6.70	One icon 2' high with 4 hands	280.00	450.00	3.00
2	36	Brass utensils	1 (Gadwal)	...	...	...	...	3.00 to 12.00	3.00 to 4.00

TABLE - VII

(Urban)

List of very Skilled Craftsmen of each Community

S. No.	Location Code No.	Name of town/city	Name of craft	Name of caste or community	Names of skilled craftsmen
(1)	(2)	(3)	(4)	(5)	(6)
1	1	Anakapalle	Brass utensils making	Kanchara	Artikatha Appala Raju
		-do-	-do-	do	Chitinodu Chinnayachari
		-do-	-do-	do	Chitinodu Satyanarayana
		-do-	-do-	do	Nallajeela Varahalu
		-do-	-do-	do	Pandari Perachari
2	1	Vijayawada	Brass icons making	Kamsali	Mylarapu Bilvachari
		-do-	-do-	do	Mylarapu Jagannadhachari
		-do-	-do-	do	Mylarapu Shanmugachari
		-do-	-do-	do	Mylarapu Sivagangachari
		-do-	-do-	do	Pillada Appalachari
		-do-	-do-	do	Venuri Bilvachari
		-do-	-do-	do	Venuri Srinivasa Rao
		-do-	-do-	do	Vevada Venkiah

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Table 1

The number of towns for which the particulars have been received is 7, including 3 cities in the State. The 3 cities are Vijayawada, Kakinada and Rajahmundry. One city namely, Vijayawada has the artecraft of making brass icons. Kakinada and Rajahmundry are the two cities noted for production of brass castware utensils, where many workshops owned by private manufacturers exist. The requirements of many neighbouring districts for brass castware utensils of household necessity are met by supplies from these two cities; and these goods are exported even to the centres in the far South. The other towns figured in the survey are Anakapalle, Srungavarapukota, Kalahasti and Gadwal. Of these four, the production at Kalahasti town is on a bulk scale, whereas the other centres cater to the local needs largely.

There are eight craftsmen engaged in the production of brass icons — all males, at Vijayawada. The number of persons employed in the manufacture of brass utensils is 1,628. This figure includes 210 females also. In view of the arduous nature of duties and constant exposure to heat characteristic of this craft, females are not considered suitable for working in this job. Of the 210 female workers in this craft, as many as 150 are engaged in Kalahasti alone. Probably, they are put on such less exacting works as moving materials hither and thither and making earthen moulds. The proportion of males to females is 7:1 roughly. The percentage of females employed in the production is only 13, if the figures gathered from the 6 centres can be taken as an index for the industry as a whole in the State.

Table II

The persons engaged in the craft of brass icons making at Vijayawada belong to Kamsali caste. There are 4 such families from which altogether 8 persons work in their own houses producing icons of various deities, etc. The various castes or communities working in the production of brass utensils are the following: Agnikula Kshatriya, Balija, Devanga, Ediga, Gavara, Gujrati, Harijan, Kamma, Kamsali, Kanchara, Kapu, Kshatriya, Muslim, Sale, Settibali, Vaisya, Vannekapu and Yadava. Thus as many as 18 communities are practising this single craft,

which is indeed a large number. Each caste is found to be practising this craft in not more than 2 towns at the most. It is clear that the art is not confined to a particular group of people and the workers born of any caste or community are free to practise it provided, of course, they learn the craft and put in sustained efforts into it. The craft provides avenues of gainful employment to all persons of any caste or creed. There seems to be no taboo on any particular caste from taking up this industry. Of course, the castes Kamsali and Kanchara are traditionally associated with brasssmithy in many parts of the State. Now-a-days, the local strength of a particular community seems to be one of the factors that influence the number of workers who seek employment through the brass and bronze industry.

Among these 18 castes and communities, Muslims form the highest number of persons working in the craft in the six towns surveyed. They belong to 153 families in Kalahasti town in Chittoor District and all are employed in workshops set up by their employers. Next comes the Sale caste with 218 workers in the cities of Kakinada and Rajahmundry. There are 196 Harijan workers including 14 women employed at Kalahasti. The other castes which have large numbers of workers in the brass and bronze industry are Balija, Kamma, Vannekapu, Ediga and Kapu. Excepting the workers of the last mentioned caste, these workers belong to Kalahasti. Kapus again belong to Kakinada and Rajahmundry. The traditional smiths namely Kamsali and Kanchara are represented by only 9.7% of the total number of workers in the towns covered by the survey. Even though their strength engaged in the industry is not quite imposing, it needs no emphasis that in most of the rural parts the works relating to the brasssmithy are mostly attended to by them alone, notwithstanding the other communities having come to engage themselves in that craft for eking out their livelihood. Even though it cannot be asserted that most of the people of other communities are only employees with no originality of their own, the traditional castes still enjoy reputation for their ingenuity and traditional craftsmanship in the brass and bronze industry as is the case with silversmithy, blacksmithy, etc. This is particularly true in the rural parts though not reflected in the urban places covered by the survey.

The number of families working under co-operation is only 21 — from Kamsali community at Srungavarapukota (15) and Gadwal (6). The number of families working in their own houses is also as small as 33. All the remaining (989) families consist of workers employed in private workshops. This factor is particularly evident from this Table perhaps because big workshops exist in big towns or cities and where the demand for the goods produced is fairly heavy enabling the running of such workshops to be quite a profitable proposition in the private sector. As against this, the individual families who work in their homes are scarce in big centres.

Table III

The main materials used in the preparation of brass icons are copper and brass and the subsidiary items are tin and wax. These are purchased locally.

As regards the brass utensils, the main materials used are old brass utensils or scrap, brass sheets, gun metal, copper and zinc. The old brass utensils are purchased from the established traders who deal in the old scrap. People go about in the streets and buy at bargained prices old brass vessels and broken pieces. This scrap is in turn collected by some of the dealers in metalware articles or wholesale traders. Manufacturers use this scrap as main material for turning out new brass utensils. Brass sheets turned over in rolling mills form the material for articles wrought out of sheet metal. Copper and zinc or gun metal and lead are the combinations of raw materials which are molten in furnace to prepare brass that goes into production of castware goods. The metal sheets or the raw metals in the form of ingots are generally scarce now-a-days. These are supplied only on production of permits issued by the Industries Department of the State Government. The allotted quotas are not sufficient for the demand and output and therefore the old scrap is the commodity on which most of the castware production units depend now-a-days almost throughout the year.

Aluminium, lead, tin, lac, tanning lustre and dammar (coal tar) are the subsidiary materials used for production of brass utensils. These goods are purchased locally.

Table IV

Generally speaking, there are no established source patte

terns are stated to be always traditional. Normally, there is no invention of new designs or the invasion of exotic patterns. The ingenuity of craftsmen may occasionally result in bringing out a new shape or an improved design. How the market would receive the new type is studied in the market and production is based on the trend of the demand. No colours are used in the brass and bronze industry in the State.

Table V

The utensils manufactured in the brass and bronze industry are all intended for sale in open markets. They are not usually confined to the orders of middlemen who advance money and undertake marketing facilities, though such a thing may occur now and then. The preparation of brass icons would, no doubt, be very limited and perhaps only against prior orders. The icons being costly cannot be sold away so easily in the shops or other market places.

Table VI

The cost of 1 Kg. of brass utilised for making brass icons at Vijayawada is given to vary from Rs. 4.46 to Rs. 6.70. As an illustration, the cost of preparation of an image of 2 feet height with four hands is said to be Rs. 280 approximately; and it is sold at Rs. 450. The average earnings per worker work out to Rs. 3 per day. Obviously, it is difficult to pitch upon a unit of finished products in the case of brass utensils. The patterns and sizes are too numerous. The consumption of raw material is dependent upon the pattern and size. The labour charges also vary as per the intricacies of the designs. A plain and simple type may cost less and a nicer one more. In view of these factors the production cost structure is not furnished. This can possibly be ascertained for only a particular set pattern and size and the data cannot, however, be generalised. The average sale price of finished brass utensils is given to vary from Rs. 3 to Rs. 12 per Kg. by weight. The average earnings per worker engaged in brass utensils making are between Rs. 3 to Rs. 4 per day. The wages are usually calculated on the basis of quantum of turnover and not on the basis of manhours. This method induces the workers to work more steadily and for more hours in a day with a view to earning more. In this method, the employer also feels better because extracting

other aspects of production leaving the progress to the employees themselves.

Table VII

Every town can boast about the names of quite a few skilled craftsmen in the industry. But only

the information received in respect of Anakapalle (brass utensils making) and Vijayawada (brass icons making) contained the names of skilled craftsmen. Altogether 13 names are given, 5 of Anakapalle and 8 of Vijayawada. The first group belongs to the Kanchara caste and the latter to the Kamsali.

ANNEXURE
VILLAGE SCHEDULE OF INDUSTRIES AND CRAFTS

District :
Taluk/Tahsil :
Town/Village :
N.E.S. Block (if any) :
No.

PART-A
GENERAL DESCRIPTION OF VILLAGE

Describe briefly—

i. Area of village in acres

ii. Population

iii. Approximate number of families

iv. Various sections in the village corresponding to communities and their names and the approximate number of households

v. Distance from nearest Railway station (miles) (give the name of the Railway station also)

vi. Distance from nearest main road (give the name of the road)

vii. Distance from Tahsil/Taluk headquarters

Name of community

(a)

(b)

(c)

(d)

No. of households

Name of community

(e)

(f)

(g)

(h)

No. of households

PART-B
ARTISAN COMMUNITIES IN THE VILLAGE (TRIBAL & NON-TRIBAL)

1. Name of caste or community engaged in a handicraft		2. Approximate No. of families of the community engaged in the handicraft	3. Total No. of adult workers		4. No. of families working under co-operation	5. No. of families working in own houses or in workshops set up by their employers	6. Names of articles produced. Describe the articles and mention approximate sizes and heights
Name of the community	What handicraft		Males	Females			
1.							
2.							
3.							
4.							
5.							
7. Main material used		8. Subsidiary material	9. Whether raw material is imported and if so from where? What are the main ingredients?		10. Who gives the designs	11. Give the names of the designs. Indicate whether they are traditional or made to suit modern requirements. (Give photographs or sketches of the typical designs and forms)	12. Describe colours used. How are the colours obtained?
1.							
2.							
3.							
4.							
5.							
13. Tools used. (Describe tools. Give pencil sketches and photographs separately)		14. Who make these tools and from where are they imported?		15. General description of workshop (use separate sheet of paper if necessary). Kind of power used etc.		16. When did the artisan community come to this village? Who were the patrons? How old is this craft in this village?	17. Describe legends or myths current on the origin of the artisan community and of the craft
1.							
2.							
3.							
4.							
5.							

18. Are there any villages in the neighbourhood where branches of these artisans communities live? If so, give name of village(s) and community.
19. Do the communities produce for their own use entirely? Describe whether for domestic or ceremonial purposes.
20. Whether they produce entirely for others in exchange for money or kind. If so, who are the customers and to which communities do they belong?

(i) Are they for domestic use?

(ii) Are they for ceremonial or ritualistic purposes? If so, for which ceremony or ritual.
21. Whether the communities produce for themselves and for sale?

(i) Describe types of objects for own domestic or ceremonial use. Mention heights and sizes of objects.

(ii) Describe types of objects for sale. Mention heights and sizes of objects.
22. Do the communities produce for sale in open markets, fairs & festivals? Mention the markets, festivals or melas and the occasions.

(i) Do they make to the order of middlemen who advance money and undertake marketing facilities?

(ii) If they make on their own without orders from middlemen, how do they meet their capital requirements? What is their capital investment?

(iii) Do they have any marketing difficulties?

(iv) Do they get any government aid?
23. If there is a co-operative society are there members in it who belong to different castes?
24. Give the names of the designs and myths or stories behind the names, explanation of what the design stands for and the shape or decoration of objects.
25. Describe production.

[Please describe stage by stage and take photographs wherever possible. Photographs should be supplemented by pencil sketches of surface forms, designs, colours and processes of paper if necessary for sketches of stages]. (If the reporter himself is not capable of making a good pencil sketch, he may take the assistance of some local artist).

(i) First stage

(ii) Second stage

(iii) Third stage

(iv) Final and finishing stage
25. (a)—

(i) Price at which raw material is available

(ii) Cost of conversion into finished products

(iii) The usual sale price of finished goods

(iv) Wages earned.
26. Give a list of very skilled craftsmen of each community engaged in handicrafts. (Their names and addresses).

PART-C

ADDITIONAL QUESTIONS FOR TRIBAL COMMUNITIES

27. Is this a tribe where every household produces things for its own use of the community?
28. Is this a tribe of which only particular sections produce particular things? If so, which sections produce which things. Mention names.

Name of section
of Tribe

†

29. Is this a semi-tribal community and does it produce articles for neighbouring tribes? If so, mention the names of the tribes for which they produce and the names of articles.
30. Does this tribe produce articles for non-tribal or advanced communities? If so, mention names of these communities and the names of articles. Do they produce articles to reduce debts from *sowcars*?
31. *General*: Any other useful information about the craft or the community engaged in the craft—historical cultural or economic.

Name of neighbouring
Tribe

Name of article
produced for them

Names of non-tribal
or advanced communities

Names of articles
produced for them

గ్రామ పరిశ్రమలు మరియు చేతిపనుల పట్టిక.

జిల్లా : _____ సాక్షి: వి. పరిణా శేఖర్
తాలూకా/తహసీల్దార్ : _____ కేంద్రము (పేర్ల గానం చేయండి) :

సర్పంచి/గ్రామం : _____ సంఖ్య : _____

భాగము : 1.

గ్రామం గురించి సాధారణ వివరాలు

వ్యక్తులుగా నివసించుచున్నది.

i. గ్రామ పరిశ్రమలు (ఎకరములలో)

ii. _____

iii. కుటుంబముల సంఖ్య (సుమారుగా)

iv. గ్రామములో నివసించే కుల/వర్ణముల పేర్లు, సంఖ్య, కుల/వర్ణములకు సంబంధించిన కుటుంబముల సంఖ్య (సుమారుగా)

1.
2.
3.
4.

v. ఇతర సమాచారములో నున్న ప్రత్యేక ప్రశ్నలు ఏవి? ఈ ఎంపిక గుర్తుపెట్టండి?

vi. దర్జాలో నున్న ముఖ్య సమాచారం ఏది, ఎంత సమాచారము నున్నది తెలిపండి.

vii. తాలూకా/తహసీల్దార్ ముఖ్య పట్టణమునుండి దూరము.

భాగము : 2.

గ్రామములోని చేతిపరిశ్రమలకు సంబంధించిన వివరాలు

1. చేతి పరిశ్రమలలో పని చేయు కులము/వర్ణము/సమాజపు పేరు.
కులము/వర్ణము పేరు.

ఆ కుల/వర్ణమునకు సంబంధించిన చేతిపరిశ్రమ పేరు.

2. చేతి పరిశ్రమలలో పాల్గొంటున్న కుటుంబముల సంఖ్య (సుమారుగా)

3. వయోజన కార్మికుల మొత్తపు సంఖ్య
పురుషులు
స్త్రీలు

4. సమీపముగా ఉన్న గోఆఫ్ ఫేటర్ విభాగముగా పని చేయు కుటుంబముల సంఖ్య

5. స్వంత గృహములలో లేక యజమానుల కార్ఖానాలలో పనిచేయు కుటుంబముల సంఖ్య.

స్వంత గృహములలో
కార్ఖానాలలో

6. తయారుచేయు వస్తువుల పేర్లు, వస్తువుల వర్ణన, పరిమాణ, ఎత్తుల వివరణ తెలిపండి.

7. తయారు చేయుటకు ఉపయోగింపబడే ముఖ్య పదార్థములు.

8. సహాయ పదార్థములు.

9. ముడి పదార్థములు దిగుమతి చేయబడుచున్నవా? అయినచో ఎచ్చట నుంచి? అందులో చేర్చబడుచున్న వస్తువులు.

10. డిజైనులు (Designs) నమూనాలు సృష్టించువారి పేర్లు.

11. నమూనాల పేర్లను తెలుపుడు. ఈ నమూనాలు సాంప్రదాయానుసారంగా లేక ఆధునిక పరిస్థితుల దృష్ట్యా తయారయినవా? నమూనాలయొక్క ఛాయాచిత్రాలుగాని, లిఖిత చిత్రములు గాని వీలున్నచో బంధించవలయును.

12. వాడే రంగులు వివరించునది. రంగులు ఏవిధంగా సేకరింపబడుచున్నవి?

13. ఉపయోగింపబడు పనిముట్లు (పనిముట్లు గురించి వివరణ, పనిముట్ల ఆకారాలు పెన్సిలుతో బొమ్మలు వేరే పేజీలో వ్రాసి చూపండి. లేక ఫోటోలు తీసి వుంచండి).

14. ఈ పనిముట్లు తయారుచేయువా రెవరు? ఇవి ఎక్కడ నుండి దిగుమతి చేయబడుచున్నవి?

15. కార్ఖానా (Workshop) గురించి సాధారణ వివరణ. (అవసరమైన ప్రత్యేక పుటలో వ్రాయండి) కార్ఖానాలలో వాడే శక్తి (Power) ఏది?

16. ఈ పనివాండ్రు ఈ గ్రామమునకు ఎప్పుడు వచ్చినారు? ప్రోత్సహకులెవరు? ఈ గ్రామంలో ఈ చేతిపని ఎంతకాలం నుంచి నిర్వహింప బడుచున్నది?

17. పనివాండ్రు కులము లేక సమాజముయొక్క, మరియు చేతిపనియొక్క పుట్టు పూర్వోత్తరాలు, వాటిని గురించి కథలు, గాథలు.

18. పనివాండ్రు కులముల విభాగములు నివసించు పరిసర ప్రాంతాలలో యేవేని గ్రామములు కలవా? అయినచో ఆ గ్రామముల పేర్లు మరియు కులము (సమాజము) పేర్లు.

19. ఆ సమాజములు ఉత్పత్తి చేసే పదార్థములు పూర్తిగా స్వంత ఉపయోగార్థమేనా? అవి నిత్యజీవితావసరాలకా లేక ప్రత్యేక పూజ, మొదలగు కార్యములకై ఉపయోగించుటకా తెలుపుడు.

20. ఈ వస్తువులను కేవలం విక్రయించుటకు గాని, వస్తు మార్పిడికిగాని ఉత్పత్తి చేస్తున్నారా? అయినచో ఆ కొనుగోలు దాగైవరు? వారే సమాజమునకు, కులములకు చెందినవారు.

- (i) ఇవి నిత్య జీవితావసరాలకు పనికివచ్చే వస్తువులా?
- (ii) ఇవి ప్రత్యేక కార్యములకు గాని, మరి సంబంధించిన పూజ, పుణ్యకార్యములకు గాని తయారుచేసినవా? అయినచో ఆ కార్యము చేయు తెలుపుడు.

21. వారు తయారుచేసేవి స్వంత ఉపయోగాధ్యయనకే కాక అమ్మకానికి కూడా నా?

- (i) తమ స్వంత ఉపయోగాధ్యయన తయారుచేసే వస్తువుల, ప్రత్యేక కార్యములకు తయారు చేసే వస్తువుల, వివరణ తెలుపుడు. ఆ వస్తువుల ఎక్కువ పరిమాణములను వివరించునది.

- (ii) అమ్మకమునకు గాను తయారుచేయుచు వస్తువుల వివరణ, వాటి కొలతలు, పరిమాణములను వివరించునది.

22. బజారు సంతలు మరియు ఉత్సవాలలో అమ్మకానికి గాను వస్తువులను ఈ పనివాండ్లు తయారు చేయుచున్నారా? ఆ బజారు, సంతలు, మరియు ఉత్సవాల్లో తెలుపునది.

- (i) పెట్టుబడిపెట్టి విక్రయపు సగుపాయములను వీటి మధ్యవర్తిత్వ ఉత్తరువు (Order) ప్రకారము వస్తువులను తయారు చేసెదరా?

- (ii) ఏ మధ్యవర్తి లేకుండా తమను తానే వస్తువులను తయారు చేస్తుంటే—అతడు ఏ విధముగా పెట్టుబడిని సమకూర్చుకొన గలుగుచున్నాడు? పెట్టుబడి ఎంత వున్నది?

- (iii) వస్తువుల అమ్మకంలో వారికి మైన యిబ్బందులున్నవా?

- (iv) వారేమైనా ప్రభుత్వసహాయం పొందుచున్నారా?

23. గ్రామములో సహకార సంఘమున్నదా? వివిధ వర్గములవారు ఆ సంఘములో సభ్యులుగా వున్నారా?

24. నమూనాల పేర్లు, వాటి నామములకు సంబంధించిన ప్రాచీన గాథలు, పురాణ కథలు వ్రాయునది? అదేగా నమూనా యొక్క భావమేమి? ఆలంకారము లేక ఆకారము యొక్క వివరణ తెలిపేది.

(గమనిక:—అవశ్యమైతే వేరే పుట మీద వ్రాసేట)

25. ఉత్పత్తి వివరణ.

వస్తువు ఉత్పత్తి యొక్క వివిధ దశలను వివరించవలెను. దశలు ఛాగూ చిత్రములను గీయవలెను. ఛాగూ చిత్రములలో బొమ్మ వస్తువుల ఆకారము, నమూనా, రంగులు తెలిపే పన్నింటి చిత్రములను కూడా వ్రాయునది. (లేఖకుడు బాగుగా పెన్నింటి చిత్రములను వ్రాయలేక పోయినచో, ఆ ప్రాంతమందలి చిత్రకారుని సహాయము పొందవలెను) వేరే పుటలో చిత్రములను వ్రాసేది.

- (i) మొదటి దశ.

- (ii) గొండవ దశ.

- (iii) మూడవ దశ.

- (iv) చివరి మరియు ముగింపు దశ.

25. (a) (i) ముడి పదార్థము దొరకు వెల.

- (ii) తయారైన వస్తువులుగా మార్చుటకు అగు ఖర్చు.

- (iii) తయారైన వస్తువుల మామూలు అమ్మకపు వెల.

- (iv) పనివాండ్లు సంపాదించెడి వేతనము లేక లాభము.

26. ప్రతి సమాజమునందు పరిశ్రమకు చెందిన ఆతి నిపుణులైన పనివాండ్ల పట్టిక (ఆ పనివాండ్ల పేర్లు మరియు చిరునామాలు).

భాగము: 3.

కొండజాతులకు అదనపు ప్రశ్నావళి

27. ఇది ప్రతిబటుంబము తమ స్వంతమునకుగాని సమాజ ఉపయోగమునకు గాని అన్ని వస్తువులు తయారు చేసుకొనే జాతియా?

28. ఇది కొన్ని ప్రత్యేకమైన కాఫులు, కొన్ని ప్రత్యేకమైన వస్తువులనుమాత్రమే తయారుచేసే జాతియా? అయినచో ఆ యా కాఫులు తయారుచేసే వస్తువులేవి? వాటి పేర్లు తెలుపునది.

జాతిలోని కాఫు పేరు.

తయారు చేసెడి వస్తువు పేరు.

29. ఇది కొండ జాతులకు చెంది-చెందనటువంటి (Semi-tribal) జాతియా? మరియు ఆ జాతి తయారుచేయు వస్తువులు, ఆ పరిసర ప్రాంతములలోనున్న తెగల గురించి తయారు చేయబడినవా? అట్లయితే ఏ తెగలకోసం చేస్తున్నది, ఆ వస్తువుల పేర్లు వివరించునది.

పరిసర జాతుల పేర్లు.

వాటి కోసం తయారు చేసే వస్తువుల పేర్లు.

30. ఈ జాతివారు కొండజాతులకు చెందనివారికి, మరియు పురోభివృద్ధిచెందిన సమాజములకు వస్తువులు తయారు చేయుచున్నారా? అయినచో ఆ జాతుల పేర్లు, వస్తువుల పేర్లు వివరించునది. వాపుకార్ల దగ్గర వుచ్చుకొను అప్పులు తీర్చుటకుగాను వీరు వస్తువులు తయారు చేయుదురా?

కొండజాతులుకాని సమాజము లేక పురోభివృద్ధి

చెందిన సమాజముల పేర్లు

వారికోసం తయారు చేసే వస్తువుల పేర్లు

31. సాధారణము

చేతి పనుల గురించి లేక చేతి పనివాండ్ల సమాజ విషయమై—చారిత్రక, సాంస్కృతిక లేక ఆర్థిక విషయములు—మరేమైన విలువయిన విషయాలుంటే వివరించునది.

గమనిక:—ఏ కాలములోనైనను జవాబు వ్రాయుటకు స్థలం చాలనియెడల వేరేపుట జతపరచి వ్రాయవలెను.

