

CENSUS OF INDIA 1961

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PART VII - A - VII

HANDICRAFTS AND ARTISANS OF MADRAS STATE

DRUGGETS AND CARPETS OF WALAJAPET

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CENSUS OF INDIA 1961

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LOCATION MAP
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WALAJAPET
WALAJAPET TALUK
NORTH ARCOT DISTRICT

SCALE

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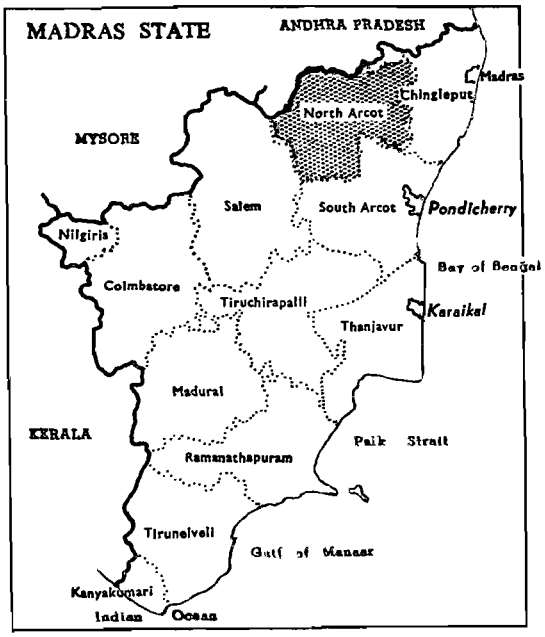
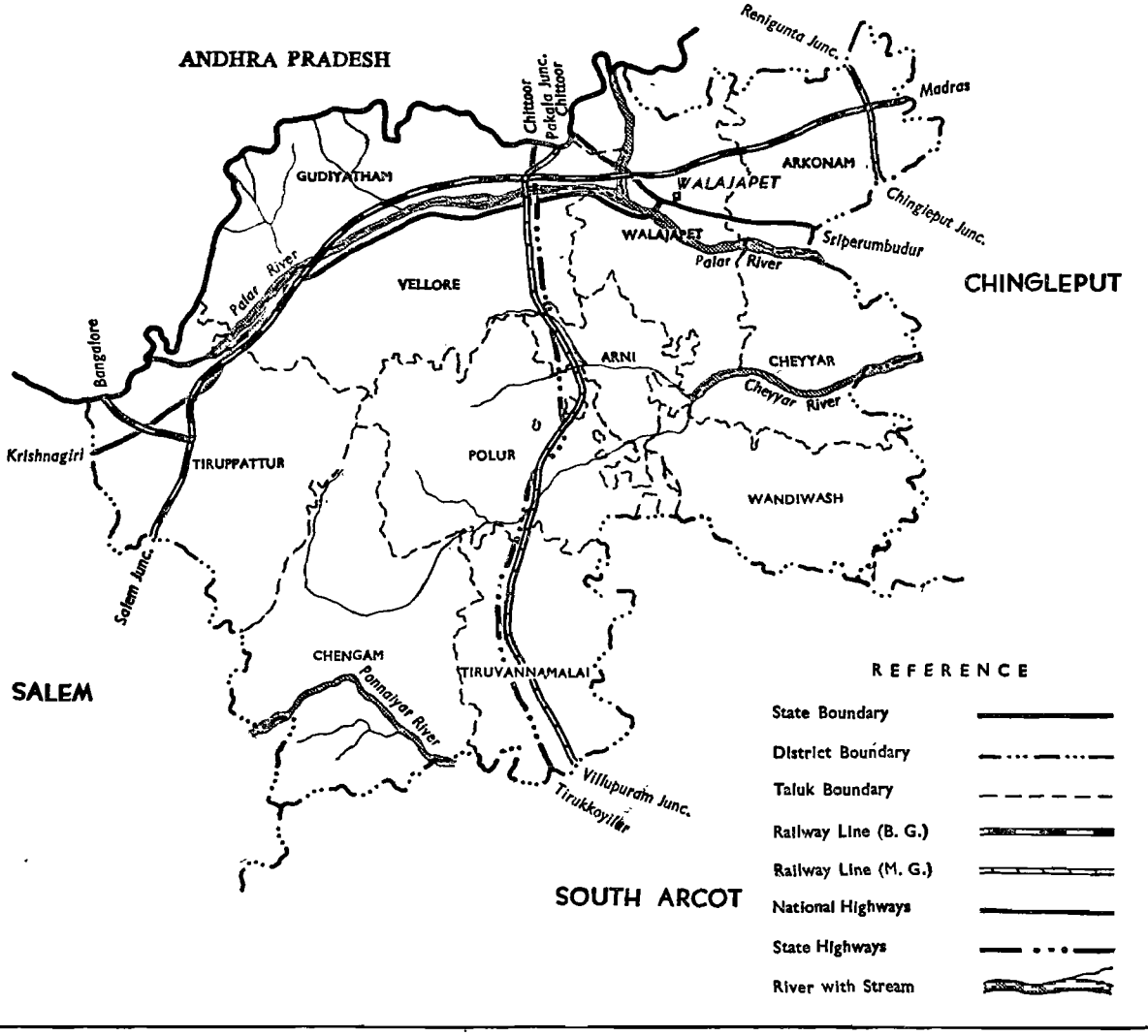




CONTENTS

		Page No.
Foreword	... ...	v –viii
Preface	... ...	ix – x
Chapter I :	Druggets	1 – 5
Chapter II :	Techniques of Production	6 – 18
Chapter III:	Economics of Production	19 - 23
Chapter IV:	Carpets	24 27

APPENDICES

		Page No.
1	Names of Factory-owners, Looms and Weavers before 1946 and in 1961...	28
2	Looms in the Factories and wages paid to the workers ...	29
3	Cost of production of ordinary druggets of various sizes ...	30
4	Cost of production of superfine druggets of various sizes ...	31
5	Carding Machine	32
6	Carding	33
7	Prices of colours	34
8	Prices of Dyes	35
9	Prices of Cotton Yarn	36
9a	Twisting	36
10	Main and subsidiary materials required for Drugget Weaving	37
11	Tools and Equipments	38-40
12	Waste of wool	41
12a	Names and addresses of wholesale dealers in raw wool at Vaniyambadi	41
13	Wages paid for different processes in weaving	42
14	Names of skilled weavers in Walajapet	43
15	Names of Factory owners of carpets, looms and weavers before 1946 & 1961	44
16	Measurement-wise distribution of pile carpet looms ...	45
17	Pile Carpets	45
18	Names of the Pile Carpet skilled weavers of Walajapet working at Chellaram Factory	46
19	A note on Sunhemp drugget and carpet weaving of Gopalasamudram ...	47-53
20	Annexures to the note	54-57

MAPS

1	Location map of Walajapet		Frontispiece
2	Map of Walajapet Town	Facing Page	2
3	Location map of Gopalasamudram		46

PHOTOGRAPHS

		Facing Page
1	Situation of Walajapet	2
2	The gigantic statues of 'Vamuni' and 'Semmuni'	
3	Lime Wool being soaked in the tannery at Vaniyambadi ...	6
4	Removing the wool from the hide	7
5	Pasting the fleshy side of the hide	6
6	Pulled wool being plucked by women workers	
7	Wool to be carded being filled in boras and stored in the tannery ...	7
8	Wool being loaded and transported to Walajapet in a lorry ...	
9	Cheap quality wool being lifted for loading on the nail drum carding machine	12
10	A woman spinner spinning yarn from carded wool ...	
11	Naildrum carding machine set in motion	13
12	Women spinners preparing woollen yarn into conical balls and winding it into hanks	12
13	Hanks of lime wool being taken to a drugget factory ...	13
14	Washing the hanks of wool in soap solution	14
15	Dyeing the rough quality wool	15
16	Dyed wool being dried in the open sun	14
17	Spreading cotton yarn of 10 counts on drawing wheels ...	
18	Cotton yarn of 10 counts being wound on parivattam ...	15
19	Twisting the thread on a charka	
20	Completed parivattams fixed to spindle stands of the cotton yarn spinning charka	14
21	Arranging the warp on the loom	15
22	Weavers taking seats on the side of the looms for weaving ...	14
23	Weaving of drugget in progress	15
24	Weaver standing and weaving	16
25	Woollen yarn being placed between the warp and beaten into position ...	17
26	Design of the drugget being seen at the back side	16
27	A closer view of two drugget designs	
28	Trimming the drugget	17
29	Fringes of druggets being bound	18

		Page No.
30	Druggets folded and piled	19
31	Weavers' children engaged in rope twisting	18
32	Children learning the art of twisting ropes	
33	Skilled drugget and carpet weavers of Walajapet	19
34	Factory of Kishinchand Chellaram	
35	A traditional floral carpet design	24
36	The Hashim-Khani design of carpet	

COLOUR PLATES

		Facing Page
1	A very popular and artistic drugget design of repute. (design No. 722)	x
2	,, ,, Carpet ,, ,, (Design No. 1116)	x
3	Drugget Design No. 222	22
4	Drugget Design No. 254	
5	Drugget Design No. 548	
6	Drugget Design No. 549	
7	Drugget Design No. 704	
8	Drugget Design No. 726	
9	Carpet Design No. 1114	44
10	A floral motif of Mirzapur	
11	Carpet Design (Nurjahan Khani)	
12	A floral motif with olive green colour	
13	Sunhemp Carpet Design No. 116	48
14	Some reputed Sunhemp Carpet Designs	

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 limitation 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 traditionl 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 veiw 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 Cooperative 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 coordination 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 design in which he operated, the fame 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 cooperative 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 artisans 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 specialised 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 cooperative 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 differentiation 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 shape, 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 Spetember 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 cooperative 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 cloth 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 urvey 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, patienty organised and executed under great strain and in disregard of health and comfort, for which I take this opportunity of expressing my appreciation and grateful thanks to my colleagues.

New Delhi

July 30, 1964

ASOK MITRA

Registrar General, India

PREFACE

Sri A. Mitra, Registrar General, India has, in his foreword, indicated how a study on handicrafts was planned as part of the 1961 Census on an All India basis. Against this back-gr ound, I will indicate briefly what has been done in Madras State.

In "Harijan" dated 10th November, 1946, Mahatma Gandhi wrote as follows:

> "The villagers should develop such a degree of skill that articles prepared by them should command a ready market outside. When the villages are fully developed, there will be no dearth of men with a high degree of skill and artistic talent. There will be village posts, village artists, village architects, linguists and research workers. In short, there will be nothing in life worth having which we will not have in village."

It has been the pride of India that her arts and artisans have been well-known throughout the world. It has also been the endeavour of the Government of India to preserve our crafts and raise the economic standard of the artisans through various measures initiated during the First and Second Five Year Plans. In a mixed economy, it is necessary to maintain a balance between industrial development and the development of our village crafts and industries. This volume is an attempt to study the conditions of handicrafts including village industries and craftsmen of Madras State, on statistical basis. It will also be our endeavour to examine how far the village of Gandhiji's concept is being maintained in India and to what extent the crafts could be sustained on a competitive basis, which in the long run will add variety and artistic value to the various products which this State can produce.

This study was undertaken at the instance of Sri Asok Mitra, Registar General, India. The relevant extracts of the letter written by him in 1960 are reproduced below :

"You will recall that we have introduced special questions on household industry in the household schedule and on establishment and workshops in the houselist in order to obtain a frame for all types of industries in the country. There was of course, a special request from the Ministry of Commerce and Industry in this regard, but from the census point of view, it is important to assess the magnitude of the household industries and small establishments, so that it can be related to livelihood of the population and 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. Census Organisation can well afford a comprehensive survey of a descriptive nature and I believe the Census really provides a unique opportunity for conducting such a survey."

This volume entitled 'Handicrafts and Artisans of Madras State' is the result of his letter. As the survey in this State was begun before the Social Studies Division was set up in New Delhi, it has not been possible for me to follow the questionnaire evolved on an All India basis. I have followed my own method of study. It was my intention to collect information on all the handicrafts practised in the State and build up tables for the State, district by district, and taluk by taluk. Some work was done in this direction. But the project had to be given up because of the difficulty involved in conveying a proper concept of handicrafts to different agencies filling in our schedules. So our attempt has been limited in preparing monographs on selected industries noted for their aristic appeal.

Detailed monographs on Silk-weaving of Kancheepuram, Palm-Leaf Products of Manapad and Nagore, Art-metal wares of Thanjavur, Fine Mats of Pattamadai, Icons in Stone and Metal

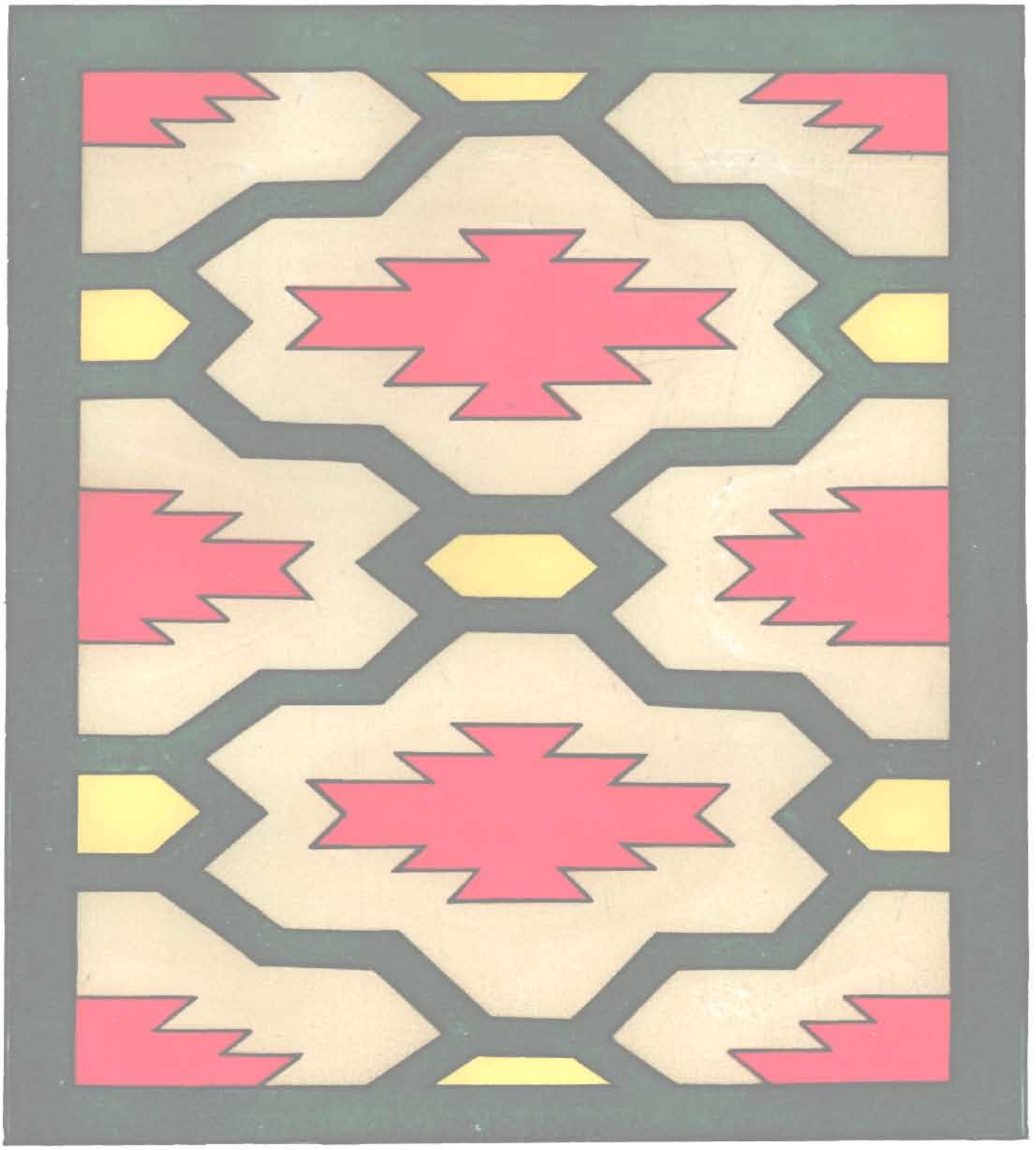
and Wood Carving of Madurai and Virudhunagar have been already published. The present volume is on "Woollen Druggets and Carpets of Walajapet". Monographs on the following have been prepared and will be issued in due course :

1. Glazed Pottery of Karigiri
2. Bell Metal and Brass Metal wares of Nachiarkoil

It is also hoped that during the intercensal period more monographs will be prepared on other handicrafts. This survey was rendered possible by the sympathetic attitude adopted by the Government of Madras who directed the Director of Industries and Commerce, the Registrar of Co-operative Societies, the Director of Information and Publicity and the Director of Harijan Welfare to extend their full co-operation to me in the study.

I am grateful to Messrs Janatha Printing and Publishing Co., Private Ltd., for having printed this volume in record time. I do hope that this volume will be of interest to the general readers.

P. K. NAMBIAR



A very popular and artistic drugget design of repute.

Design No. 722



A very popular and artistic carpet design of repute: Woollen Carpet Design No. 1116
(Elephant Khani)

CHAPTER I

DRUGGETS

Introduction

Druggets of Walajapet are coarse variety produced of cheap quality wool, the colours being dull and dim. The carpets are woven with a soft and fine quality of wool which needs more workmanship. Both are used as floor coverings. The process of making these two varieties does not vary much, but still there is a lot of distinction. A clear picture of the difference will be given in this report together with a short note on a scheme sponsored by the Industries Department of the Govt. of Madras to weave druggets and carpets out of Sun hemp fibre in Gopalasamudram. Regarding the introduction into India of woollen pile carpets, Sir George Birdwood says, "The manufacture of pile carpets was probably first introduced into India by the Saracens." However, Sri Rustam J. Mehta states that it must have been from Persia, from Kurdistan, Khorassam, Kirman that the Saracens themselves derived the art.† In support of the argument of Persian derivation of the craft, it has been pointed out that nearly all the patterns on them can be traced back to Persian originals. However, many like Sri Shanti Swarup have stated, "It was once believed that India learned carpet weaving from Persia. But the methods and designs of carpet weavers in our country are so peculiarly indigenous and so distinctly recognisable from those of other countries that this theory has now been abandoned.‡ The theory of native origin is also supported by the Hindu scriptures. The use of wool for weaving of cloth is said to date back to the Vedic era. The Rig Veda mentions: "The woollen strainer is placed on a vessel and fingers repeatedly stir the soma which sends down a sweet stream into the vessel." (IX. 66)

The manufacture of pile carpets reached a high degree of perfection during the reign of the Moghuls, Akbar having brought Persian weavers to the country. Under the royal patronage, the industry grew and flourished at least till the time of Shahjahan; even the lesser potentates of the different provinces maintaining carpet weavers and patronising their workmanship.§ In A. D. 1655, Terry wrote, "They (Indians) make likewise excellent carpets of their cotton wool in mingled colours, some of them three yards broad and of a great length. Some other rich carpets they make all of silk, so artificially mixed, that they lively represent those flowers and figures made in them."‡ Many and varied are the areas in India producing carpets — woollen, silk and cotton. The scope of this monograph is limited to woollen carpets and druggets and that too to Walajapet taluk of North Arcot district of Madras State.

"In South India, the chief carpet producing centres are Masulipatanam, Ellure or Ellore, Vellore, Walajapet, Bangalore, Warangal and Ayyampet in Tanjore district. Of these, woollen carpets were mostly made in Ellore, Vellore, Bangalore and Walajapet. Regarding the origin of the Ellore carpet which was quite famous in those days, it is stated that a number of Persians settled down there and passed on to their descendants the craft of the shuttle."† The weavers were mostly Mohammadans. However, the craftsmanship declined in spite of good quality wool being utilised with the result Henry T. Harris wrote, "The exhibits of carpets sent from Ellore were poor in conception, weave and colour. The patterns in use were poor and often modifications of cheap Wilton, Kidderminister and German powerloom designs. Some of the old patterns are still with the weavers; but unfortunately there is no trade demand for this fine class of goods. The old dyes are being forgotten and have given place to cheap anilines unskilfully applied. The warp of the rugs is cotton and the weft often of hemp or jute. The pile is of very inferior type consisting often of wool taken from dead sheep and treated with lime. The number of knots of the pile to the square inch is rather small and though the patterns are diverse both geometric and floral, they are not outstanding."§ In Vellore in the Central Jail, prisoners turn out some really fine woollen carpets. This has been recorded by Edgar Thurston in his monograph of the woollen Industry published in 1898. "Hyder Ali, Sultan

† Handicrafts and Industrial Arts of India, page 131

‡ Arts and Crafts of India and Pakistan, page 83.

§ Rustam J. Mehta : Handicrafts and Industrial arts of India, p. 132

‡ Arts and Crafts of India and Pakistan, page 83.

† Rustam J. Mehta, : Handicrafts and Industrial Arts of India, p. 134.

§ T. Harris: the Madras Industrial and Art Exhibition, 1903

of Mysore founded the carpet industry in Bangalore and brought skilled weavers from other parts of the country."‡ However, it is said that these carpets were inferior in quality. Sri R. J. Mehta has recorded that "druggets made in the South and especially in Bangalore are really inferior woollen pile carpets. Made from waste wool clippings and often of wool from dead sheep, they are naturally much cheaper. The designs, whether geometrical or floral, were modern."§

"South Indian carpets and rugs appear to suffer from want of feeling. The designs are seldom or never indigenous and what is borrowed is not understood. These craftsmen of the South may use the finest materials and put into their work the most minute care. Yet they fail to move us. There is something about the most insignificant saddlebag woven in the North that tell of the daily life of the maker. It seems to be part of him and his family. He bought the wool or grew it or otherwise acquired it. His womenfolk spun it and perhaps dyed it or he exchanged the good offices of some village dyer for some commodity brought along on his travels. Each time camp was struck, this little treasure of yarn was folded up in his bed and as regularly when camp was pitched, it was unrolled, the simple loom set up and he has added some more stitches to the work. Piece by piece it grew and as it developed, his delight in it increased and when it became big enough, it joined the family circle. The pattern was not much thought about. Perhaps, a richly coloured mihrab arching over a deep blue expanse. The wanderer's life and imperfectly understood parts playing as a feeble light in his mind from the far distant past, seemed to be woven into the little piece of work for those to read who can."†

"The Woollen industry of the Presidency resolves itself for all practical purposes into two main heads: (a) carpets and rugs (b) blankets. Of these, the extent of the industry and the fame of the former are on the decline." Thus, it is seen that even at the dawn of the 20th Century, the Carpet and Drugget industry in Madras had started to decline. Mr. Thurston further adds "there are at the present day as in the past, four chief seats of the industry — Ellore in Godavari district, Masulipatnam in Krishna district, Walajanagar in North Arcot district and Ayyampet in Tanjore district. Of these, Ellore and Walajapet are well-known for their woollen carpets. The manufacture of rugs is still carried on a small scale at Wallajah town in North Arcot district which was once celebrated for its woollen carpets. At the present day, there are only three carpet weaving establishments with 20 looms on which rugs are made by Mohammadans and Hindus for export to England. The price of rugs varies from Rs. 1/- to Rs. 7/- and the better quality of rugs only made to order. The rugs are consigned to M/s Leighton & Co., Madras. The so-called druggets from Wallajah are really rugs measuring $6' \times 3'$. They are known at home as "Bangalore rugs." They were originally made at Bangalore, but are now produced at Wallajah, Madras and other places. There are five qualities, but for export, the lowest or the worst quality is by far in the largest demand and the reason is that the ultimate buyers are the ten pound householder and the sea-side lodging house-keeper. I believe that the weavers adhere to the old patterns, but I tried to get them to give me as great a variety of colours as possible. As regards the dyes, the larger proportion is indigenous, the smaller is coal tar. There is one colour of the latter sort, i.e., magenta which the home market objects to altogether and the weavers make a very good substitute with Indian red. I should think that the annual export of these rugs amounted at the outside to Rs. 10,000 of which perhaps 2,000 came from Wallajah. Excepting a few for Australia, London takes the lot. Germany, to my knowledge, declines them altogether and there is no market for them in Paris. The trade has declined in consequence of large stipulative shipments being sent home and sold at prices considerably below cost. So long as London firms can buy on the spot for less than they would pay here in Madras, orders will be scarce and the weavers must either be idle or make for stock. I do not believe that the weavers can produce any better description of goods out of the material at their disposal which are nothing more than the wool and hair procured from tanneries."§ It is significant to note, as would be described in the following chapters, that conditions as described by Thurston before 1900 have not changed considerably since then to the present day.

"Excluding Vellore Jail, woollen carpets are only made to any extent in Wallajah and they are generally of poor quality though better and cheaper than those of Bangalore. The very best can, however, be made if ordered. The wool has to be got as far as from Gudiyatham (30 miles) or Palamaner (47 miles) where the Kurumbas sell it. It is first carded and spun into a

‡ Rustam J. Mehta: Handicrafts and Industrial Arts of India, p. 134

§ Handicrafts and Industrial Art of India, p. 136.

† F. H. Andrews: The Journal of Indian Arts and Industries Vol. II. 1905—06

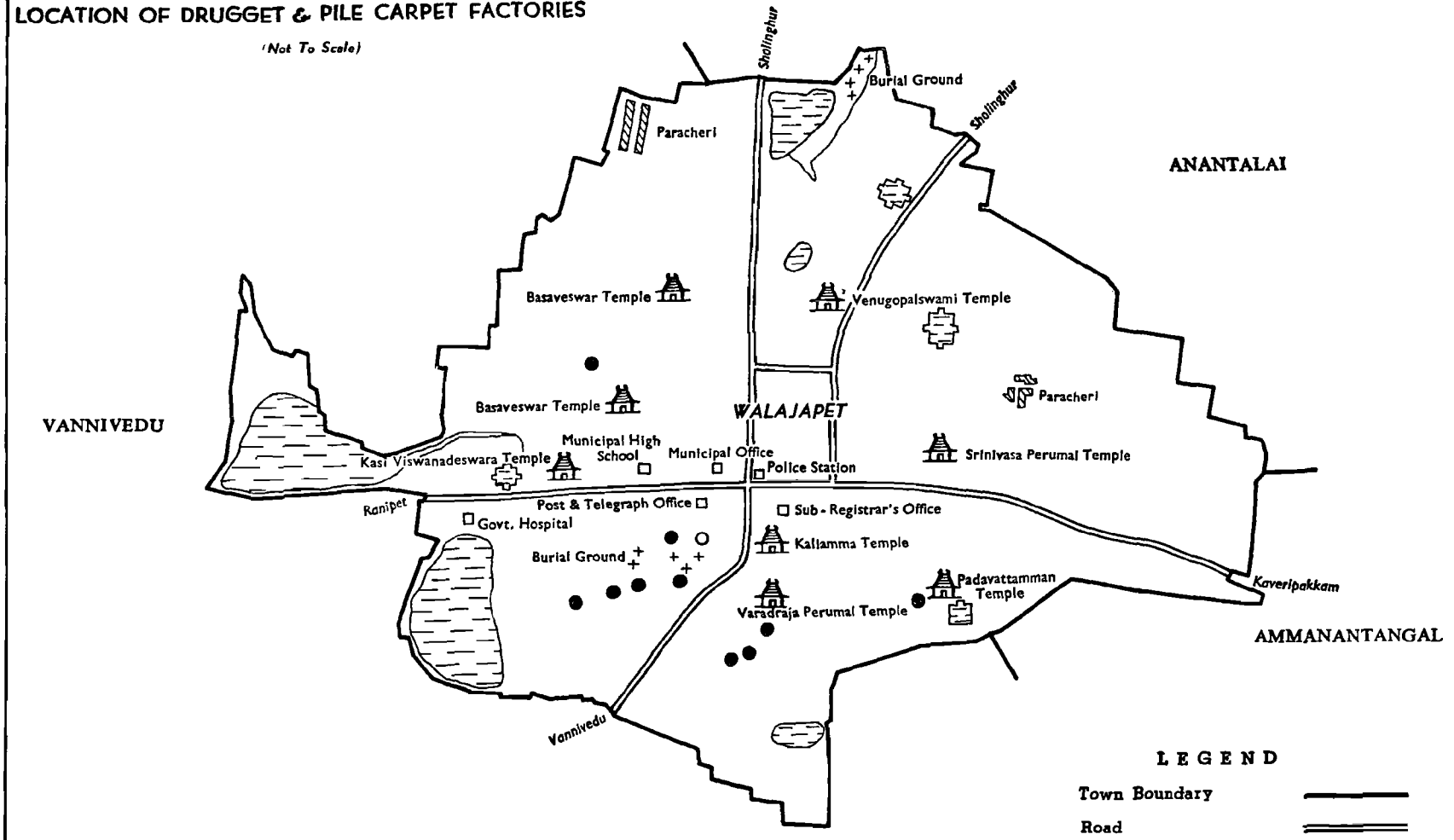
§ Edgar Thurston: The Woollen Fabric Industry of Madras Presidency, 1898.

WALAJAPET TOWN

SHOWING

LOCATION OF DRUGGET & PILE CARPET FACTORIES

(Not To Scale)





Walajapet is situated on the 68th mile on the National Highways between Madras and Bangalore.



This gigantic statues of "Vamuni and Semmuni" were built near the town of Walajapet as watch dogs to save it from any evil effects.

thick thread and then dyed in various colours. The carpet loom is arranged perpendicularly. The warp is of twine and the woof is of wool. To the twine are tied small pieces of coloured wool, between each thread to the wool and are cut by scissors so as to present an even surface. The expenses of wool are :

1 maund of wool	...	Rs. 1.75
Carriage	...	Rs. 1.75
Dyeing	...	Re. 1.00
		Rs. 4.50

This produces after two or three days a carpet of 6′ × 3′ worth Rs. 5/- to Rs. 6" *

The town of Walajapet with a present population of 13,171 is situated on the 68th mile on the national highway road between Madras and Bangalore. It stands on high ground and the general slope of the town is from north which is at an elevation of 573′ towards south where the Palar river flows at a distance of 1½ miles. It is the headquarters of a taluk bearing the same name in North Arcot district. It is also served by railway. In 1894, the population of this place was 10,485 of which 9,652 were Hindus and 833 Muslims. It is thus seen that in the last 67 years the population has increased by only 3,000. It is a well built, neatly arranged and clean town planned by a French Engineer. It covers an area of nearly a square mile and is cut into two almost equal portions by the trunk road from Madras. The streets are broad, well drained and are parallel at right angles to the trunk road and present a picture of cleanliness. Rayoji, the Prime Minister of Mohammed Ali is said to have founded it towards the close of the 18th Century and called it after the Nawab Walajah who was otherwise known as Nawab Mohammed Ali. Water supply is ample since there are a number of public wells all attributed to Rayoji who also for the convenience of merchants built 18 squares surrounding the town containing convenient shops with a small temple in the centre. In order to tempt merchants from other places, he is said to have exempted the traders of the new town from taxation which had the effect of importing rich merchants from Lalapet, a large trading centre, but which quickly became a straggling village even in the year 1894. "Weaving in silk and cotton, dyeing carpets, making and manufacture of oils chiefly employ the people of Wallajah town."** The satin clothes of Wallajah were excellent, but carpet weaving industry had been shaken by the introduction of aniline dyes. It is, therefore, probable that the weaving of woollen fabrics and carpets came into existence when the town was first founded. Local enquiries gave the information that Hyder Ali introduced the drugget and carpet industry at Bangalore and these woollen weavers migrated to Walajapet with the fall of Seringapatnam in 1799. Therefore, the carpets produced in Wallajah are generally known as "Bangalore carpets." It is, therefore, certain that the carpet weaving industry in Wallajah is as old as the town itself. It is stated that Hyder Ali while returning from the expedition in 1761 against Madras, forcibly brought about 25 families of weavers from Thanjavur district and converted them into Islam and established them in Seringapatnam by giving them lands and in order to encourage woollen weaving, exempted them from certain taxes. Thus silk and carpet weaving flourished in Bangalore till the fall of Seringapatnam. Most of these weavers fled from that place and moving in a north-eastern direction, came over to Walajapet and finding that there were a number of Muslims in the area, settled down in this town and took up the manufacture of druggets and pile carpets.

"In Wallajah woollen industry seems to have been started more than 150 years ago, the Nawabs of Carnatic having brought some weavers to the place."* In those days, a rough quality of drugget was prepared which is better known as "Bazarimal." This had its own market and was preferred for its oriental pattern, rich vegetable colours and relative cheapness. The native demand was confind to small druggets but larger druggets were made for European firms. The dyes used were indigenous and were prepared by the weavers themselves. However, pile carpets and better type of druggets were gradually introduced due to change in tastes. This also led to the substitution of vegetable dyes with aniline dyes which has been quoted as a reason for decline of carpet industry in Wallajah. From a commercial point of view, the industry was probably never a big one though, judged by the number of factories and idle looms, it would appear that in those days, the industry provided employment to many more people than it does in the present day. Now there are only 113 weavers with 58 looms, the latter varying in size from 3′ to 23′.

Some 50 years back, medium quality druggets were popularised by two Sowrashtras who migrated from Bangalore to Walajapet. In 1927, hearing about the drugget industry in Walajapet, a Sowrashtra youth named B. G. Balakrishnamoorthy, a famous drugget

* F. C. Cox: North Arcot District Manual, 1881. page 343

** F.C. COX. ibid p. 175

* Sri Narayana Rao : *The Survey of Cottage Industries, 1929*

and carpet manufacturer of pre-war period, who is still alive, migrated from Bangalore and settled down at Walajapet. When he came to the town, there were only 50 people engaged in the manufacture of druggets. With his enthusiasm, he persuaded the weavers and spinners to take up the craft of carpet weaving by providing them with charkas (spinning wheels) and Thakklis (Spindles) free of cost. He also fixed up a carding machine and secured a foreign market through M/s. Beharilal Rattanchand at Amritsar and M/s. Bombay Co., at Madras. Because of increasing business and facilities for the carding of wool, the conditions of weavers were bright during the years 1930–38. But the Second World War intervened. When peace was declared, the industry never recovered on account of high cost of the dyes, rising wages and the impact of Factory Acts. Before the advent of the Saurashtras in Walajapet, this industry was the monopoly of Muslim weavers; but now the Naickers have also moved in. During the survey, it was found that 48 Naicker families were engaged in drugget weaving and 28 in the manufacture of pile carpets. There were only 30 Muslim families engaged in the manufacture of druggets and 4 in pile carpets. Only 3 Saurashtra families were engaged in drugget weaving.

Brief History of the Craft

The main raw material being wool, the industry was established in this area because of the availability of wool which could be obtained from the tanneries round about Wallajah. Breeding of sheep is a lucrative profession in Ambur (48 miles) Vaniyambadi (59 miles) Ranipet (3 miles) and other areas of Tiruppatur (73 miles) and Gudiyatham (30 miles) taluks of North Arcot district. The industry was kept alive, thanks to the Muslim weavers who were forced to migrate to Seringapattam by Hyder Ali, and subsequently settled down at Wallajah and the Naicker Hindus of the area who received training in the craft from the Muslim weavers. At the dawn of the 20th Century, the weavers were unable to obtain adequate supplies of wool, nor did there exist any system of grading of the raw material. Live wool was not used nor had the weavers heard about it. Using live wool for weaving carpets was a monopoly of the North, i.e., at Agra, Banares and Kashmir. The Muslim weavers of the area generally used plucked wool or lime wool obtainable at cheap rates from the tanneries. This raw material possessed unevenness of fibre, there was inordinate waste during carding operations and this diminished the value of the wool. The staple length of the fibre also varied to a considerable extent. Hence only low quality rugs known in the local patois as Bazarimal was produced. Changes in taste and the migration of weavers at the beginning of the 19th Century from Bangalore led to the manufacture of other kinds of druggets. Foreign demand created a shift in production and more and more weavers switched over to the manufacture of carpets. In the manufacture of carpets, floral designs as well as artistic and ornamental motifs were utilised whereas in drugget weaving, only geometrical lines with floral borders were in vogue. According to B. G. Balakrishnamoorthy, another landmark in the history of this craft was the migration of the two Sowrashtras from Bangalore—Bhadra Iyer in 1901 and his relative B. V. Varatha Iyer in 1913. These two systematically introduced new techniques in the manufacture of pile carpets as well as in druggets. Before their advent, an inferior sort of drugget known as Bontha was being manufactured. Walajapet from the beginning of the 19th Century had a reputation of its own in producing rough quality of carpets known as "Bontha". It had its own market and was universally admired for its beautiful oriental pattern. The dyes were local and prepared by the weavers themselves. This Bontha is prepared out of dead wool dipped in cold water, the colours are not fast as it does not require good and fast colours. It could be dyed in vegetable dyes. The Industry was given a new life by Sri B. G. Balakrishnamoorthy who arrived in town in 1927. In addition to distributing free tools and thaklis, he also graded the wool, fixed the standard on quality, colour and strength, into six categories in the following order :—

Superfine
Super
Regular
Standard
Medium
Brown

In those days, the spinners were twisting wool with the help of crude thaklis. The raw wool was wound into what are known as Punis or coils suitable for winding on the left wrist. The end of the puni—which is akin to the term skein used for cotton—was fastened to the end of the axis or dherna by inserting it into the small eye of the axis. The axis or Dherna was then spun by hand and raised slowly upwards till the wool was vertically suspended in the air. The right hand of the spinner kept up the rotary motion, the left hand supplied the wool from the punis. When the twisted wool reached a length sufficient for winding, the rotary motion was stopped and the length of the woollen yarn so spun, wound on a country bobbin. This method was time consuming and many women could not participate in it. Some women also adopted a crude

form of twisting the wool on their thighs. In 1930, B. G. Balakrishnamoorthy introduced the charka and spinners were trained to use it. This increased the number of spinners and by thus augmenting the supply of woollen yarn, it looked as if the industry would again flourish. However, the war intervened in 1939 and consequently the industry slowly deteriorated with the result that from about 440 weavers engaged in the craft before the war only 113 weavers are left. The rest have taken to agriculture, trade and other occupations. Our local enquiry indicates the shift in occupation betwen 1939 and 1961 as follows :-

	Before 1939	1961
Male weavers	440	113
Women spinners	500	300
Number of looms	180	58
Number of factories	11	7

From these figures, it is apparent that the employment potential of the industry has declined considerably.

Another innovation of Balakrishnamoorthy related to the introduction of the carding machine. Prior to this, people were specially trained in teasing the wool with the help of a wool cleaner. This mechanical contrivance was shaped in the form of a bow, the strings of which were of cat-gut or some strong fibre. The bow was held in the left hand with the string partially buried in a heap of wool. The string was then made to vibrate by plucking with the help of a plecturm or a piece of wood. This cleaner was known locally as "dhunia". In 1930, carding machine was introduced by B. G. Balakrishnamoorthy and other two owners of the factory. Originally man power was utilised to run it and in 1932, an oil engine was substituted to run the machine. But in 1935, electricity was used to run the machine. No factory acts or labour acts were in force. Children could also work side by side along with their parents in the factories. Disputes were amicably settled through middlemen. One of the reasons attributed to the decline of the craft by those whom we interviewed was the introduction of the various Factory Acts and Labour Acts restricting the number of hours during which the weavers could weave and prohibiting the employment of children.

CHAPTER II

TECHNIQUES OF PRODUCTION

Wool

The raw materials required for the manufacture of druggets are wool and 10 counts cotton yarn. Jute yarn is used for carpets. The raw wool is purchased from the tanneries at Vaniyambadi (59 miles) and Ambur (48 miles). There are about 40 tanneries within a radius of three miles in and around Vaniyambadi. Ambur has a larger number of tanneries which exceed a hundred. These tanneries get their sheep hides from Assam, Vijayawada, Delhi, Cuttack and the surrounding areas of North Arcot district. The Purchasers of the wool get their requirements from these tanneries. The best season for the purchase of wool are the months of March and October. Two types of wool are available-pulled wool and lime wool. There is yet a third variety known as mixed wool which is a combination of the first two. All these types are utilised in the manufacture of druggets. Among them the inferior wool is lime wool. Wool of superior quality is pulled or plucked and does not contain lime. The prices vary according to colour—the lighter the shade, the higher the price. The present rates as furnished by R. Nandalal & Co., Vaniyambadi are as follows:

Des-cription	Lime wool		Pulled wool	
	For 500 lbs Rs	Per lb Rs Ps	For 500 lbs Rs	Per lb Rs Ps
Dark	130	0.26	200	0.40
Grey	185	0.36	500	1.00
Rose	385	0.77	750	1.50
White	680	1.36	950	1.90

The other factories at Walajapet who have their limited business purchase lime wool from Vaniyambadi, Ambur and Ranipet at much lower rates ranging from 12 nP. to 25 nP. per lb. for dark wool and 55 nP. per lb. for lighter shades.

Usually the skin of red sheep is soaked in the tanneries at Vaniyambadi in lime water mixed with some sodium sulphate for 5 to 8 days. Then the wool is removed from the hide by a big size knife. For the extraction of pulled wool the skins are washed in plain water once or twice to remove dust and impurities. Then on the fleshy part of the hide, lime and sodium sulphate is applied at the rate of 1 lb. for 100 skins and allowed to remain for 6 to 8 hours. The skins are then taken and the wool pulled out without difficulty. The skins of sheep purchased from Andhra, Madurai and Ramanathapuram can only be treated by the lime process. If the length of wool is very short it cannot be pulled by hand as it is rooted strongly in the hide. This is of an inferior quality. The skins which come from the sheep bred in Northern India are of much better quality and the wool can be plucked. Lighter coloured wool, being costly is utilised for the better quality druggets and carpets whereas lime wool and darker colours of wool are utilised for the manufacture of low grade druggets. Since long staple fibre is to be utilised, the wool which is extracted from the back, belly and neck of the animal is utilised for superior drugget and carpet weaving. The length of the fibre varies from 3" to 4". There are only five or six wholesale purchasing agents at Vaniyambadi who directly purchase the raw wool from the various tanneries and in turn sell them to the drugget manufacturers. The remainder of the wool is exported to foreign countries.

Cotton Yarn

Cotton yarn is purchased from Binny & Co., Madras at the following rates:

Cotton yarn of 10 lbs.—Rs. 17 to 18 per lb. Some amount of yarn is also purchased from Bangalore and Coimbatore. The owners of the factories place orders directly with the mills and receive the consignment. A few weavers, however, are more prudent and purchase smaller quantities locally.

Dyes

Proper dyeing is important in the manufacture of good quality druggets. In earlier days, master dyers were employed in each factory. But with the decline of the industry, they have been replaced and there is only one master dyer employed by the largest factory in Walajapet, viz. M/s Kishinchand Chellaram & Co. The prices of dyes have increased and in order to lower the cost of production, dyes are being adulterated and this in turn has led to the fall in the standard of products. Many writers have expressed the view that the substitution of aniline and chemical dyes for vegetable dyes has led to the decline of this craft. The present day weavers are unable to explain what type of vegetable dyes were in use in those days. As far as



The cheap quality wool viz the lime wool is soaked in the tannery at Vaniyambadi.

Note the worker removing the cheap quality hide from the lime pit.



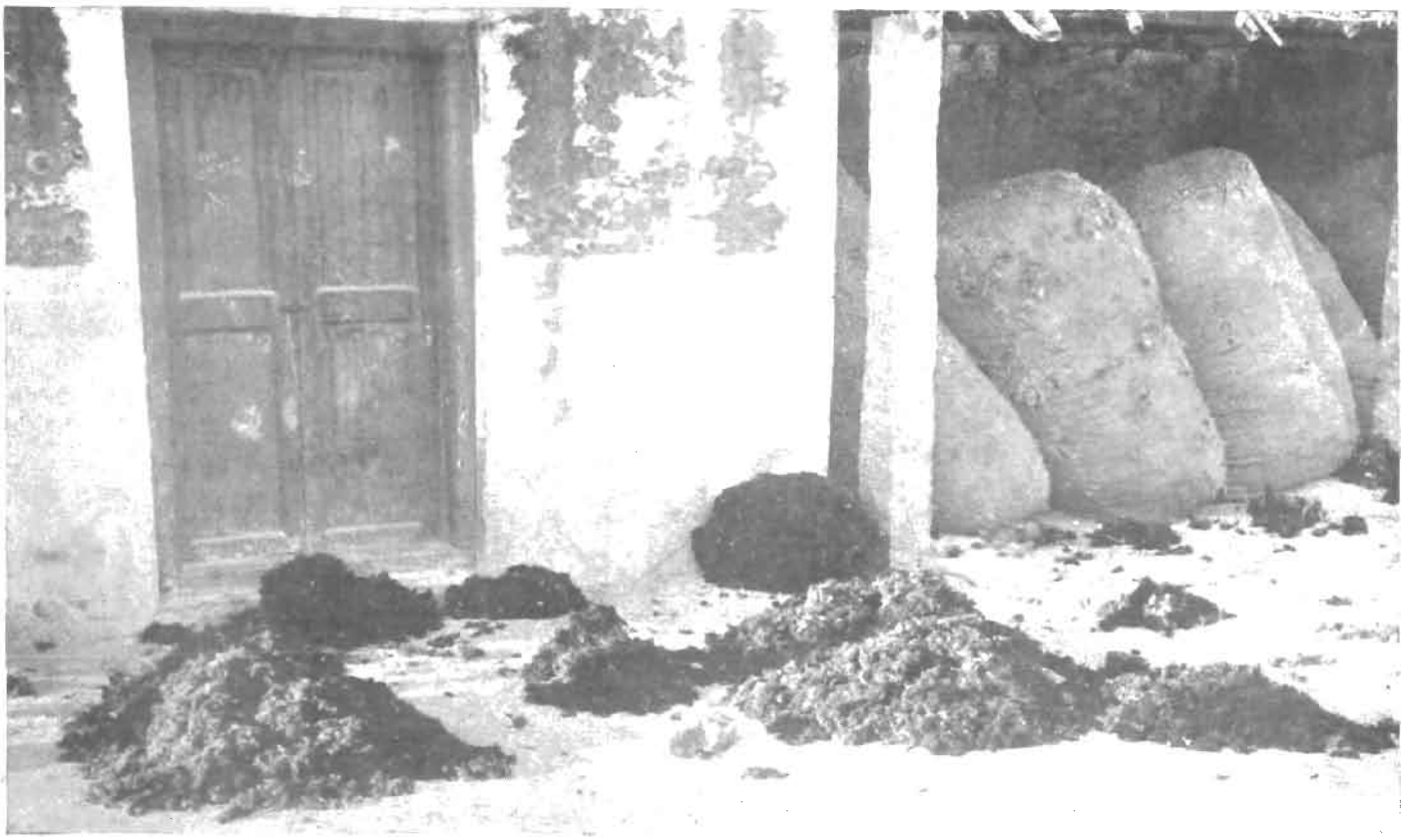
Placing the lime soaked skin on a vertical wooden plank, the worker wearing gloves to protect his hands from lime is busy removing the wool from the hide with a peculiar type of knife.



The person at the right is holding a piece of cloth, in a tannery at Vaniyambadi, where there is paste prepared of sodium sulphate in a pit which is seen partially at the right corner and the person at the left is pasting the fleshy side of the hide.



In the tannery at Vaniyambadi the pulled wool is being plucked by women workers without any difficulty.



The wool to be carded at Walajapet is filled in gunny bags known as boras and stored in the tannery at Vaniyambadi.



20 boras or 5,500 lbs. of wool is loaded at a time in a lorry and it is about to start for its destination from Vaniyambadi to Walajapet.

they can remember, only chemical dyes have been used. The popular colours used in the manufacture of carpets and druggets are green, red, blue, brown and yellow. The following Table indicates the increase in the price of dyes between 1939 and 1961.

Weight	Name of the colour	Prices in 1939	Prices in 1961
		Rs. nP.	Rs. nP.
1 lb.	Green	1.25	25.00
1 lb.	Red	1.00	20.00
1 lb.	Brown	0.35	7.00
1 lb.	Yellow	0.80	16.00

From this it is apparent that green is the costliest colour and brown the cheapest. Appendix 8 will indicate to the readers the prices of colours and the amount of dyes required for each size of drugget manufactured. These dyes are purchased from the following Companies in Madras City.

South Indian Dyes Co.
Imperial Chemical Industries Ltd.
Jeevandas Lalgee & Sons

For ensuring fast colours, chemicals such as Glauber's salt, sulphuric acid and acetic acid are mixed with the dyes.

The Loom

The size of the loom varies from 3′ in breadth to 23′. There is no specific height for the loom in any factory. It is to be noted that there is no limit for the drugget or carpet to be woven. When the drugget reaches a height of 5 feet the work is temporarily stopped, it is trimmed and again rolled up on the wooden roller and the weaver continues his work till the carpet reaches the required length. All the seven factories in existence in Walajapet have looms between 3′—9′. But a few have looms extending upto 15′. The following Table indicates the names of the factory owners, the size of the looms and the total number of looms in each factory.

Sl. No.	Name of the factory owner	Looms in 3′	4′	5′	6′	7′	9′	10′	12′	15′	16′	20′	23′	Total	Establishment of the factory
1.	K. A. Wahid						4		4			2		10	1912
2.	Hameed Khan	2			3		1			2				8	1951
3.	Kanniah Chetty	1					1		2					4	1954
4.	K. Ganesh Naicker	1					1							2	1941
5.	M. Gopal	1	1				5							7	1959
6.	S. Sokkaiah				2		1		1					4	1950
7.	Meher Unissa						1							1	1958
8.	P. R. Perumalaiah				1			1						2	1961
9.	S. Rajaiah & Sons				1		2	2	1	1	1			8	1942
10.	Kishinchand Chellaram	1	7	5	3	2	6	2	3		1		2	32	1935
Total looms in the sizes mentioned above		**6**	**8**	**5**	**10**	**2**	**22**	**5**	**11**	**3**	**2**	**2**	**2**	**78**	

It is apparent that looms of 9′ breadth are very popular at Walajapet as there is large scale demand for druggets of size 9′ x 12′ and these looms could also be utilised for the manufacture of the normal variety of druggets of size 3′ x 6′. Generally one person will be sufficient to weave a drugget of 3′, 2 persons for 6′ and 3 persons for 9′-12′. Thus to produce a drugget of 9′ breadth, 3 persons have to weave. But herein lies a snag—all the three of them must possess weaving skill of the same order and should work in unison. If any one slackens in pace, the others have to stop until he catches up with them. In the absence of one of them, the other two cannot continue to work without a substitute. This causes unnecessary delay. The looms are the same for drugget as for pile carpet weaving. The cost of looms of different sizes is as follows :

Loom	Value Rs.
3′ × 6′	50/-
6′ × 9′	150/-
9′ × 15′	300/-
15′ × 20′	500/-
21′ × 40′	800/-

The following are the parts of a woollen loom.

Wooden Roller or "Thoor":

The size of the wooden roller depends on the size of the loom and the drugget to be woven on it. It is on this roller that the threads are fixed and by turning the roller, the threads are straightened and this imparts the right amount of tautness to the warp. The wooden roller also acts the part of the cloth beam of the throw shuttle in that it helps the weavers to roll the finished drugget.

Bamboos:

For the construction of the loom, 13 bamboos of 13′ in length are required. These bamboos form part of the frame of the loom as well as its support.

Vadicole:

This is also constructed of bamboo. Each loom consists of two Vadicoles. It helps to give the necessary Ani or cross for the weft to pass through.

Jog Kambi:

This is also of bamboo and is utilised to hold the vadicole with the support of the Alluvarai.

Alluvarai:

The warp goes beyond Alluvarai and is fixed to the bamboo frame.

Iron rod:

This iron rod is better known among weavers as Inda Kambi. It is attached to the wooden roller or Thoor and tied with ropes at both ends. This takes the place of the reed in the cotton loom. It helps the weavers to calculate the number of knots of the warp. The warp will be fixed to the iron rod. It also supports the wooden roller and the warp thread.

Punch cole:

This is made of wood and is $1\frac{1}{2}$′ in length. This provides the necessary Ani or cross into which gap the weft is passed. After passing of the weft, the punch cole is pulled, the thread is pressed into position, the necessary Ani or shedding is once again provided and another gap is created for the weft to pass in. Normally two punch coles are required for weaving a drugget of 3′ x 6′. As the size increases, the number of punch coles also increases.

Stone Brackets:

Two stone brackets are necessary for each loom. These are known as Modaikal and are of rectangular shape to hold the wooden roller. These stones are fixed at a depth of 2′ below the ground level.

Coir Ropes:

They are used for knotting the wooden bamboos, vadicole and tightening rods.

Tightening Rods:

Two rods made of wood are required. They are used to tighten up the warp thread as well as the wooden roller of the loom.

Vadi Dharam:

This is made of cotton yarn and is attached to the vadicoles.

Wooden Plate:

This is made of wood and is utilised by the weavers to sit on while weaving and as a plank to place some of the tools to be utilised while weaving.

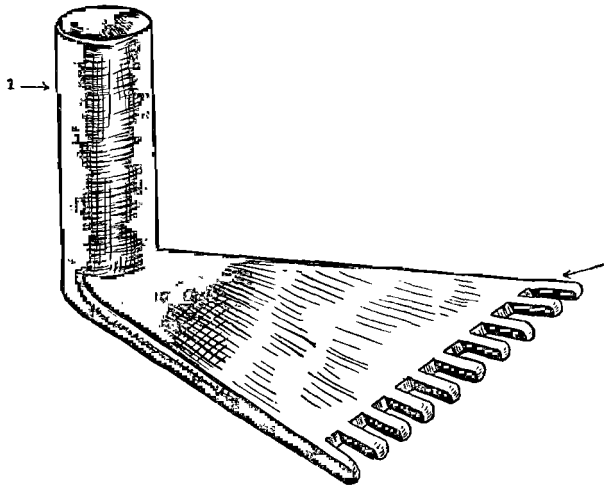
Weighting Stone:

With the help of this stone, the warp thread is separated from the alluvarai at the back of the warp. Un ess this is done, two warp threads will get tangled up during the actual weaving.

The other important tools utilised while weaving are as follows.

Beating tool or Hatta:

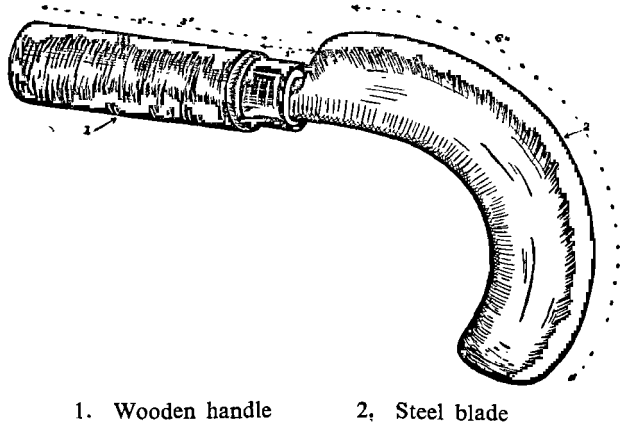
This is an iron implement made locally by blacksmiths of Walajapet. This is an important tool utilised in the weaving of druggets. The knots and the weft are driven by repeated beating with the help of the hatta which is held firmly in both hands. This is also known as the iron comb. The advantage of this iron comb is that it is heavy and its weight helps to press down firmly the weft.



1. Handle 2. Hatta

Knife:

This is made of iron with a wooden handle and is manufactured by the local blacksmiths. This is used for cutting the thread of the warp and also for giving final touches to the drugget.



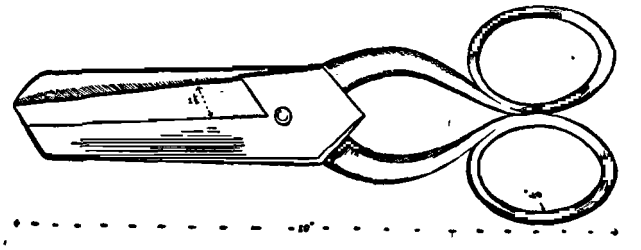
1. Wooden handle 2, Steel blade

Scale:

This is made either of wood or iron and is utilised to measure the size of the drugget.

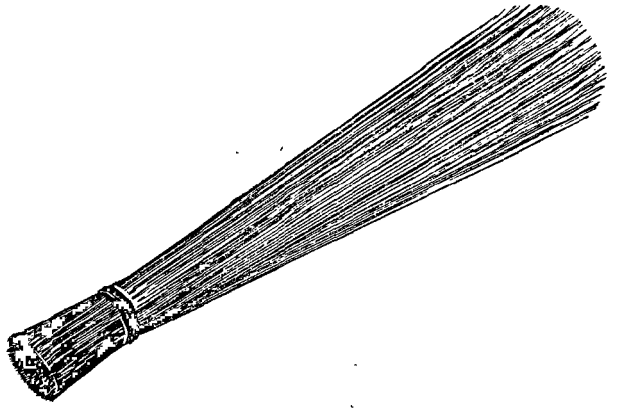
Scissors:

This is made of iron and is purchased either from Arcot or from Vellore. This is used to cut the fringes of the wool and to even the surface of the drugget.



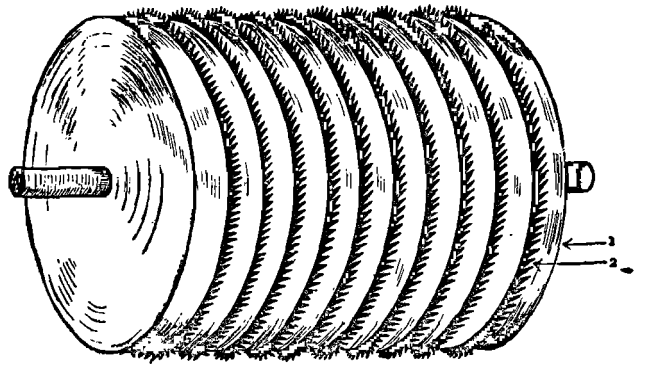
Broom Sticks:

These are locally available and are used to remove dirt and small pieces of cotton and woollen yarn adhering to the surface of the drugget. Details about the size of tools and their cost are available in Appendix 11.



Carding Machine:

This is also known as the teasing machine. There are two types. One is the nail type and the other is the saw blade type. This consists of a wooden drum which is rotated at high speed having either nails or



1. Carding roller 2. Saw blade

sharp knife edges on the outer surface of the revolving drum. The nail drum machine costs Rs. 1,600/- and the saw blade machine costs Rs. 2,200/-. To fix up a carding machine, an artisan must possess nearly Rs. 9,000/- as indicated in the statement below :

		Rs.
Motor cost 5 H. P.	...	900/-
Starter (one)	...	125/-
Cut outs (three)	...	10/-
Switches (two)	...	50/-
Wiring charges	...	100/-
Belts	...	150/-
Beds	...	100/-
Counter shaft	...	350/-
Total	...	1,785/-
Building cost	...	3,000/-
		4,785/-
Cost of both the machines		3,800/-
Total cost	...	8,585/-

Four carding machines were fixed before the Second World War. No additions were made afterwards because of the decline of this industry and it was found unremunerative to add more carding machines.

MANUFACTURING PROCESS

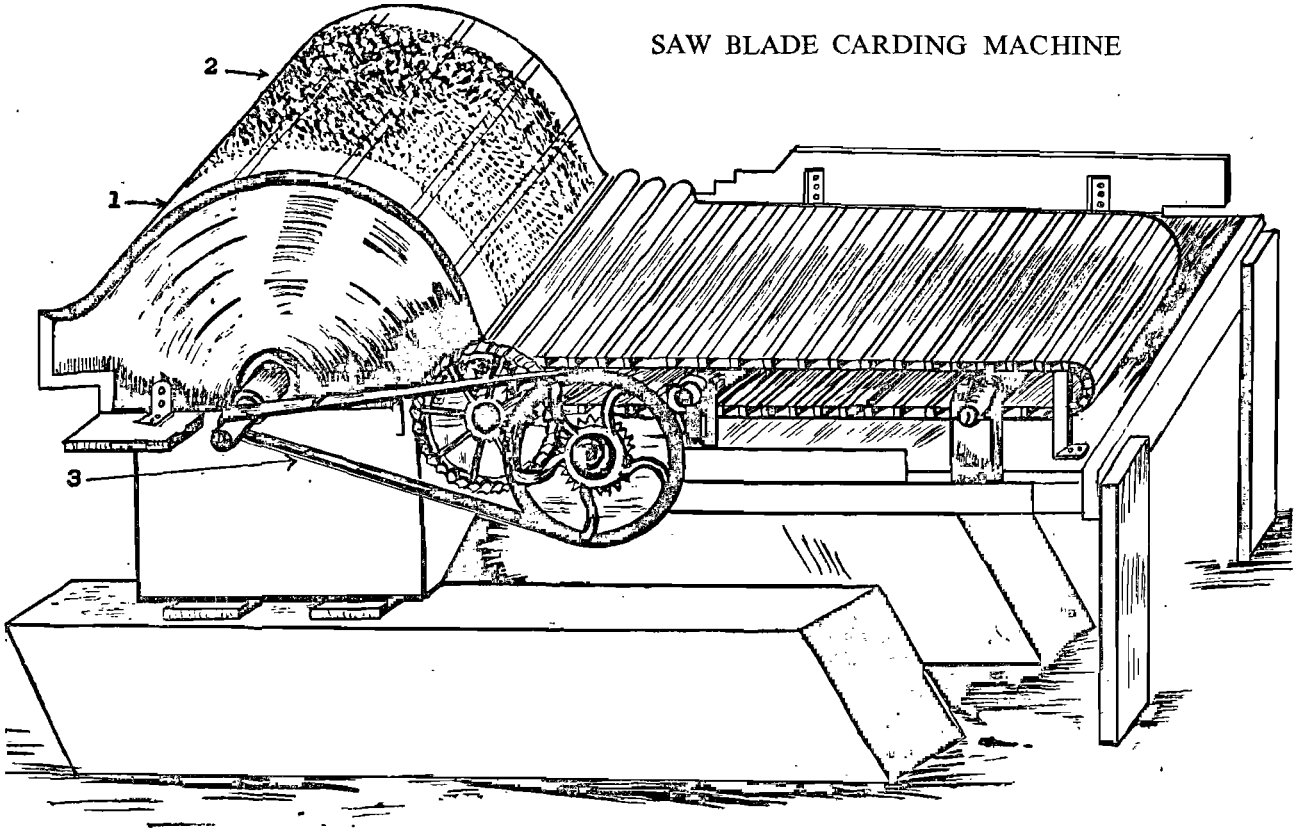
STAGE I

Purchase of wool

As explained earlier, pulled wool and lime wool are used for the manufacture of druggets. For low quality drugget, lime wool is used and for superior quality druggets, pulled or plucked wool is added to lime wool and the mixed wool utilised. A very poor quality known as third grade wool which is the mixture of black and brown and costing only Rs. 120/- per candy* is used for the manufacture of the drugget known as 'Bazarimal'. Factory owners purchase wool from Vaniyambadi. In the following photographs the process of plucking wool from hides is described. This process is followed in Vaniyambadi. One bora normally weighs between 250 and 300 lbs. 20 boras or 5500 lbs. can be loaded at a time in a lorry. The charges for bringing wool from Vaniyambadi to Walajapet amounts to Rs. 70/- and has to be paid by the person who purchases it. Sometimes petty dealers do not require the full lorry load and so they pay Rs. 3.50 per bora as transport charges.

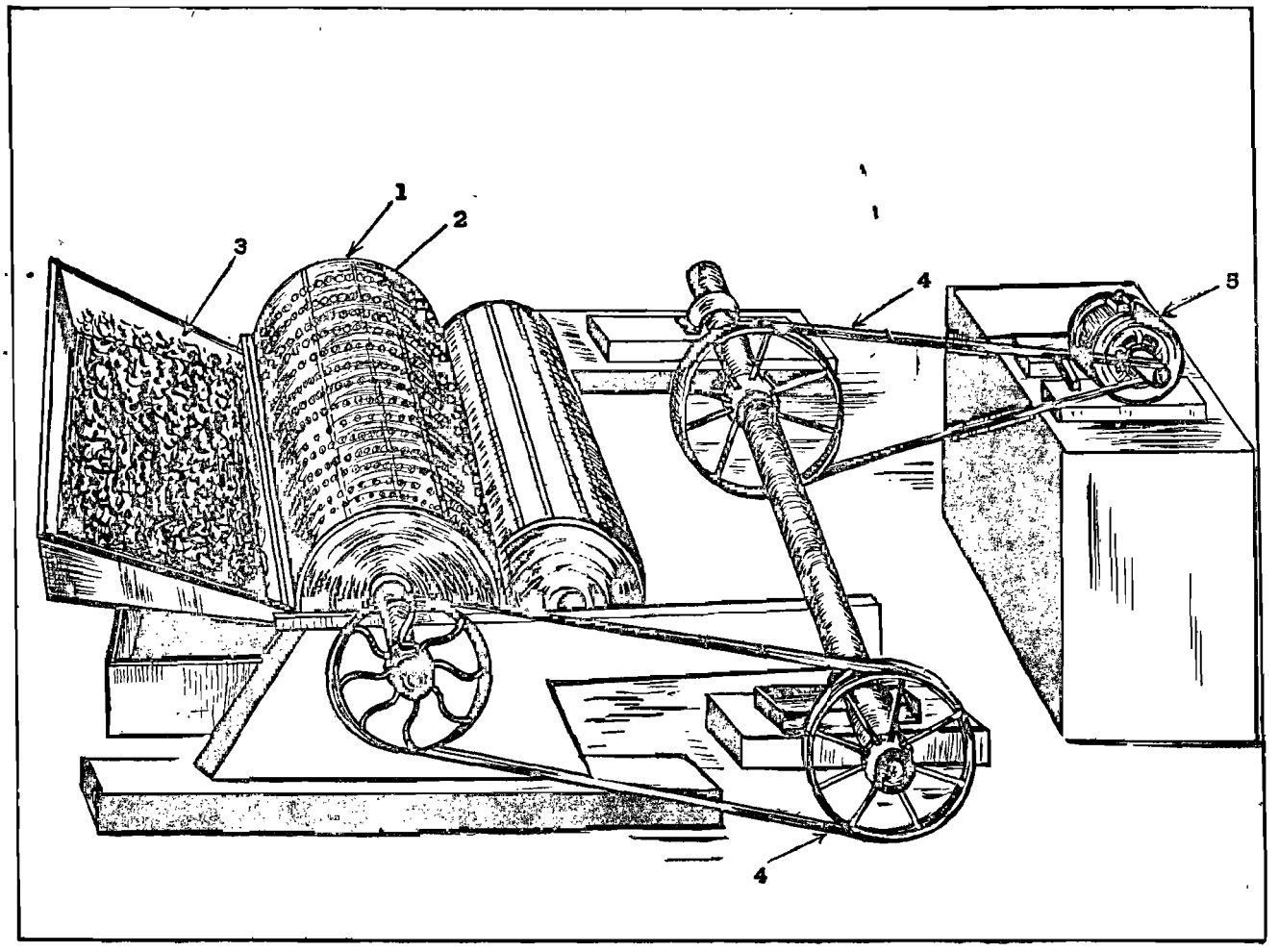
* 1 candy = 500 lbs.

SAW BLADE CARDING MACHINE



1. Carding roller 2. Saw blade 3. Belts

NAIL SYSTEM CARDING MACHINE



1. Carding roller 2. Nails 3. Wool 4. Belts 5. Motor

STAGE II

Carding

Several preparatory processes have to be carried out before commencing weaving. The wool as brought in its original state contains oil, dried perspiration, dirt and other impurities which have to be removed before the wool can be twisted. The wool, at the outset, enters the carding machine which loosens the mass of wool and separates each fibre. This carding machine is set up in an open space 24′×60′. It has to be protected from nature. The wool purchased in boras is handed over by the owners of factories to the owners of the carding machines. Different rates are charged for carding or teasing the three varieties of wool. Pulled or plucked wool which is of superior quality is teased in the saw blade carding machine. In about 8 hours, 225 lbs. of pulled wool can be teased. But it has to make three trips to this machine before it can be deemed to be thoroughly cleaned and teased. On the first trip, the wool occupies 2 hours in the carding machine, on its second trip, it remains for 2½ hours and on its third and final trip, it remains for 3 hours. The charges for carding the pulled wool is 50 nP. per stone weight of 7 lbs. Lime wool which is of very low quality and emits foul smell contains little grease and a lot of lime and consequently takes a shorter time to be teased. Lime wool is opened in the nail drum carding machine. 920 lbs. of lime wool can be opened in 7 hours with only two trips to the machine. The first trip lasts for 2 hours and the second trip for 5 hours. The charges for carding one stone weight of lime wool is 18 nP. 600 lbs. of mixed wool can be carded in 8 hours in 3 trips, the first trip lasting 2 hours, the second 3 hours and the third and final trip a further 3 hours. The charges for carding are 25 nP. per stone weight. Mixed wool can be carded in both types of carding machine.

Carding of wool is an important process in the manufacture of druggets as well as pile carpets. When the lorry filled to the brim with boras of wool arrives at Walajapet from Vaniambadi, they are unloaded and piled in a corner of the factory and then sent to the workshop where the carding machine has been installed. The Supervisor in charge of the carding machine along with two women workers undertake this work. The wool which is to be carded is taken by one of the women workers in her hands and placed on the wooden rolling blades of the machine. The drum is set in motion and the wool coming into contact with the blade is split up into individual strand. This wool is then thoroughly teased by the constant rotary motion of the drum with the blades until finally all strands are separated. The total weight of the wool after it is removed from the carding machine will be less than what it was before. The women workers, after the carding machine is set into motion, constantly stir up the wool with long bamboo poles in such a way that every lump of wool is thoroughly teased. After all the trips to the carding machine have been completed, the wool is weighed to assess its loss during the process of carding. The wastage will be as follows :

Lime wool	25%
Pulled wool	12%
Mixed wool	18%

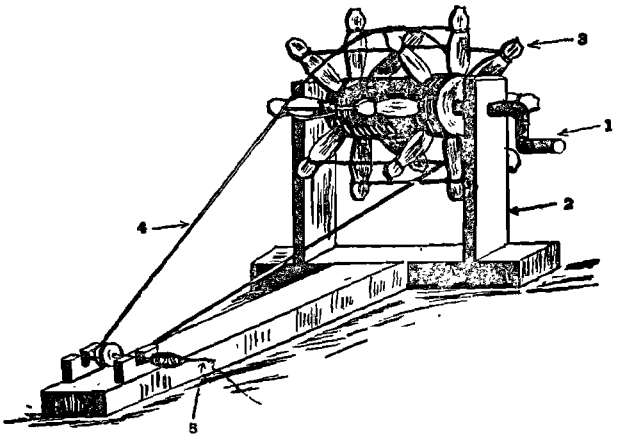
The raw wool will be measured in the presence of a representative of the owner and heaped in a corner of the shed.

STAGE III

Spinning

Spinning is done only by womenfolk who number about 300 and are found scattered all over Walajapet town. Of these, 225 are Naicker women working in their own houses and 75 are Muslims. The carded wool is twisted on a spinning wheel known as the charka of measurements $4' \times 2\frac{1}{2}' \times 3'$ ($l \times b \times h$). The charka consists of a horizontal spindle made to rotate by means of a driving wheel. The driving wheel consists of two skeleton discs, the spokes of which are made of wood, the thread circling the extremities of the spokes. The discs are parallel to one another set apart at a distance of 4". They are connected by threads joining the extreme ends of the opposite spokes. The wheel thus forms a sort of drum which is connected to the spindle of 1' length, 3" of which is fixed to the wooden plates attached by a driving belt of thread. The woman spinner has a heap of wool by her side and squatting comfortably, sets the wheel in motion by rotating the wheel. She then takes a handful of wool and attaches

WOOL SPINNING CHARKA



1. Iron handle 2. Wooden stand 3. Charka
4. Belt 5. Spindle

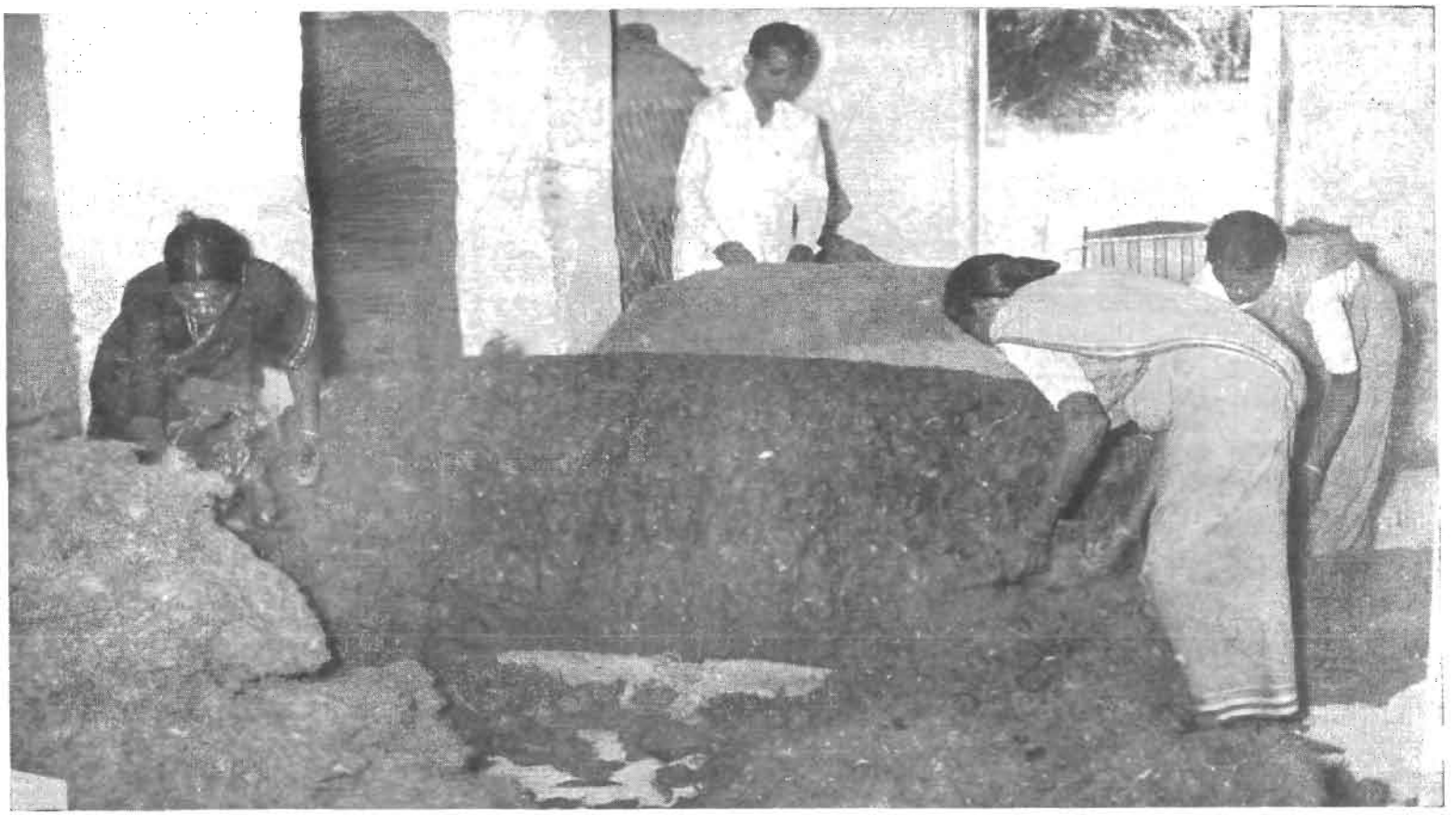
it to the spindle with the left hand. At the exact moment, the point of the spindle catches the wool, the hand is gradually drawn away upwards till it reaches the shoulder level of the seated woman. Thus 2' of yarn is spun. Simultaneously the spun yarn is wound on the spool. Twisting is done with the help of the two fingers and the thumb. The quality of the yarn depends on the quality of the wool, white wool providing necessary strength to the yarn without much of breakages. The lower the quality of the wool, the thicker and uglier the thread. After a certain amount of woollen fibre is twisted, the yarn covers the body of the spindle. This yarn is wound into conical balls and kept apart. Each ball contains upto 20 or 30 yards of yarn.

After a few conical balls of yarn are ready, the ends of these are taken and drawn out. These are wound into 'latties' or hanks. Normally if $7\frac{1}{2}$ lbs. or one stone wt. of wool is given, 4 hanks weighing $1\frac{1}{4}$ or $1\frac{1}{2}$ lbs. can be produced. Each hank contains 250 or 300 yards of yarn. After preparing these hanks, the women spinners take it to the owners who weigh it and hand over the wages. Even the waste will have to be handed over to the owners and the spinners are not allowed to retain the same. Normally for $7\frac{1}{2}$ lbs. of carded wool, wastage will roughly be $1\frac{1}{2}$ lbs.

STAGE IV

Dyeing

After collecting the woollen hanks from the women spinners, the owners take them to their factories. Bleaching is not undertaken for druggets but only for certain pile carpets because of the wastage involved in bleaching lime wool. Some owners use pulled wool for their products if they get orders for superior quality



The owner of the factory along with three women workers opens the bora of cheap quality wool. Note the women workers lifting the wool to be loaded on the nail drum carding machine.



The woman spinner is squatting comfortably on the pial of her house. With a heap of carded mixed wool at her side, she sets the wheel in motion; the yarn is spun and wound on the spool.



The Nail Drum Carding Machine is set in motion. The lime wool comes into contact with the rolling nails and gets thoroughly teased up.



After preparing the lime woollen yarn thread into conical balls, a few are taken and drawn out by the woman spinner in front of her house.



In front of her house, the woman spinner winds the lime woollen yarn into latties or hanks in a peculiar manner.



After preparing the hanks out of lime wool, the woman spinner takes it to the drugget factory and the owner weighs it in lbs. and hands over the wages on the spot.

druggets and for the manufacture of these druggets, bleaching is necessary. At the outset the hanks of woollen yarn which are washed in soap solution and allowed to soak for 24 hours are taken out and washed in clean water. This washing is necessary to remove the grease and dirt. Afterwards, the hanks are placed on bamboo sticks. If fast colours are required, the hanks have again to be dipped in hot water; for other colours, cold water will suffice.

Two or three tubs are filled to the brim with water. Adjacent to the tubs, a large vessel which can hold 12 to 14 litres of water is placed on a furnace. The dyer takes up the hanks one by one and dips it in plain water to remove dust and grease and to make the yarn soft and absorbent. Fast colours are normally used for export varieties. The chemicals viz. Glauber's salt sulphuric acid and acetic acid are weighed and added with the mixture of the required colours.

The already bleached yarn is now dipped in the vessel into which yarn is allowed to boil between ¾ hr. to 1 hour. During the process of boiling, the dyer constantly stirs the wool with the help of a stick. At the appointed hour, the woollen yarn is lifted out of the vessel and dropped into the tub of cold water placed near the former and from there transferred to the bamboo rod and dried in the open sun for a period of 4 to 6 hours. Direct colours are preferred to acid colours though acid colours have to be utilsed if the druggets are to be exported to other countries. The following are the direct colours:

Yellow
Orange
Light green
Light blue
Lavender
Crimson

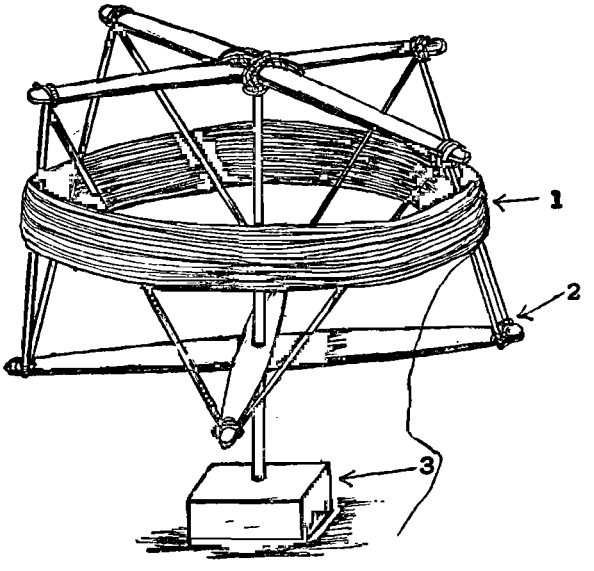
Acid colours are red, dark green, black and grey, but almost all colours are available nowadays.

STAGE V

Twisting of Cotton Warp Thread

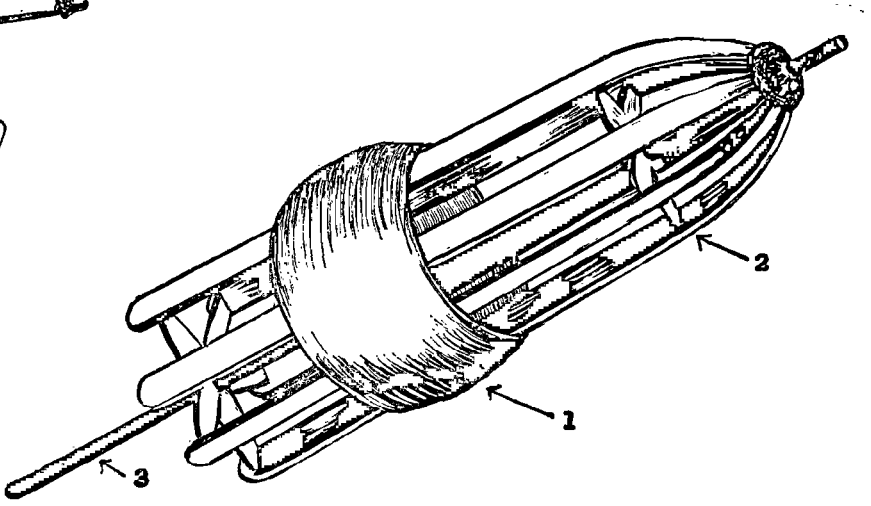
The cotton thread of 10 counts which has been purchased in bulk by the factory owners is distributed among 9 women spinners or twisters who work on this process in their own homes. These spinners belong to the Sowrashtra community. This twisting must be done

DRAWING WHEEL



1. Cotton yarn thread
2. Drawing wheel
3. Thapo

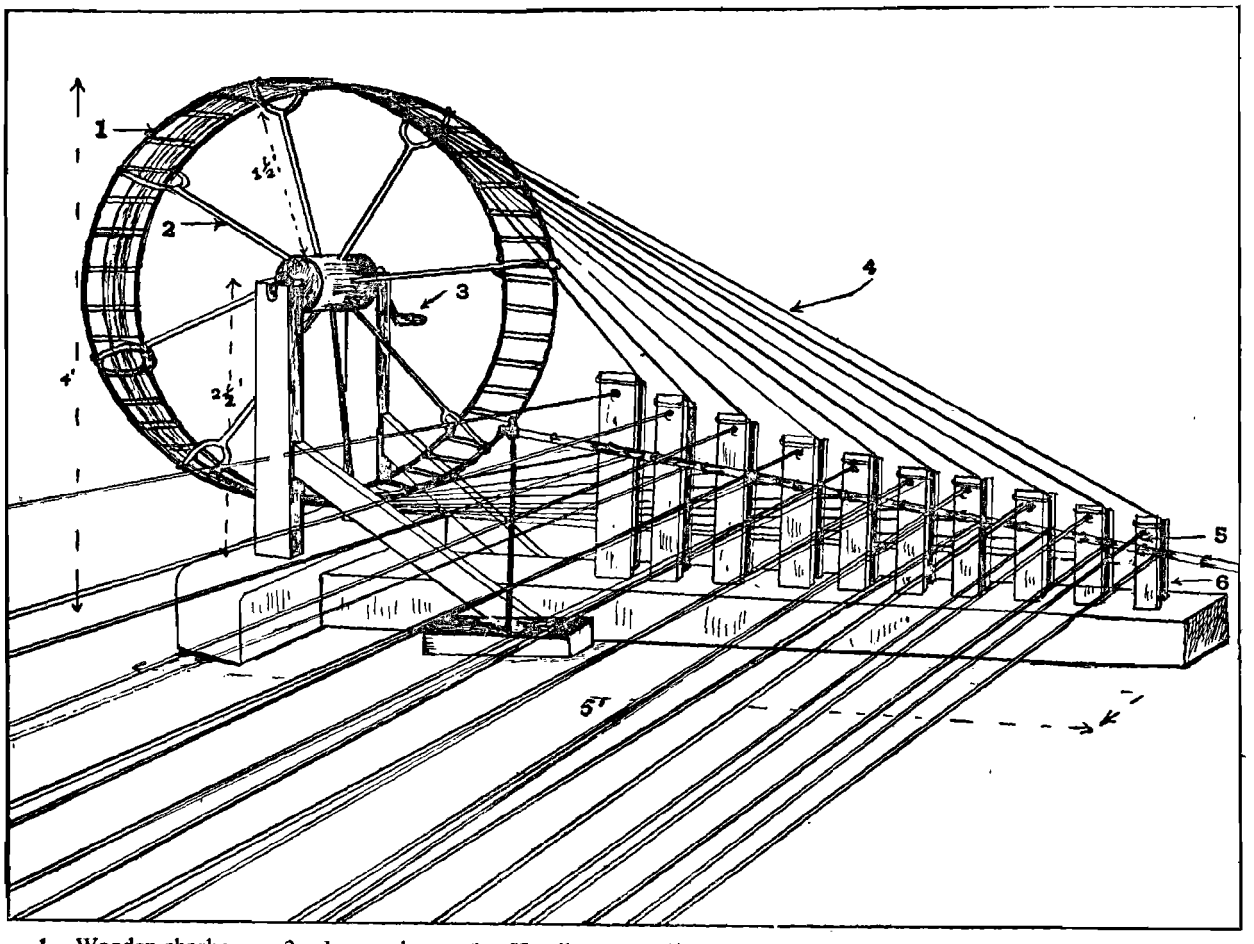
COUNTRY BOBIN (Thota)



1. Cotton yarn 2. Thota 3. Handle

patiently and with care. The cotton yarn of 10 counts is spread on three or four branches of two or three drawing wheels. The number of wheels as well as the branches depends upon the required ply. Each drawing wheel holds a maximum of 4 branches. For superior druggets, the maximum is of 8 ply with two drawing wheels and for inferior qualities, 6 ply with 2 wheels. The original drawing wheels were being imported from Bangalore, but are now made in Walajapet by the local carpenters. The maximum demand is for 8 ply thread. The women spinners place the cotton thread upon the drawing wheel and hold its ends in their fingers. All the 8 ends will be held in the left hand and will be drawn, the right hand assisting in drawing the thread upto a length of 2'. Sometimes "Thota" or a turning bamboo tool commonly known as country bobbin is also used. This is held in the right hand and turned with the help of the fingers to have the spun thread twisted on it. Once the thota is completely covered with thread, it is removed and another thota utilised. After the required 8 plys have been produced, they are attended to the feeding stick and then to the spindle hooks of the cotton yarn spinning charka. This spinning charka has 10 spindle stands having two hook spindles on each stand. To turn the spindles, there are 10 belts, each belt connected to two spindles. The cotton thread is attached to the lower row and taken to a length of 22-24 yards. The thread has to pass through the hook plates, ten in a row upto a distance of 30' and again brought back and attached to the upper row of ten hooks of the charka. In between these two rows, a bamboo stick of 4' length is placed to separate the upper and the lower threads. With the help of the right hand, the rod of the charka is given a rotary motion. As the thread starts twisting, the length of the cotton thread shrinks to 2 or 3 yards. One person at the other end holds the hook plate. The sign board near the person opposite to the hook plate indicates that the cotton thread of the required ply has been adequately twisted. Then the rotary motion of the charka is stopped. The thread on the lower hooks will be first removed and subsequently the ones on the

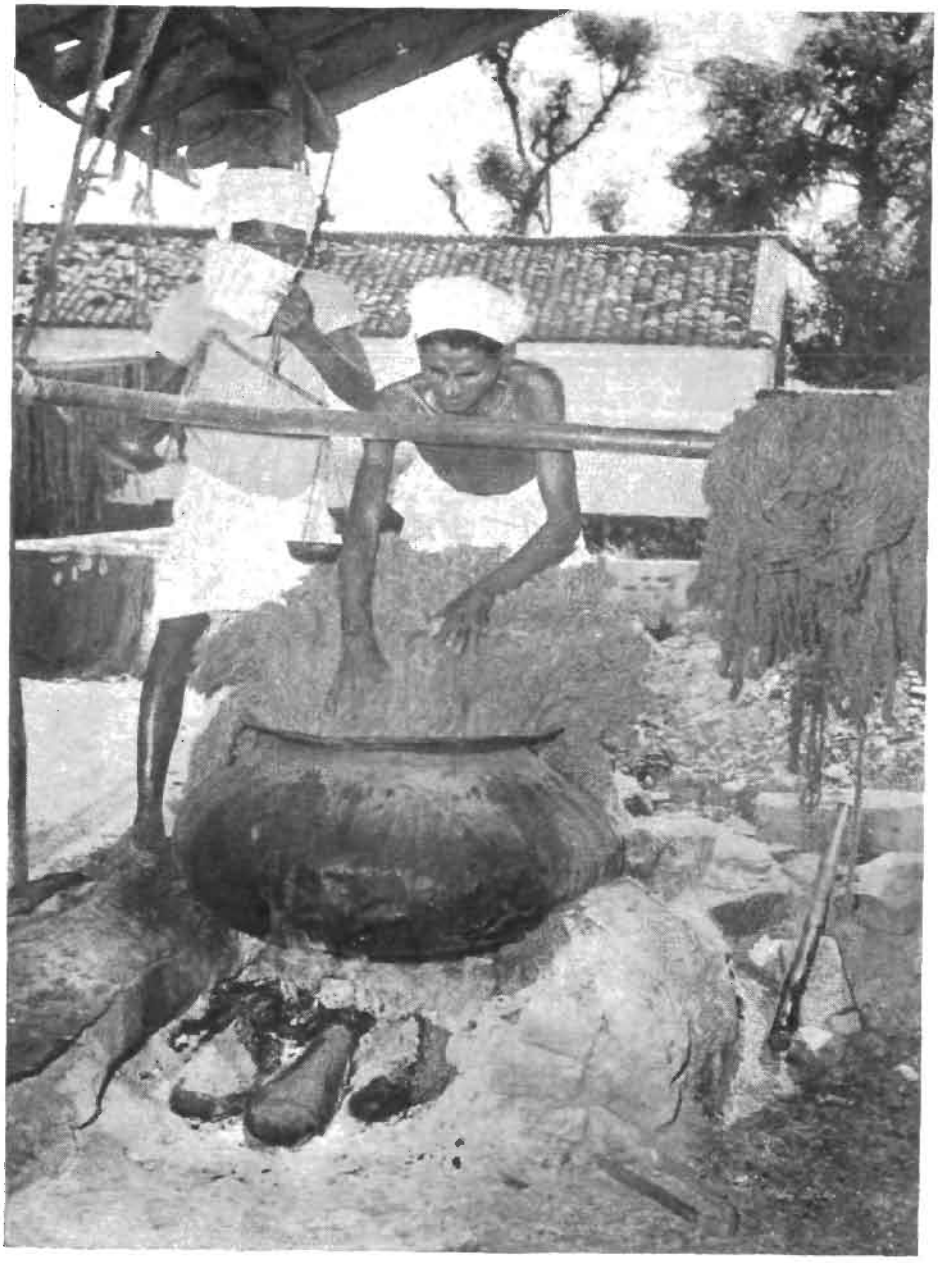
COTTON TWISTING CHARKA



1. Wooden charka 2. Iron rod 3. Handle 4. Cotton thread 5. Iron spindles 6 Iron poles



In the Drugget Factory at Walajapet, the dyer picks up the hanks from the tub, washed in the soap solution. (Note the China clay pot and glass used for mixing the chemicals)



The dyer dips the unbleached lime yarn into the vessel which is set on fire. The other co-worker is weighing and calculating the quantity of chemicals and dyes to be mixed in the boiling water.



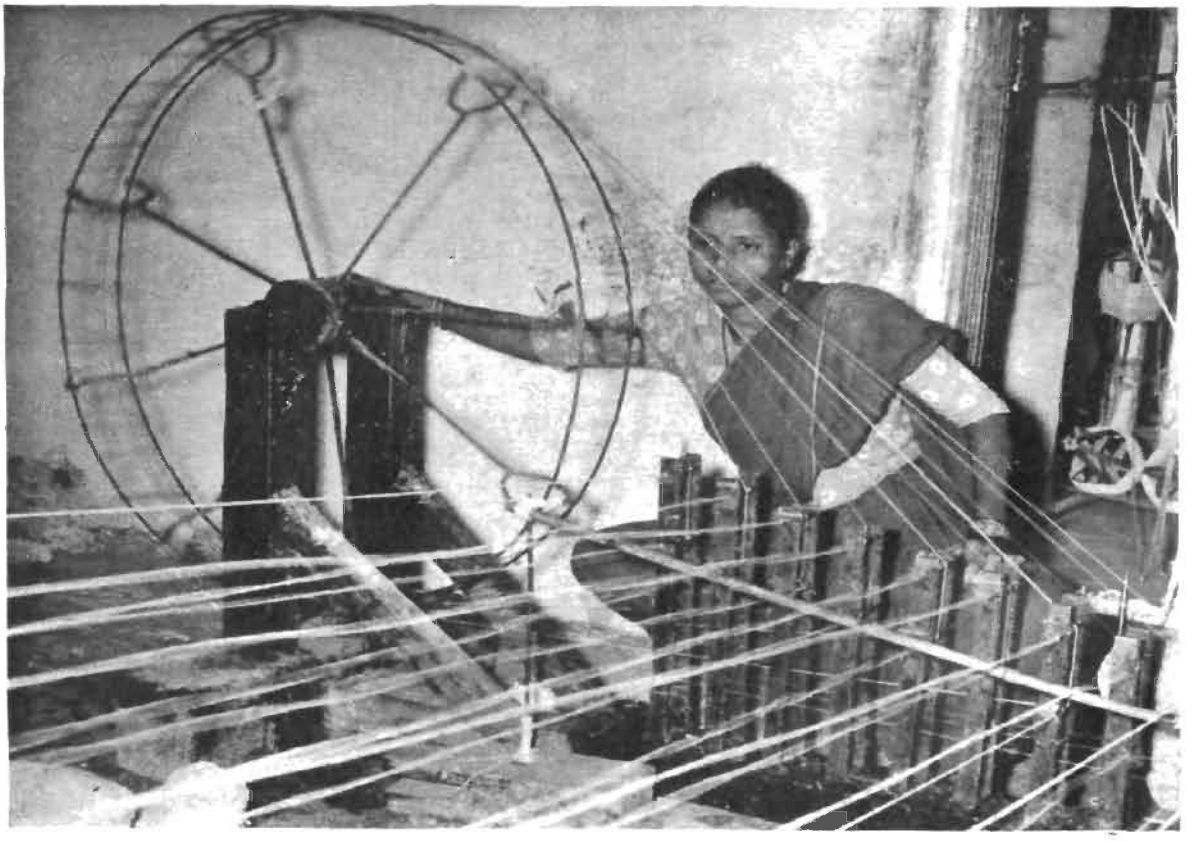
The dyed rough quality wool is being dried in the open sun for a period of 4 to 6 hours. The building in the background is a house of weavers which throws light on the social and economic condition of the inhabitants.



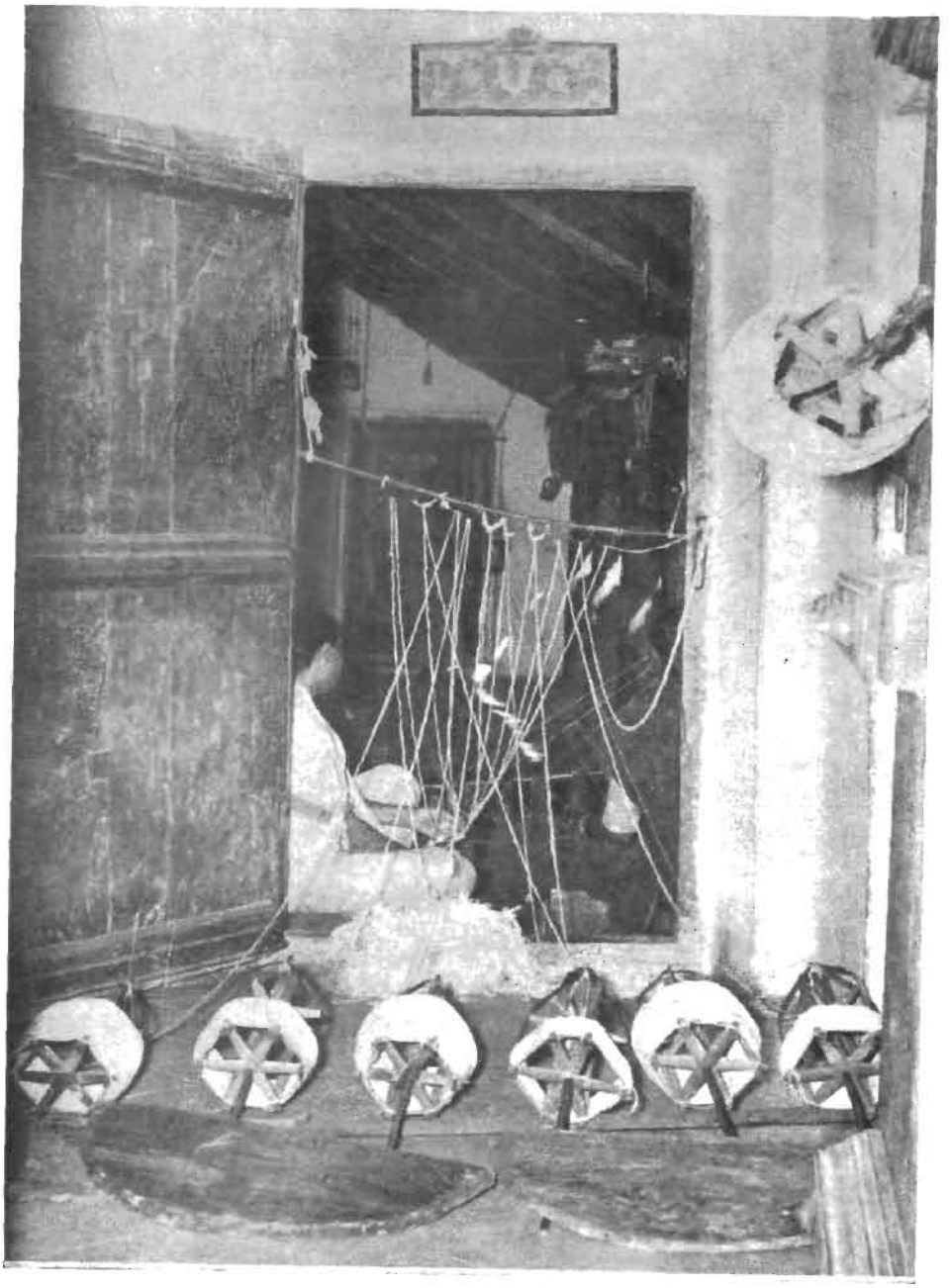
In the house of the woman twister, the cotton yarn of 10 counts for 8 plys is spread into four branches on the two drawing wheels. Note the woman twister holding cotton yarn by her left fingers and drawing the thread by her right.



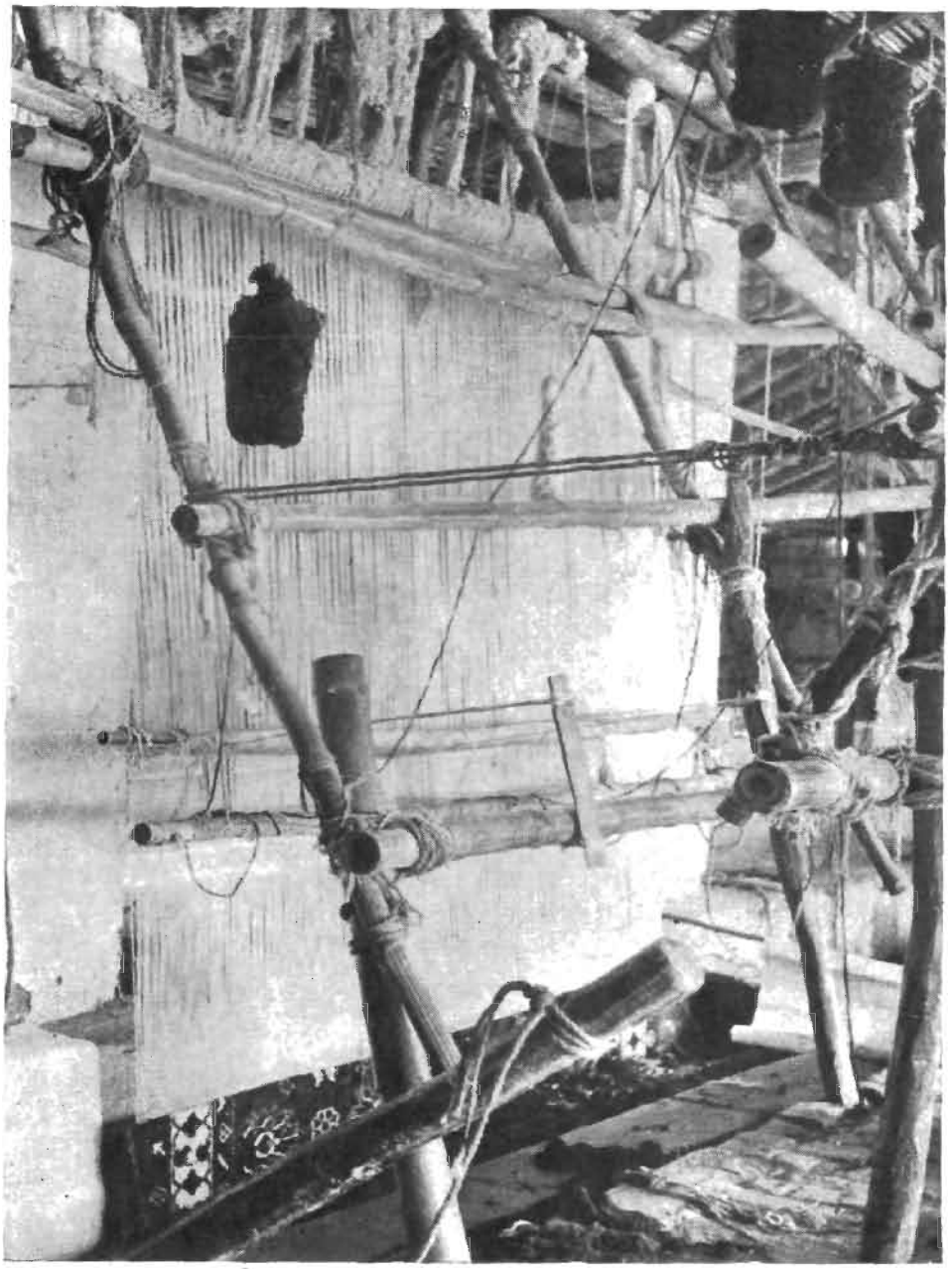
The cotton yarn of 10 counts is wound by the young Saurashtrian girl in her house. The Parivattam (turning bamboo tool) is turned with her right hand and the thread is drawn with the left hand.



The lady, with her hand, gives vigorous turns to the rod of the charka which immediately sets into motion and the thread starts twisting.



Completed Parivattams with twisted yarn on it is kept in a row at the back of the spindle hooks of the cotton yarn spinning charka. The threads are fixed to the 10 spindle stands having hook spindle on each stand.



Arranging of the warp on the loom is handled carefully and entrusted to skilled workers. It is important that the warp should have tension.



After fixing up the warp thread, the weavers take their respective place to weave the drugget or carpet. The weavers are sitting at the other side of the carpet loom which can be seen through the unwoven warp yarn.



The weaver takes up the woollen yarn by his right hand and just passing it between the warp, removes it at the other end with his left. The yarn which is passing through is of natural colour while the wool used as border for woven portion is of black colour.

upper hooks. The ten threads of the upper and lower hooks are knotted together and placed on two standing poles near the charka. Thus there will be 4 knots in a warp. Finally the twisted cotton thread is rolled into hanks to serve as warp for drugget and carpet weaving. The dyed woollen hanks are taken to the loom along with the cotton thread. The cotton warp of 8 ply is attached to the iron rod tied to the wooden roller called "Thoor".

STAGE VI

Warping

After preparing the warp thread, it is taken and fixed on the loom. It is a matter of some difficulty and is generally entrusted to the most skilled workers. It is necessary that the warp should be at the right tension ; otherwise the drugget will have a loose and flabby appearance. At first the warp is laid on the ground and then it is set upon the loom by joining with the cotton yarn which has been left on the loom. The new warp will be knotted with the old. The bottom of the warp will be knotted to the iron rod which is with the roller. The rope hooks can be found on the roller. About five threads in the back and five in the front will be knotted to the iron rod. Then the bottom size should be kept to a certain level, so that the roller can be rotated with the help of the pole (tightening rod). The warp at the top will be divided into three threads each and these threads will be knotted by $1\frac{1}{2}$ knots to the top bamboo. Then the roller should be rolled to have tension to the warp. The punch cole will be attached behind the bamboo and behind the weaver to give Ani. Thus the warp is set ready to commence the work of weaving.

STAGE VII

Weaving

Inside the workshop the lower beam of the loom rests in a trench 2′ deep and about $2\frac{1}{2}$′ wide. The lower beam is fixed 1′ above the bottom of the trench. The weaver sits in front of the warp on a flat wooden board about 2′ wide, resting his feet in the trench or on the ground as the case may be. The dyed wool or yarn of the requisite colour wound into small conical balls are kept ready by his side. The number of weavers required varies with the breadth of the drugget to be woven. One weaver is necessary for every 3′ of the drugget. The better workmen sit on the outer edges to regulate the pace of the one in the middle.

The punch coles will be attached behind the bamboo and behind the weaver to give the necessary Ani or shedding. Before the main body of the drugget or carpet is fully woven, the weaver starts weaving the border. If they want to weave a drugget of 1′ breadth, the border must be woven upto 1″ on all the sides. For the drugget of 3′ breadth, the border on all sides will be 3″ in breadth. The weaver takes up the woollen yarn in his right hand and passes it through the warp yarn and beats it into position with the help of the iron comb or hatta. He now pushes the vadicole forward and the warp threads reverse their position. This holds the weft tight. The woollen yarn is again passed through the gap and beaten into position with the hatta. Once again the vadicole is pushed backwards and weft passed into the gap. The hatta is now utilised. This process is repeated till about 5′ of the drugget is woven. Once the drugget is woven upto a length of 5′, it is rolled on the roller with the help of one of the rods attached on the roller. The roller is released by loosening one of the rods attached to it and the finished drugget rolled on it and the rod once again tightened.

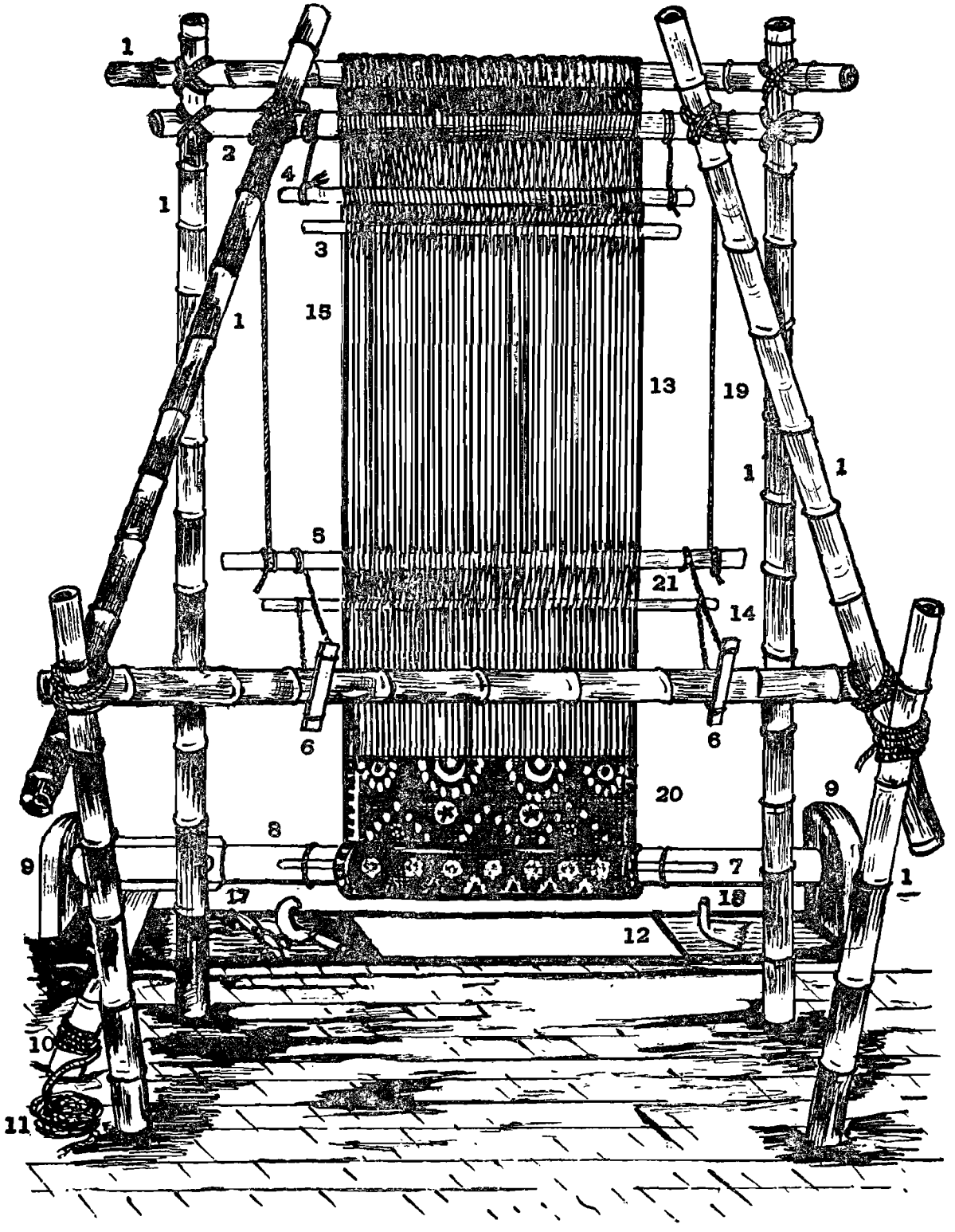
STAGE VIII

Designs

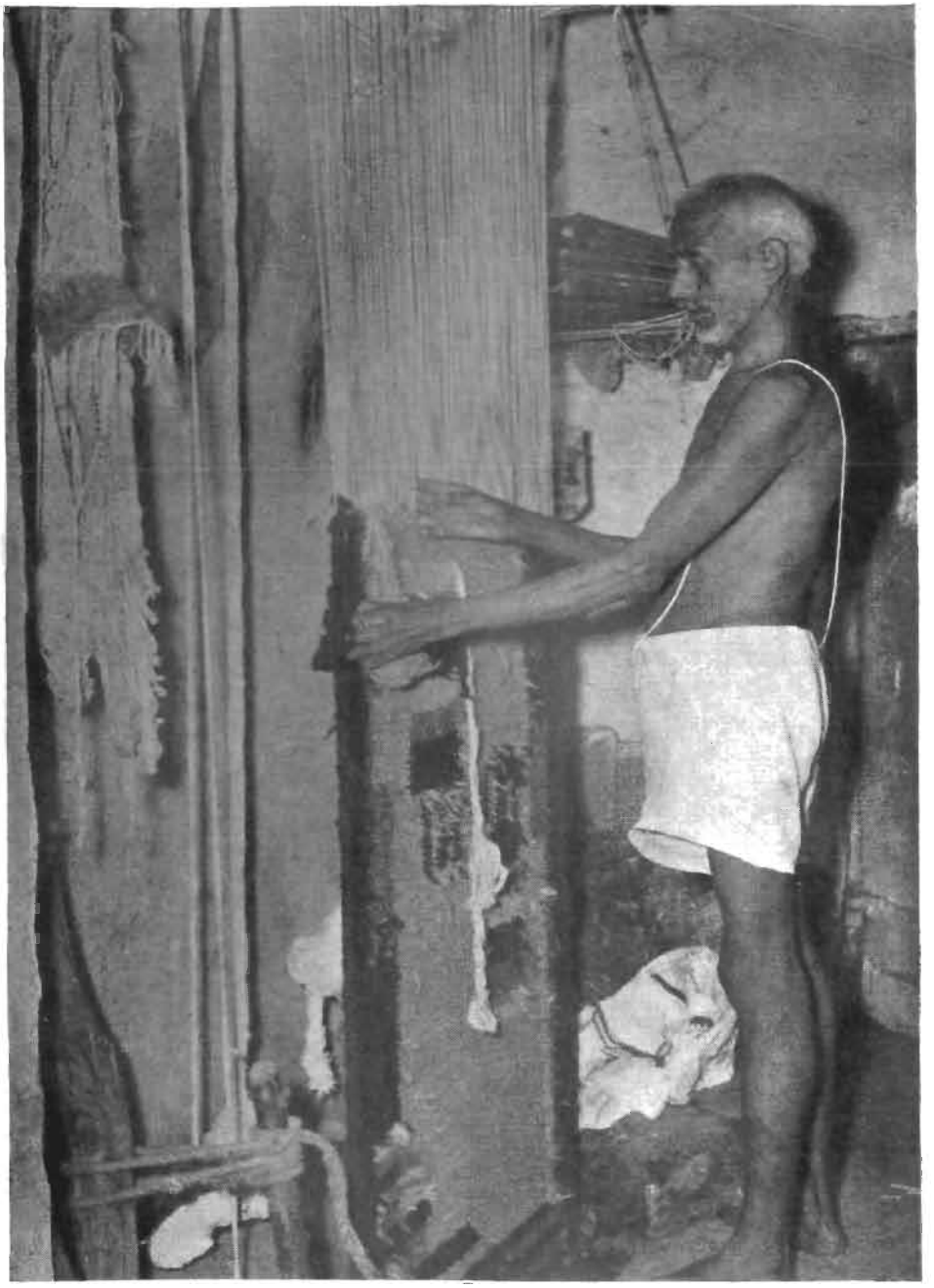
After weaving the borders, the designs are woven on the body of the drugget. The majority of the Walajapet weavers copy designs which are popular in western countries and do not know any traditional design; this is one of the major defects of theWalajapet drugget and carpets. That there is nothing wrong with the traditional and native designs peculiar to India is amply borne out by the statements of authorities like Sarvashri R. J. Mehta and F. H. Andrews. Thus Sri Mehta describing the Indian carpet says "it is said that the vice of Indian decorative art is its tendency to run riot, go out of control, to end in over-ornamentation and vulgar display. Whether this is true or not remains to be proved by those who believe it. But it can be emphatically stated that Indian textiles and particularly carpets are completely free from it. With unconscious subtlety, thin and light fabrics are delicately coloured and ornamented, and the heavier materials more richly, both the ornamentation and the colouring perhaps subconsciously adapted to the effect desired, especially when the fabric is used as it is meant to be. It is rightly said that it is difficult to analyse the secret of the harmonious bloom of Indian textures, even with the aid of Chevreul's prismatic scale and that it is only through generations of patient practice that men attain the mystery of such subtleties". * P. C. M. applies an esoteric symbolism to the designs of carpets. "There is a hidden meaning in almost all designs found in oriental carpets. The circle represents eternity; the zig-zag water and lightning; the swastika guiding light in darkness; the meandering line continuity of life; the

* Handicrafts and Industrial Arts of India

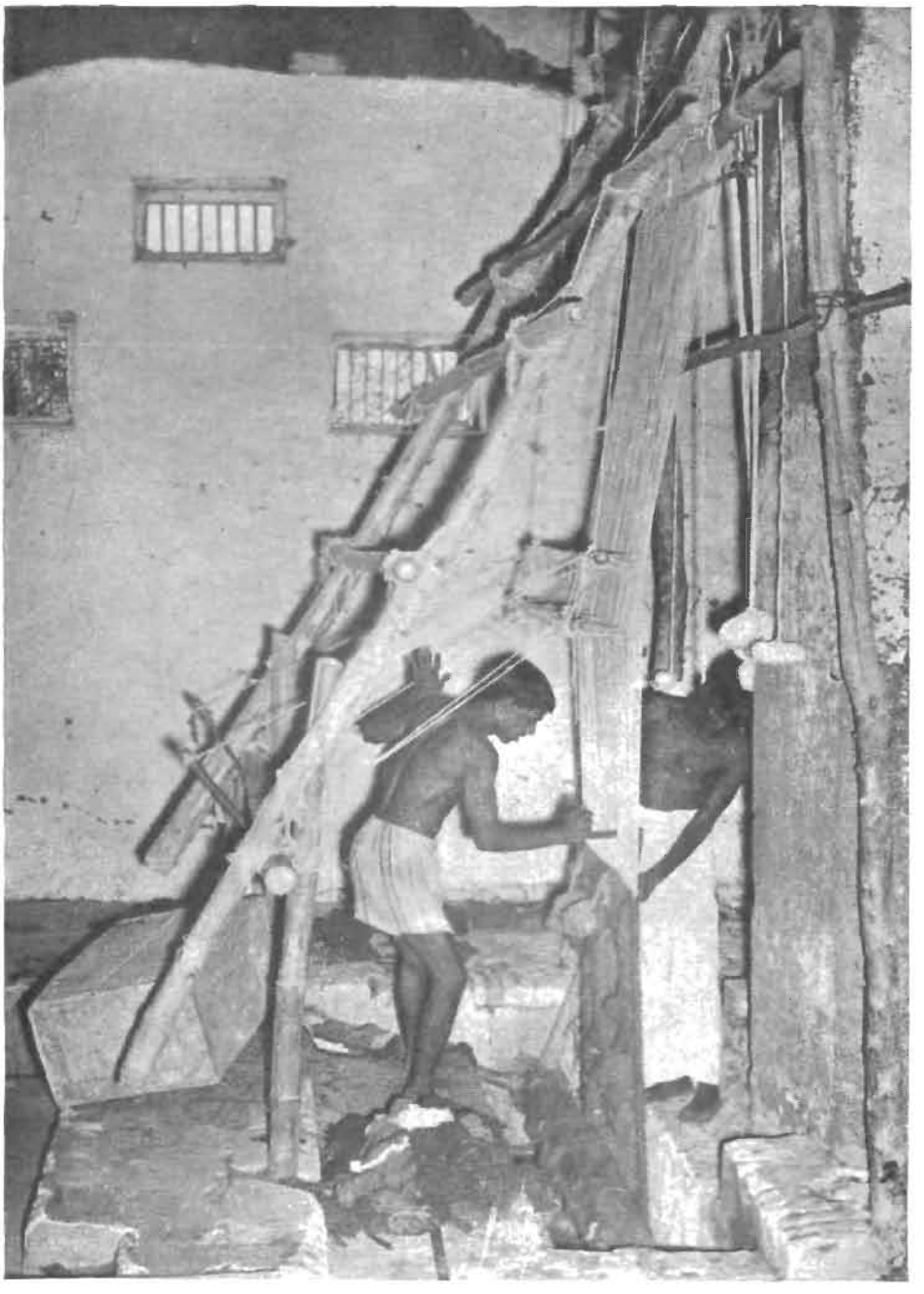
DRUGGET AND CARPET LOOM



1. Bamboos 2. Allu varai 3. Jog kambi 4. Gatte bongu 5. Vadi coles 6. Punch coles 7. Inda kambi 8. Thoor 9. Stone brackets 10. Tightening rod 11. Coir rope 12. Sitting plank 13. Cotton thread 14. Woollen yarn 15. Weighting Stone 16. Finishing knife 17. Scissors 18. Hatta 19. Tightening ropes 20. Drugget 21. Vadidharam



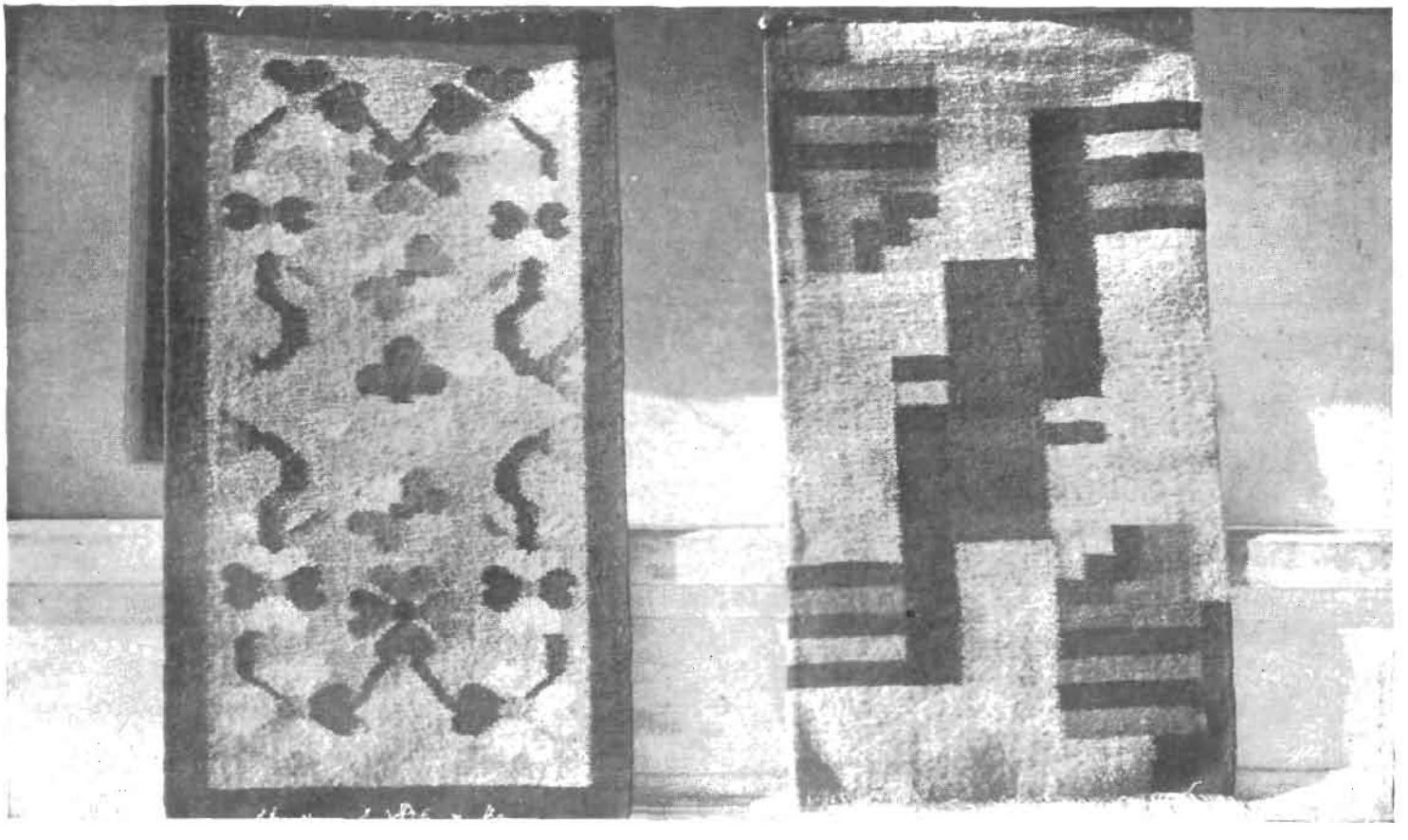
Sometimes if the drugget reaches a height of more than 3 feet the weaver prefers to stand and weave.



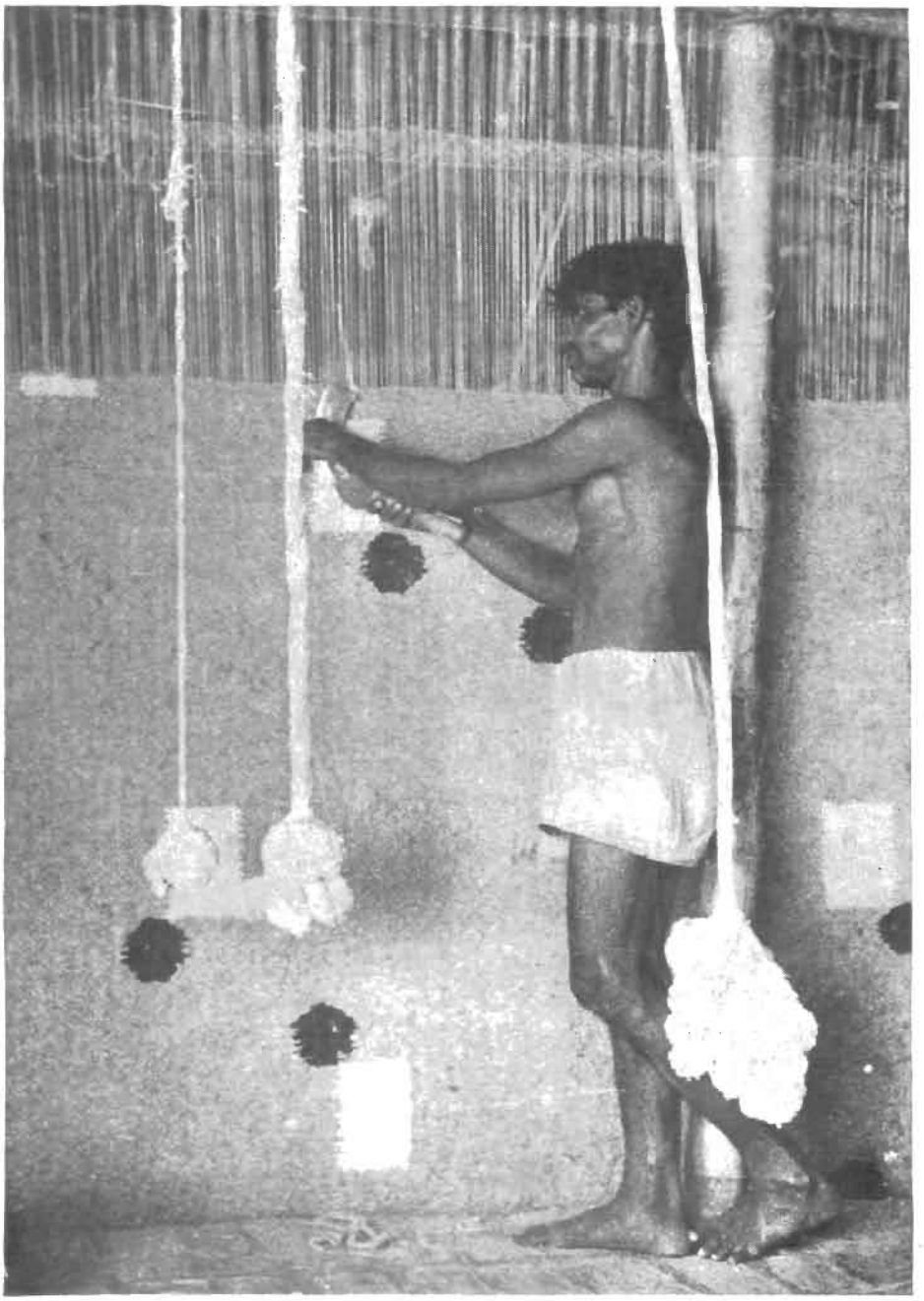
After placing the woollen yarn between the warp, the weaver lifts the iron comb or hatta and beats into the position to hold fast the woollen yarn tightly into the warp thread.



The beauty in druggets is that the design can be seen at the back side of the drugget. In this photograph we could see a young boy and his elder sister admiring two lovely pieces of druggets.



A closer view of the two drugget designs woven with mixed wool which are fairly in good demand.



After the drugget has been woven with plucked wool to the required size, weaving is temporarily stopped and trimming starts.

Note the weaver in standing position trimming the drugget with a sharp knife to make it smooth and soft.

tree, bounty. The whole carpet is said to be the emblem of eternity and the pattern the visible world of change". † Describing the Herat carpets made in Agra, Delhi and Lahore, F. H. Andrews states "the earliest examples are remarkable for the boldness of the curving stems and the soft cool harmony of the colour in which is found a good deal of a fine green and deep blue. The most striking feature in all these early carpets is the appreciation for the ground and the proper restraint in the 'quantity' of the pattern. There is something imperial in the great curves and bold touch of the designers who command ample breadth while achieving extreme closeness of stitch. Their work never looks crowded and there is always a proper proportion of border to field. To the artist and designer, one of the most striking features of the Herati design is the extremely skilful choice and use of outlining colours."* "In all these carpets the first thing to observe is the complete subordination of the decoration to the surface. A carpet presents of course a flat surface and the decoration in these Indian carpets, it will be seen, is never allowed to disturb the impression of their flatness. This effect is obtained by representing the ornamentation on them in a strictly conventional manner and without shadow. The next thing to observe is the skill with which the ornamentation is distributed, nearly always in a symmetrical manner and with such perfect balance that even where it is most crowded there is no effect of overcrowding." ** All these statements have been incorporated here to indicate that traditional designs have always appealed to the connoisseurs and to the general public as a perfect embodiment of Indian craftsmanship. Why then should the craftsmen of Walajapet have imitated cheap designs is beyond comprehension. This has been the policy not only of the Walajapet weavers, but of almost all carpet and drugget weavers of the South. "The exhibits of carpets sent from Ellore, supposed to be the most famous carpet weaving centre in the South is poor in conception, weave and colour. The patterns in use were poor and often modifications of cheap Wilton Kidderminster and German powerloom designs." ‡ It was again this mania for imitation which led to F. H. Andrews condemning the carpets and druggets of the South in the following words: "South Indian carpets and druggets appear to suffer from want of feeling. The designs are seldom or never indigenous and what is borrowed is never understood. These craftsmen may utilise the finest materials and put into their work the most minute care and yet they fail to move us". This was strong indictment indeed. From the authorities quoted above, it is apparent that the designs of the South Indian workmen are mere imitations, imitations without purpose and however much the workmen try to compensate by choosing bright colours, it nevertheless has to be acknowledged that bad designing can never be compensated by the best of dyes. The usual modus operandi of the Walajapet workman is to take up modern designs sent out from Europe and from other parts of the country, number and label it as it helps the foreigners to write clearly instead of writing the name of the design, and then proceed to imitate it. It must, however, be conceded that he is an expert imitator, copying some designs well but sacrificing the rich experience and heritage of the past.

The following are the designs which are well known at Walajapet and which are said to be in demand. These can be divided into two categories-those which are old and those which are recent. Among the former can be included Bodigai, Danka, Kodi, Pottoo and Chinthal. Among the latter, there exist no specific names, but the designs are denoted by numbers such as 706, 707, 714, 730, 740, 753 etc. The designs are woven on both sides of the drugget. They are either geometrical patterns or floral motifs. In the case of druggets exported abroad, the designs are usually indicated by the European or American merchants. The owner of the factory then asks his designer to draw out in pencil the design on graph paper as no hieraglyphics are prepared in this town. This is handed over to another colour expert with indications as to the type of colour to be used and the portions to be coloured. The final design is later placed in front of the weavers who work on the looms.

Of the recent designs, two are worthy of mention. These designs are denoted by numbers.

Design No. 714

This is a design with a blend of colours and different floral motifs. The colours used are blue, pink yellow and white and on the borders are sprays of small flowers. The various panels merge with one another in harmony. The texture of the drugget has to be soft and luxurious.

Design No. 753

A drugget with this design was woven for a millionnaire in Hyderabad. It also contains a floral border. The colours used were pink, green and blue. For sheer riot of colour and exquisite floral design, this drugget could not be beaten.

† Statesman 1-1-1956

* The Journal of Indian Arts and Industries Vol. II 1905-06

** Sir George Birdwood

‡ Henry T Harris: Madras Industrial and Art Exhibition 1930

STAGE IX

Trimming

After the drugget has been woven to the required size of 5', weaving is stopped and the process of trimming takes place. The drugget will remain on the loom and the weaver, armed with a knife 10" in length commences trimming on both surfaces on the drugget to make it smooth and even. The time taken for this process, relative to the size of the drugget and the number of persons required for the operation is indicated below:

Size of the drugget	No of persons	Time taken
3' x 6'	1	½ hour
4' x 9'	2	40 minutes
6' x 9'	2	50 ,,
9' x 12'	2	1 hour 10 minutes
12' x 15'	4	1½ hours
15' x 20'	5	2 hours

STAGE X

Knotting and Brushing

After this operation is concluded, the thread hanging loose on the side known as the fringes are knotted together. Allowing 4" of the warp thread to be utilised when the new warp thread has to be attached to the loom, the drugget is cut out of the loom with the help of scissors. The drugget is then detached from the loom and spread on the ground for brushing. The following Table indicates the time taken for the final processes of knotting and brushing relative to the size of the drugget :

Size of the drugget	Number of persons required	Time taken
3'×6'	1	1 hour
4'×7'	2	1 hour
6'×9'	2	1 hr. 15 mts.
9'×12'	3	1½ hours
12'×15'	4	2 hours
15'×20'	5	2 hours

STAGE XI

Packing

Superior quality druggets have to be handled with care. They are rolled piece by piece. One roll may contain about 60 sq. yards of druggets. These are tied with coir ropes and over them palm leaf mats are placed as an additional cover. Finally the bundle is encased in hessian cloth and stitched. This packing is done when goods are exported to foreign countries.

In the case of lower grade druggets, they are folded into size 3' x 2' and piled one on the top of the other and pressed down firmly. They are then tied firmly together with coir ropes covered with palm leaf mats and stitched in hessian cloth. These bales are then booked by Railway freight or despatched in lorries to those who have placed order for them. Before the Second World War, transportation was effected by the Indian Railways. They used to extend concessions at half freight rate to the manufacturers of Walajapet. But after the Second World War, the Railways withdrew this concession which they still extend to handloom goods. This has created a lot of difficulties and is said to be one of the causes for the decline of this craft. Nowadays the majority of the factory owners despatch their goods by lorries which costs more.



After removing the drugget from the loom it is spread on the ground to bind the fringes hanging on two opposite sides. The background is a house of a weaver in very bad condition which reflects the social and economic condition of the Walajapet weavers.



Druggets are folded and piled one on the top of the other. Two weavers are tieing it firmly with coir ropes covered with palm mats. Finally the bundle will be wrapped in a hessian cloth and stitched.



Majority of the weavers have left their traditional occupation and taken to other livelihood. One of the crafts which attracted the weavers' children is rope twisting with hair of cows and bafallos.



In one of the streets of Walajapet young and energetic children are found learning from the elders the art of twisting ropes. In the background stands one of the wonderful and biggest mosques in Madras State built by Nawab Walajah.



Some of the skilled Drugget and Carpet weavers of Walajapet. At the extreme right is Shri Balakrishnamoorthy the famous Drugget and Carpet manufacturer of pre-war period and to his right is Shri Abdul Hameed Khan the leading drugget manufacturer of this decade.



The factory of Kishinchand Chellaram the famous Drugget and Carpet manufacturer of the present era. The person standing at the door is the care-taker of the factory.

CHAPTER III

ECONOMICS OF PRODUCTION

The industry enjoyed an era of prosperity during the 1930s. At the beginning of the Second World War it was a flourishing craft. The war years created a lot of difficulties and the post-war period first noticed the decline of the craft. This downward slide remains unchecked to the present day. The following figures will illustrate this point:

	Before 1939	1961
Weavers	440	113
Spinners	500	300
Looms	180	78
Factories	11	7
Export of druggets	80,000 sq. yds.	50,000 sq. yds.

Nearly 75% of the weavers have left their traditional occupation and taken to other means of livelihood, mainly agriculture. A few have left Walajapet town and migrated to Gopalasamudram, Vaniyambadi, Ambur and even to Bangalore. Some others have moved to Vellore and Arni in North Arcot district, and taken to silk weaving. 60% of the women spinners have given up their traditional occupation and taken to agricultural labour. Some of them have migrated from Walajapet along with their husbands and assist the heads of the households in silk weaving. Nearly 57% of the looms have been put out of commission and four factories have closed down. Even in the remaining seven factories, there are only two or three looms per factory. Unless something is done and that too in quick time, the drugget industry will in due course become extinct in Walajapet.

The prices of raw materials have also increased out of all the reasonable proportions. The price of cotton yarn has increased by 86% and the wages for twisting by 88% compared to the pre-war prices. The price of wool has increased by 75—80%, but the price of the finished goods has increased only by 30-50%, in other words it has not kept pace with the increase in the cost of raw materials. The fall in demand has been accelerated by the use of inferior quality dyes by the weavers and their imitation of cheap designs. The cost of dyes has also increased considerably. The cost of the favourite colours green, blue and brown has increased by nearly 95%. Thus many of the master dyers of olden days have switched over to silk weaving and have gone and settled down at Kancheepuram, Arni and Vellore. The dyers remaining in Walajapet lack faith and skill and cannot produce articles of good quality. This coupled with the seasonal nature of their work and the inelastic demand for the products has led to the decline of the craft.

Cost of Production

The cost of druggets is comparatively cheaper than any handicraft products in Madras State. The smallest of druggets $1\frac{1}{2}' \times 3'$ used as door mats costs only Rs. 2/-. A superior quality of the same costs Rs. 4.50. High quality druggets of large size cost only about Rs. 270/-. The maximum breadth of a drugget is normally 20', its length varying according to the wishes of the buyer. Appendices 3 and 4 indicate the production, sale price and the margin of profits of woollen druggets of Walajapet.

Wages

The preventive clauses of the Factory Act prohibiting the employment of persons below 15 years of age and the 8 hour limit have partially contributed to the decline of the craft. This has prevented young people from working in these workshops which have been defined as a factory under the Factory Act. This has also prevented a family from augmenting its income by employing the younger members of the household. Secondly the pursuit of such handicrafts cannot be restricted to a particular time or place and the enforcement of the Factory Acts prescribing certain fixed hours of work has led to hardship both for the weavers as well as the factory owners. This has also to a considerable extent prevented the effective training of young children in the techniques of the craft. Catch them young is not just a pet slogan, but is quite relevant to the nurturing of a handicraft. It is the young one who sits at his father's feet and picks up the craft techniques by patiently watching and imitating what his elder does. This background has been denied to the young of Walajapet and to that extent has contributed to the decline of this craft. This is amply borne out from the age structure of the persons engaged in woollen weaving.

Age group		Workers
0–14	...	Nil
15–19	...	Nil
20–24	...	6
25–29	...	16
30–34	...	33
35–39	...	27
40–44	...	8
45–49	...	13
50–54	...	3
55–59	...	4
60 & above	...	3

Thus it is clear that not a single person below the age of 20 is engaged in drugget and carpet weaving. This has far reaching effects on the development of the craft. Wages relative to the price indices which obtained in those days were high prior to 1939 as compared to 1961. The following Table indicates the wages for weaving and spinning between the years 1926 to 1961:

Craft	Year	Wages per sq. yard (inferior quality weaving)	Wages per sq. yard (superior quality weaving)	Wages per stone weight (7½ lbs) (inferior wool spinning)
		Rs. nP.	Rs. nP.	Rs. nP.
Drugget Weaving	1926	0.19	0.31	0.13
	1946	1.25	2.00	1.00
	1961	0.75	1.25	0.62

The present day craftsmen are sending their children to school and training them in other crafts e. g. the Naickers send their children to work in the art of silk weaving and rope twisting whereas Muslims make their children take up beedi rolling and rope twisting.

However beneficial the Factory Act be to the community in general, it has played an important role in hastening the decline of this industry. For one, in those days weavers used to enter their workshed in the early hours of the morning, arrange the warp threads and remove the woollen yarn from the hanks before commencing weaving. Then they used to work continuously until they felt hungry, partook their meal and came back to their seats to resume weaving as wages were paid to them according to the outturn. But nowadays they get regular wages for every working day and this promotes laziness among the wage earners. The preparatory processes of fixing up the warp threads and loosening the woollen yarn from the hanks takes nearly one hour of their time and these processes are carried out after 8-30 A. M., that is when the factory opens. Then the work proceeds at a slow pace until 12-30 P. M., when it is time for lunch break. After an hour's break, they start working again with frequent breaks for tea and gossips. Out of an eight hour shift, only 6 hours are effectively utilised. During these 6 hours, only a low quality drugget of the normal size can be woven which fetches them a wage of about Re. 1/- to Rs. 1.25; for superior qua ity, they get about the same wage. If they are expert weavers, their earnings may be anything between Rs. 1.50 and Rs. 2.00. It is thus seen that the 8 hour shift has led to laziness and has indirectly contributed to the low earning by a drugget weaver. The following Table indicates the wages for the various processes in drugget weaving:

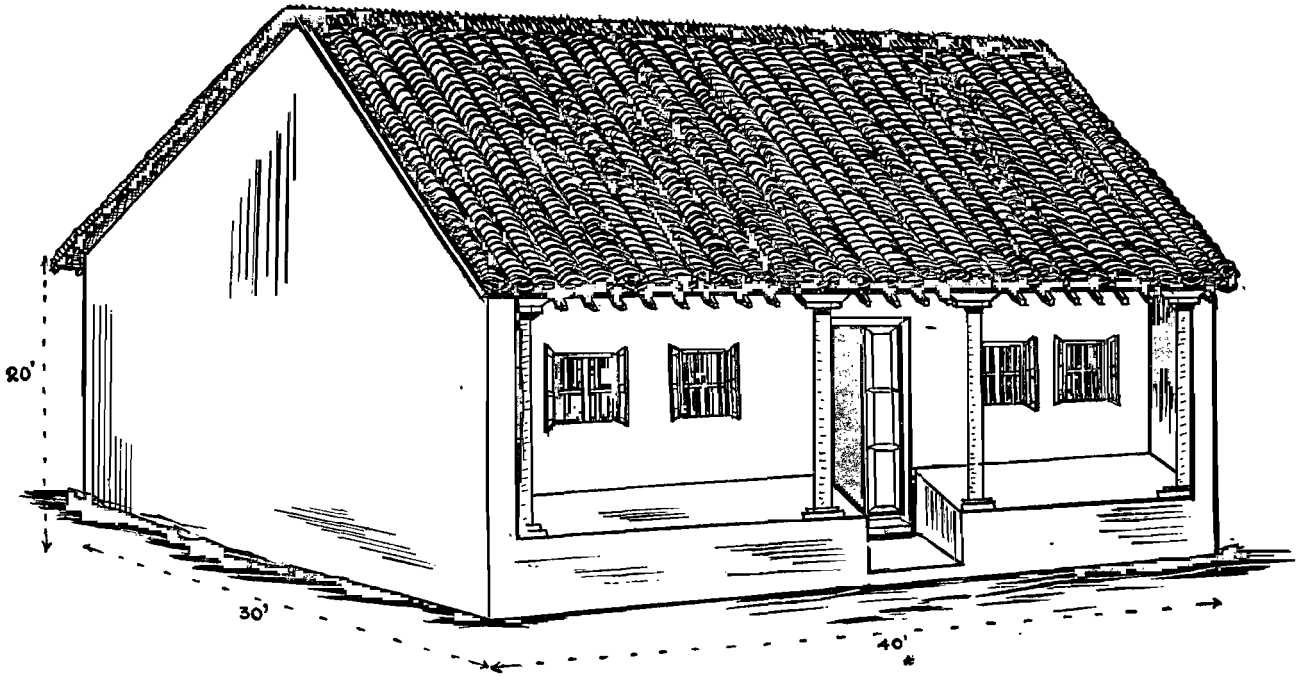
Sl. No.	Name of The process	Number of persons engaged in various processes at Walajapet		Wages for the worker	No. of days working in a month	Average monthly income
		Males	Females	Rs.	No.	Rs.
1.	Carding work	3	9	1.00	25	30.00
2.	Spinning	...	300	0.62	30	20.00
3.	Twisting	...	9	2.00	26	40.00
4.	Weaving	81	...	1.50	20	35.00
5.	Designing	1	...	2.50	20	60.00

The wages paid for some of the processes are separately indicated below with pre-war wages:

	Pre-war wages 1946	Current wages 1961
	Rs. nP.	Rs. nP.
1. Twisting charges for 1 lb.	0.06	0.50
2. Electric charges and wages for 3 workers in the carding factory to open 300 lbs. of pulled wool	8.00	24.11
3. Lime wool	4.25	20.77
4. Mixed wool	6.00	13.71

Wages for women Spinners

For spinning 7½ lbs. per day of nearly 8-10 hours, a woman spinner gets 62 nP. for lime wool and Rs. 1.25 for pulled wool. The average daily income of the woman spinner ranges between 50 to 75 nP.



Factory house

She cannot spin more than 7½ lbs. of pulled wool as the work calls for delicacy and patience.

For items such as packing, despatching, separating the woollen yarn which have been rolled into balls and arranging the warp on the loom, no wages are paid to the weavers. Even for the final touches applied to the druggets such as clipping, trimming and removing from the loom, no wages are paid. As soon as a drugget is completed it is removed from the loom, and the weavers have to sit idle until a new warp is prepared.

From our local enquiries, the following statement indicates the incomes derived from the various occupations by artisans in Walajapet:

Worker		Average monthly income Rs
Drugget weaver	...	35/-
Carpet weaver	...	45/-
Silk weaver	...	50/-
Handloom weaver	...	40/-
Rope twister	...	25/-
Cane maker	...	40/-
Blacksmith	...	55/-
Dhobi	...	50/-
Tailor	...	80/-
Beedi roller	...	40/-

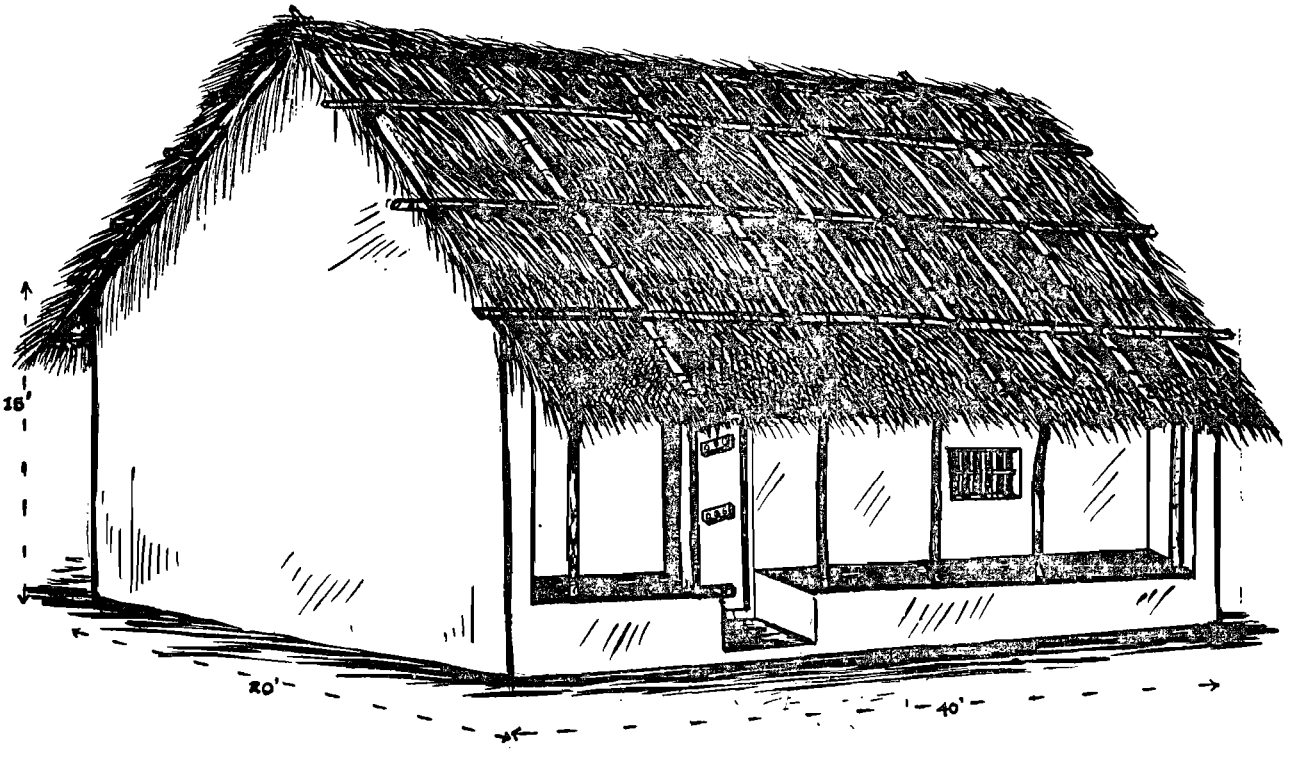
When compared to the Dhobies, Tailors and Blacksmiths, the wages of a drugget weaver are lower by 40-50%. He gets even a lesser amount than handloom weavers, cane makers and beedi rollers. His income is not supplemented by any other income. For this very reason the weavers and their children are slowly drifting away from their traditional occupation and taking to other means of livelihood.

Social and Economic Conditions of Drugget Weavers

The economic condition of the drugget weavers is depressing. As explained earlier, the houses of the weavers consist of thatched huts, only one or two houses of the Muslims and the Saurashtras being built of bricks and these belong to factory owners. Most of the huts are leaky and are one-roomed which is used for sleeping, eating and living. As explained earlier, the wages earned are barely sufficient to keep them going and the larger the family, the more difficult it is for the weaver to make both ends meet. In order to augment the income, the weaver has to make his wife work as an agricultural labourer and send his son to work as a beedi roller or a rope twister. Many of the women among the weaver families do not possess gold ornaments and the number of clothes they possess is limited.

Cooperative Society

Strangely enough, unlike many other crafts, the drugget weavers of Walajapet have not formed themselves into a Cooperative Society. By tradition they

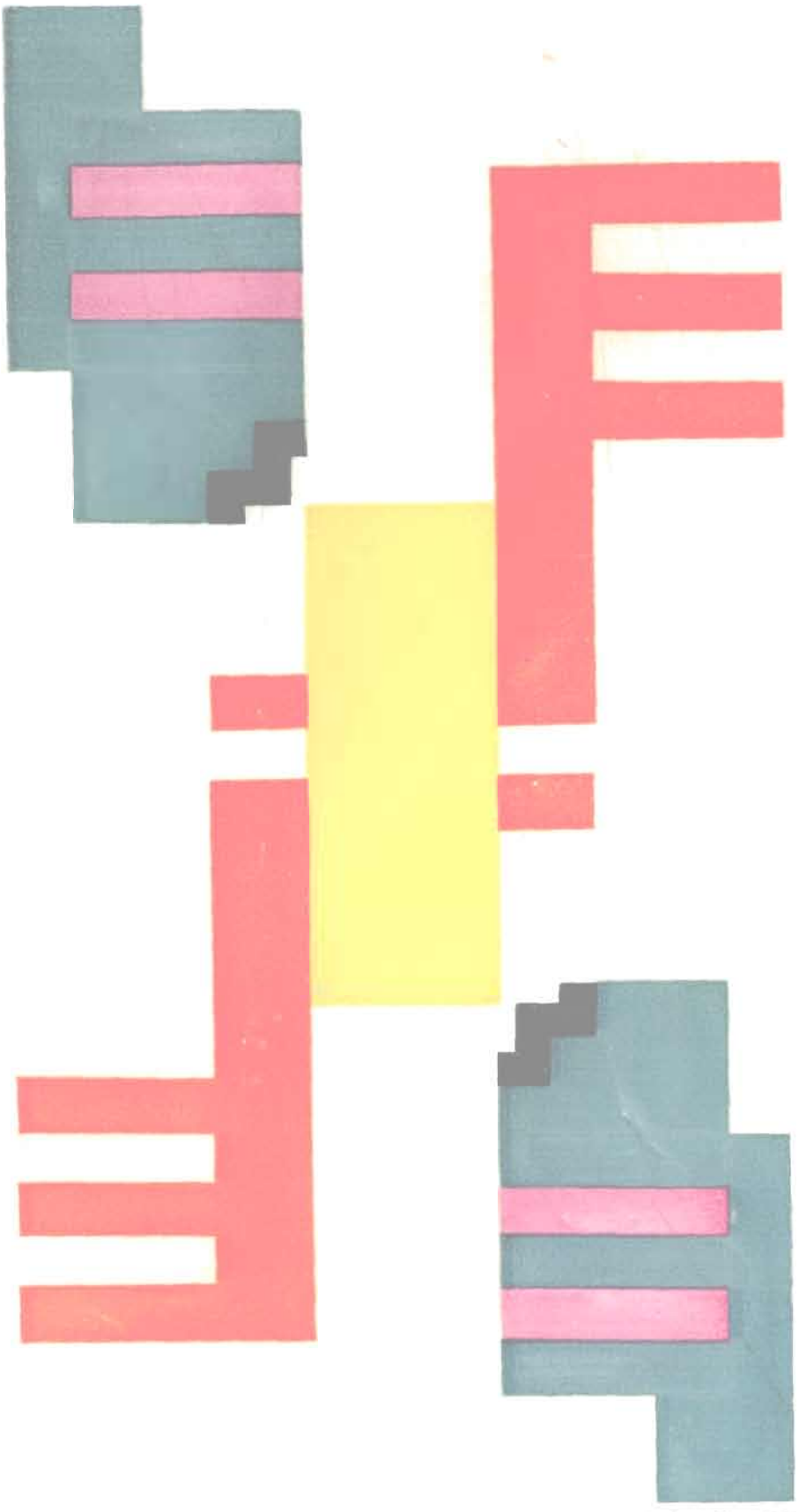


Weaver's house

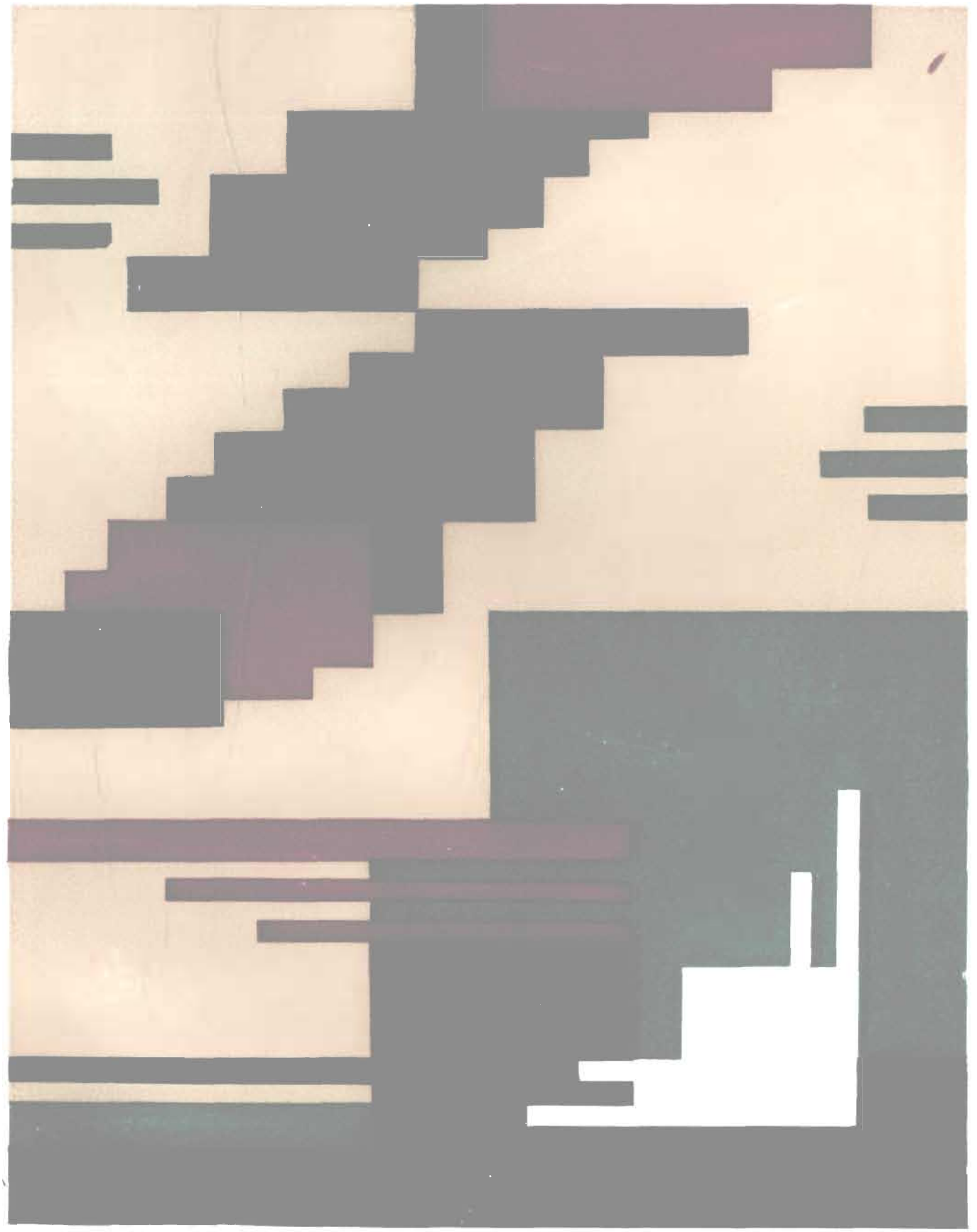
have been working under factory owners and they see no reason why they should form themselves into a Co-operative Society. They argue that the formation of a Cooperative Society is not likely to improve their economic condition. On the contrary, they feel it may lead to a lot of internal squabbles.

Marketing

Walajapet is only a production centre for the woollen drugget. It does not act as a commercial centre. Owners of the looms receive orders and advances from firms or individuals. Before the Second World War, some Madras firms like M/s Arbuthnot & Co. and M/s Leighton & Co., were placing orders with the owners of factories for the products of Walajapet. England mainly and to a certain extent Australia were the chief markets for these druggets and carpets. Afterwards America entered the field and there was thus a good demand for druggets and carpets before the advent of the Second World War. But these sales had to be effected in the face of stiff competition as there were many centres in India producing druggets and carpets of wool, cotton and silk. So in order to counteract fierce competition, the prices of druggets had to be lowered. In the initial stages, the quality exported to foreign markets was good. In the first flush of enthusiasm, larger quantities were manufactured, but this happy state of affairs could not last for long. The price of raw materials was increasing day by day and lowering the price of the drugget for the sake of increasing export potential was not good economics. Sooner or later, there was bound to be a reaction and this was in the shape of production of inferior quality druggets. The great distance between the producer and consumer made cheating possible by lowering the quality of the product. The effect of these could not but be quickly felt and as a result, importers in the London market realised that inferior quality products were being supplied to them and the reaction led to a gradual lowering of demand. This led to further fall in prices and high cost of raw materials. The decline of the industry was fairly certain and many weavers were thrown out of work and a number of factories shut down. Even to the present day good quality of druggets and carpets are not produced in Walajapet. The low quality drugget known as 'Bazarimal' as explained earlier, is distributed throughout South India. Of the good quality ones, nearly 75% is exported to North India and to foreign countries like America and London. The purchase tax and sales tax which the factory owners have to pay have also increased the price of the product



Design No. 222



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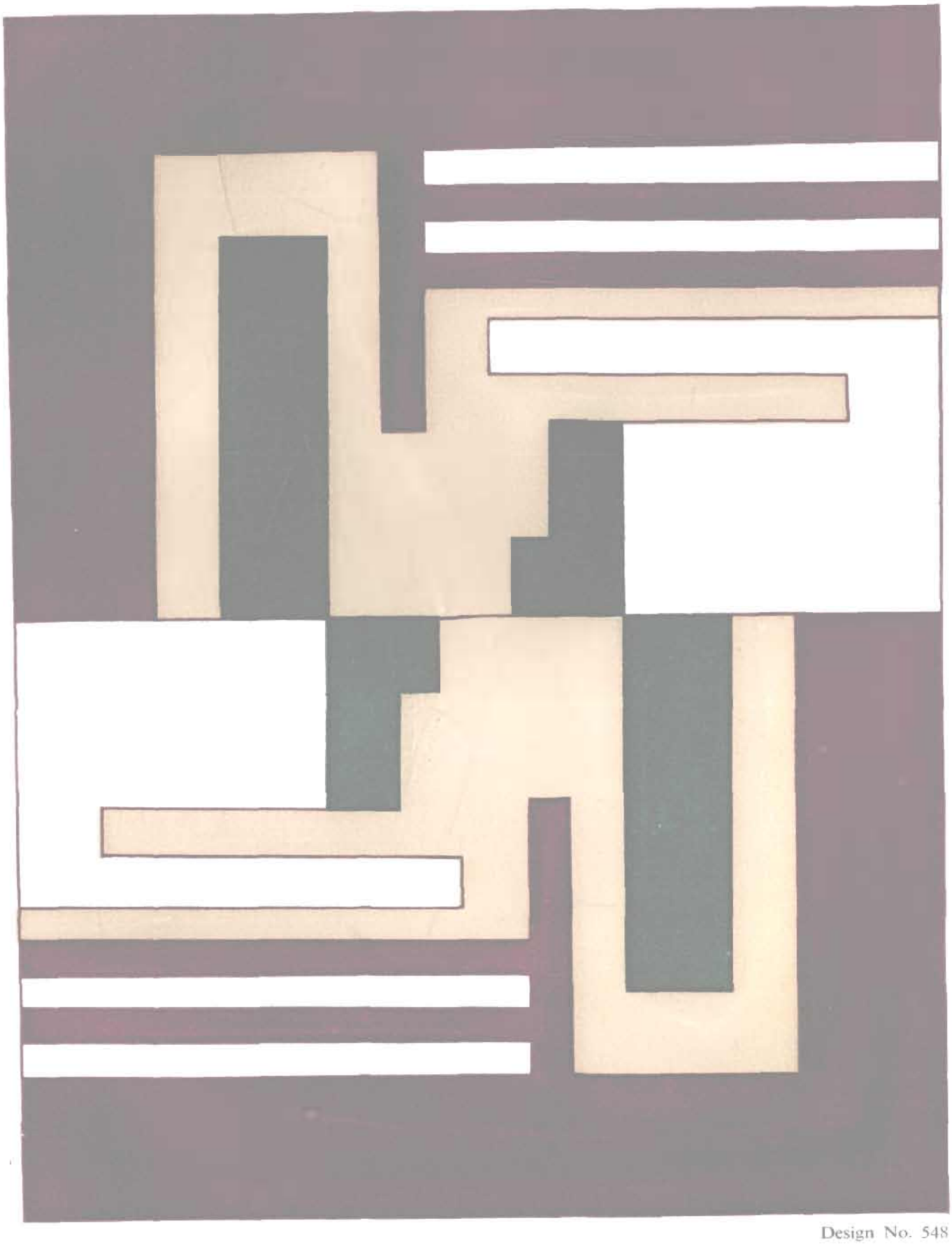
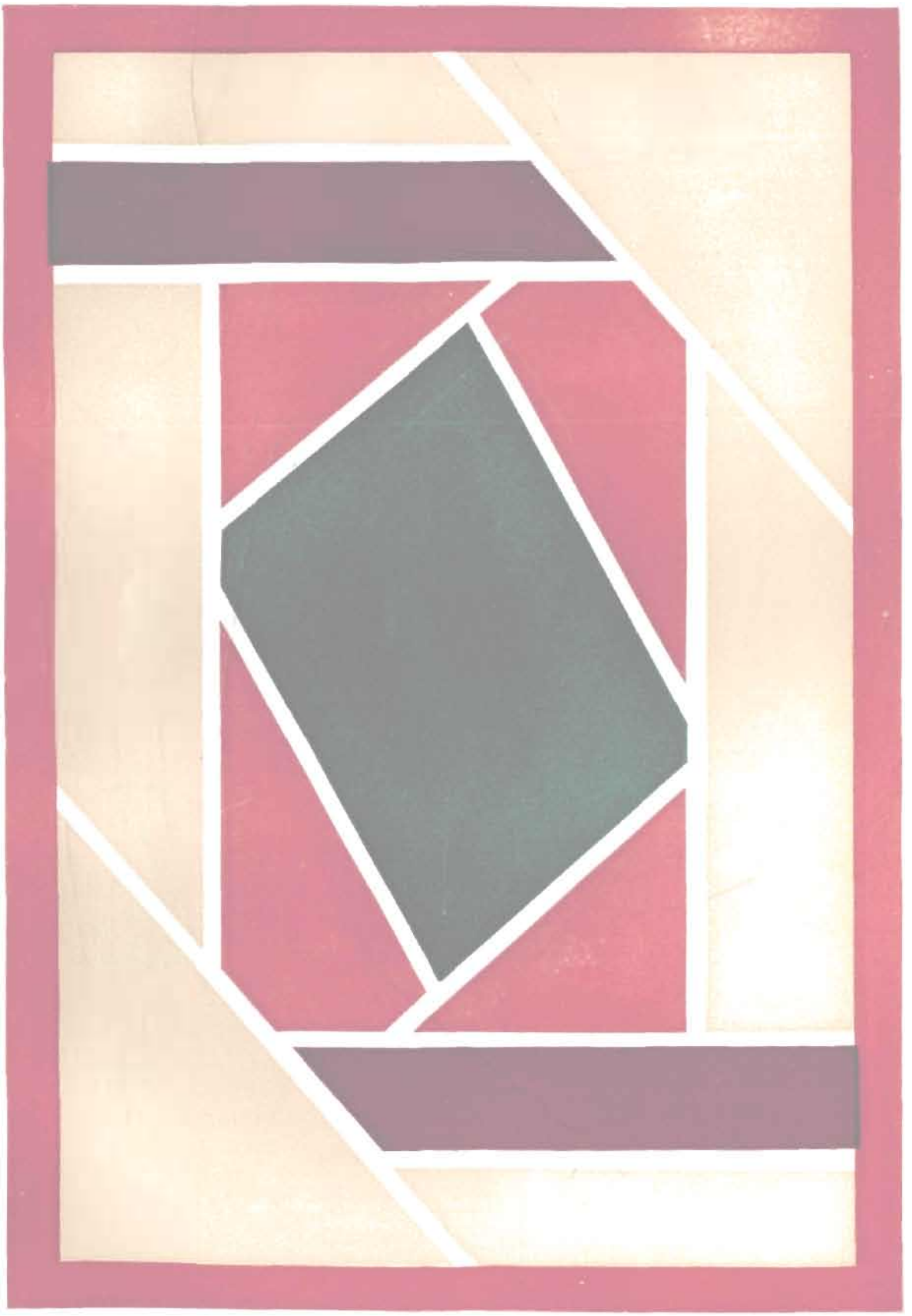


Design No. 548



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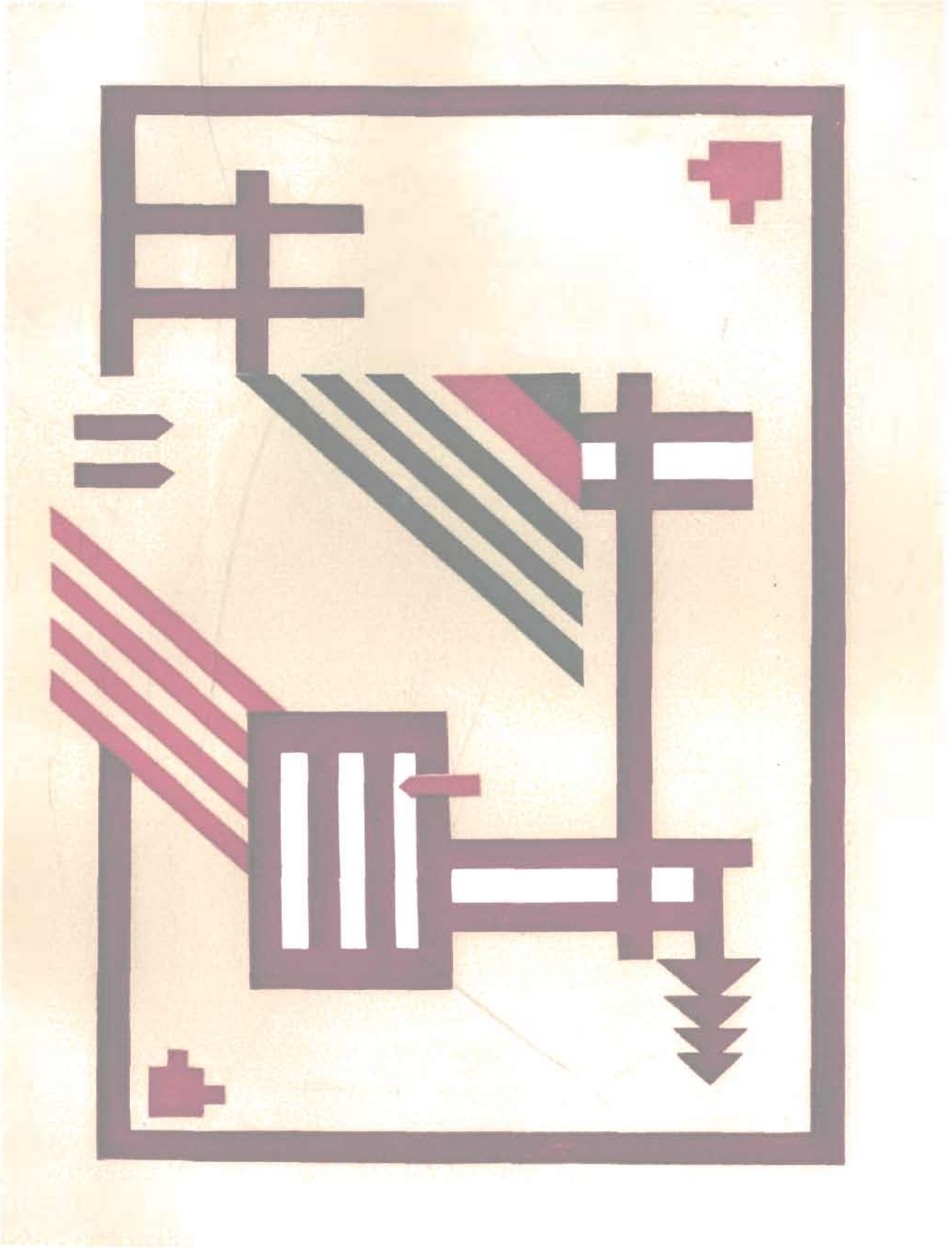
Design No. 704



Design No. 726

and so led to consequent fall in demand. Thus only a small number of carpets and druggets are being exported to America and England and these are produced mainly according to the designs and colours suggested by foreign firms; this is also true in the case of North Indian firms notably those situated in Delhi and
y. Full details as to the total number of
ts and carpets exported to foreign countries are
ilable. But the places to which carpets and
ts are exported are United Kingdom, United
of America, Germany and Australia. Substi-
for druggets are fibre mats, printed floor cloths,
jute carpets as well as Sun hemp druggets produced at Gopalasamudram in Tirunelveli District of Madras State. Compared to the Walajapet druggets, these substitutes are more durable and economical.

To summarise what has been said before, there are 78 looms in the town with about 113 weavers. The annual production is about 50,000 sq. yards and the annual outturn is nearly Rs. 60,000/- The wages of a weaver per month ranges between Rs. 35/- to Rs. 45/- and the profit accruing to the owner of the loom or factory per sq. yard of drugget ranges between 25 to 50 nP. depending on the colours used and designs woven.

CHAPTER IV

CARPETS

Introduction

"Madras carpets have lately fallen into disrepute, though probably as good carpets as ever have been made could be turned out if a healthy demand gave some encouragement to the weavers. The designs are oriental in character, but they are rather heterogenous including some borrowed from inferior modern Persian silk carpets, many Kashmir and Punjab designs generally unsuited to the quality of the wool in use, some good Madras patterns and others very debased".* For many years, Walajapet was famous for low grade carpets rather than for pile carpets. It was only in the year 1935 that the pile carpet industry was popularised in this town, thanks to the interest taken by Messrs. Kishinchand Chellaram. Muslims, Naickers and Pillais are the only three castes in the town who have taken to carpet weaving. All the Muslims and majority of the Hindu Naickers hail from Walajapet town while a few Naickers have come from a village called V. C. Mottur, a mile away from Walajapet. There are only two weavers of the Pillai community who are engaged in carpet weaving.

At the dawn of the 20th century, there were 4 pile carpet factories. But due to heavy losses sustained in the industry, these factories have switched over to the manufacture of druggets which though cheap, at least fetch them a steady income. Sri Chellaram, a leading magnate of Madras whose main business relates to textiles was attracted by the prosperity of the carpet industry. In 1935 he took charge of this industry at Walajapet. He opened a small factory which has now developed into a full-fledged factory, thanks to the trade contacts he had with foreign and Indian firms in textile business. The name he had made in the sphere of textiles he could use to popularise his carpets. The following Table indicates the number of families and the number of persons belonging to various communities engaged in the manufacture of pile carpets.

Name of the craft	Community	No. of workers working in the factory	No. of spinners working in their houses
Pile carpets	Hindus	22	50
	Muslims	6	25
	Total	28	75

* Havell: Pamphlet on Madras Carpets of India, 1886

The art of making pile carpets is a difficult one and therefore those people engaged solely in drugget manufacture cannot take to this craft. However, those engaged in the manufacture of pile carpets can also take up the weaving of druggets

Before the war years, Sri Chellaram was able to popularise Walajapet carpets in foreign countries, especially in England and Germany. Production reached its high watermark in 1939 when in one year more than 700 sq. yards of carpet was being produced at Walajapet. After the war, the trade collapsed due to the sudden rise in prices of wool, colours, wages and Factory Acts. Appendix 1 will throw light on the number of working looms, number of weavers in the industry before 1939 and in 1961.

Thus in the course of 22 years, 66% of the looms have been put out of commission and 72% of the weavers have left their traditional occupation. Lack of skilled workmanship is another reason for the decline of this craft.

TECHNIQUES OF PRODUCTION

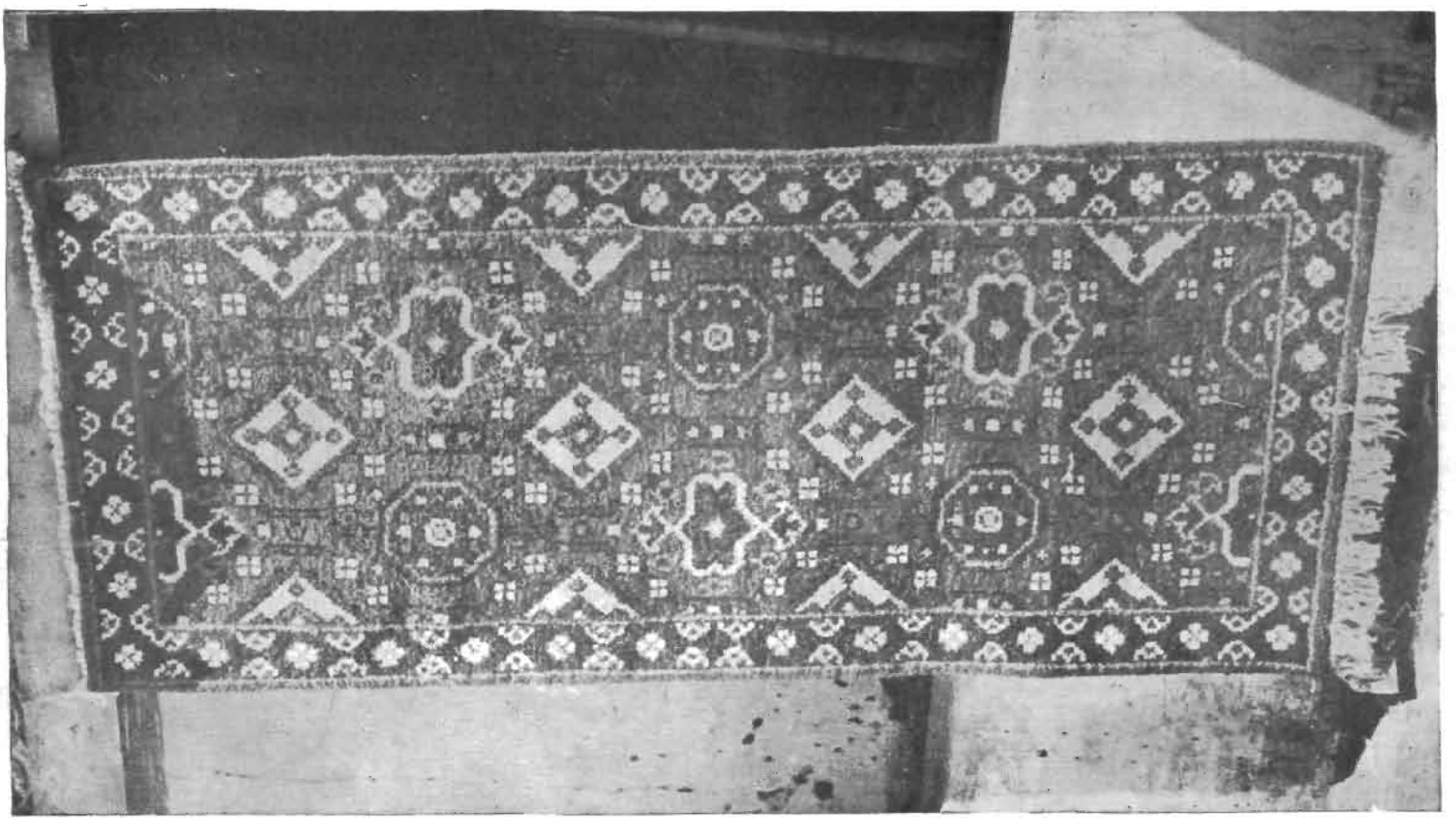
RAW MATERIALS

Wool

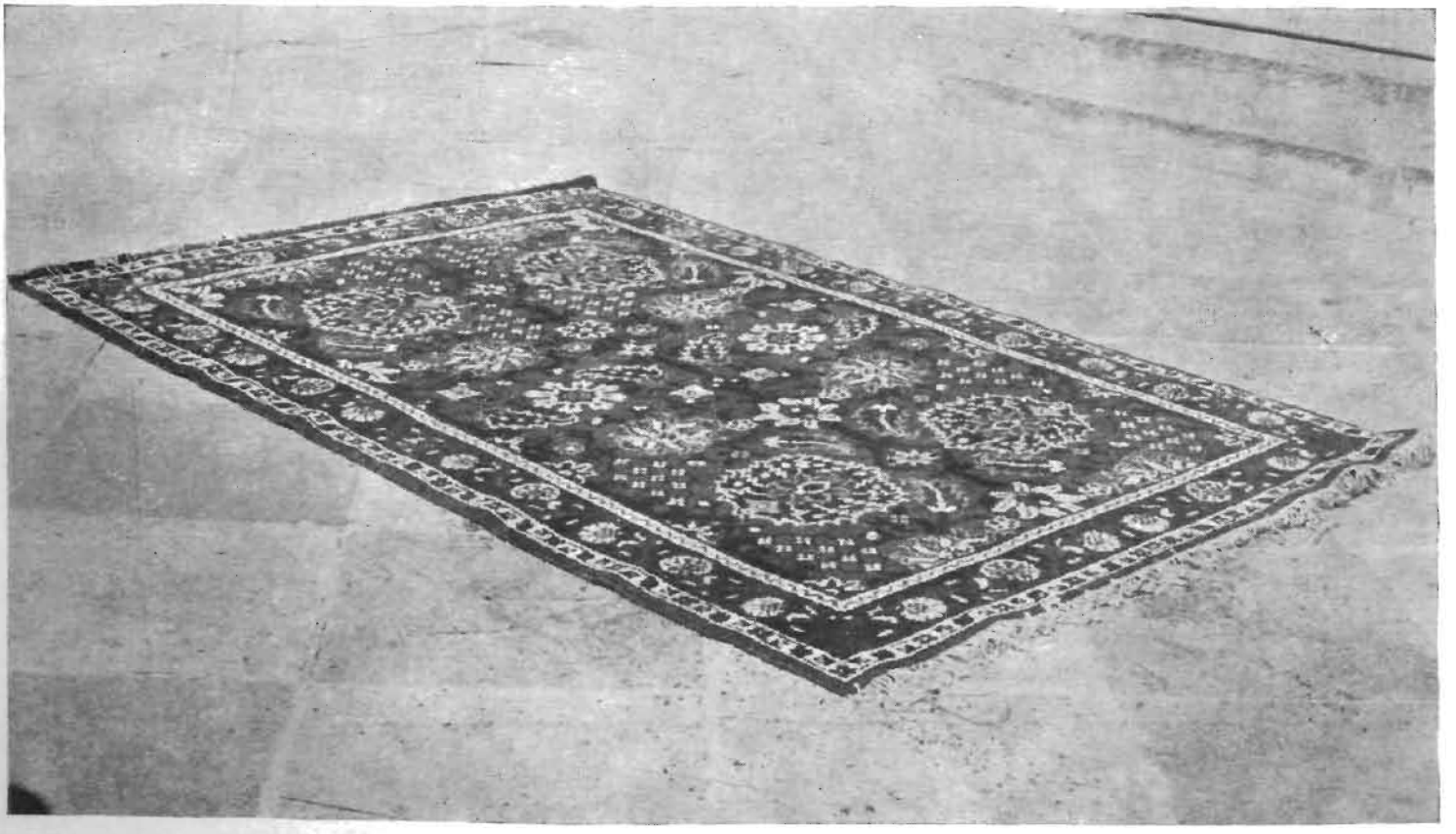
The raw materials utilised for the weaving of carpets are those used for the manufacture of druggets, i.e. wool and cotton. However, pulled wool is utilised for the manufacture of superior quality carpets while mixed wool is utilised in the case of inferior pile carpets. Lime wool is not utilised in the manufacture of carpets. Among the various shades of wool, the one most preferred and which goes into the manufacture of high quality carpets is white wool. Red wool is not very much in demand. Black, grey and rose are also used.

Cotton yarn

Cotton yarn which is used as warp is purchased from Madras, Coimbatore and Bangalore. This is obtained in bales, one bale consisting of 40 bundles of 10 lbs. each.



This traditional floral carpet design produced with pluck wool is known as Kala beed. Note the interlacing of square design with small flowers in the middle.



The most important and traditional design known as Hashim-Khani produced with the finest quality of wool is popular both in India and abroad.

Jute

The next important raw material is jute used in carpets (not in druggets). This is used as weft when the woollen yarn is knotted to the warp thread. Jute yarn is pressed twice and beaten with hatta or iron comb to adhere to the woollen yarn. Jute yarn is purchased from Madras in bales. One bale of 400 lbs. costs Rs. 300/-. The price has risen considerably since 1946, the price of 1 lb. in 1946 being one anna and in 1961 being seventy-five naya paise.

Dyeing

Most of the colours used in the manufacture of pile carpets are fast and hence the woollen yarn has to be dyed in hot water. These dyes are obtained from the Imperial Chemical Industries (I.C.I.), CIBA and other firms.

Tools and Equipments

The loom is the same for the pile carpets as for the druggets. In the factory maintained by Sri Chellaram, there are several looms ranging from size 3' to 23'. The most popular looms utilised are those of 4' breadth and 9' breadth. As in drugget weaving, more than one weaver is required if a carpet of breadth over 3' has to be woven.

Manufacturing Processes

Fresh from the tanneries, the wool is washed in soap water and dried in the open sun. It is afterwards dyed to the required colour—pink, red, blue, green as the case may be—and sent for carding in the saw blade carding machine. Since pulled wool and mixed wool are used, the charges for carding is higher than what it is for drugget weaving where lime wool is mostly used. During the carding operation, the wastage will be as follows:

Pulled wool ... 12%
Mixed wool ... 18%

Spinning

The carded wool is then distributed among the women spinners. The spinning is done in their own houses. There are 75 women spinners who are experts in handling pulled wool. The spun woollen yarn is then rolled in the shape of a ball containing 30-50 yards. In a 1 lb. hank of woollen yarn, there will be 500-600 yards of thread. For one stone weight of 7½ lbs of carded wool, a spinner gets, on an average, a wage of Rs.1.25 to Rs.1.50. Since it is not possible to weave this amount of wool in one day the average daily income varies between 62 nP. to 88 nP. In certain cases, the spun woollen yarn is dyed. The spun woollen yarn is washed in soap water, rinsed once again in plain cold water and allowed to dry on bamboo sticks. The yarn is then dipped in hot water to which the dyes and chemicals are added and after dyeing, it is sent to the loom for weaving. Since fast colours are required for carpets, dyeing has to be done carefully. In the Chellaram factory an expert dyer is employed.

Twisting

Twisting of the cotton yarn for the warp is done by 9 Saurashtra women. Sri Balakrishnamoorthy is the main supplier of twisted cotton yarn to some of the factories. As in the case of drugget weaving, cotton thread of 10 counts is purchased in bundles and handed over to the women twisters. On the charka, the cotton thread of 10 counts is twisted. The only difference between drugget weaving and carpet weaving is that for carpets, 12 ply yarn is used instead of 6 and 8 plys.

Weaving

The twisted yarn of 12 ply is fixed vertically to the loom and before commencing weaving operation, the weaver inspects the loom and checks up whether the warp cotton thread has the necessary tension. The loom is arranged in a vertical position between two strong horizontal beams placed 4 or 5 yards apart or even more, depending on the size of the loom. The beams can turn round upon their own axes. To commence weaving, the pile carpet weaver sits on a wooden plank resting his legs in the trench, the dyed wool of rainbow colours are rolled in conical balls and allowed to hang over their heads. The weaver pulls a piece of wool and passes it in a figure of eight (8) and each thread will be cut off with a sharp knife; the ends which stick out in front is called the knot or stitch. In this knot the two ends of wool stick out between each thread of the warps. Whenever he has to use a different colour, he leaves the old one and takes up the thread of the required colour. He is such an adept at this art that he knows instinctly when he has to use a particular colour, so that he can complete the design as required. To refresh his memory, he has the design drawn on graph paper in front of him. The passing of the wool round the thread in a sort of figure 'eight' and the cutting of it are done so rapidly that it is impossible for an observer to find out how the wool is passed into the thread. This is done for each thread till one row of stitches has been put in, then the jute yarn is passed on both ways by thread between the warp and beaten down by hatta and threads crossed, then the second twine of jute thread comes after changing the position of warp and the Ani is realised to cross and

again the weaving continues after each row of piles has been put in it with the rainbow coloured woollen yarn. It is cut off with scissors for levelling. This process is continued till the whole carpet has been completed. Durability and the cost of the carpet does not depend only on this process. Quality of the wool, colour, design and stitches per square inch—all these put together makes the carpet costly and lovely to look at. Any kind of design, floral or geometrical can be executed on the carpet. Any amount of stitches can be woven at Walajapet, but during the survey we found that only 4 stitches per inch and 16 stitches in a sq. inch were in vogue at the Chellaram factory. The exact meaning of stitch is just a passing of dyed woollen yarn and knotting with an ordinary knot around the warp threads in a figure of 'eight' and cutting the dyed woollen weft thread with a sharp knife. In one square inch of a carpet there will be many number of stitches or knots. If the stitch increases the quality will be good and the price will be higher as it takes lot of time and labour to weave the texture closely. In 1′ length of fabric, there would normally be 54 picks of jute yarn and 54 picks of woollen yarn. The pile varies from $\frac{1}{8}$″ to $\frac{1}{2}$″ in length. Carpets of any length can be woven, but the breadth depends on the size of the loom. Thus the maximum breadth which can be woven is about 23′.

Designs

The beauty of a carpet can be judged by its colouring and designs. The carpet designs are mostly traditional and copied to a certain extent from Persia. Carpet designs are unlike those of druggets which are modern and geometrical. Though designers have introduced modern designs, yet the demand is for old and traditional designs which have floral motifs woven on the surface. The most important of the traditional designs are the Hashim Kani, Bonthai Iran and Kala Beed. These are the designs woven on the carpets produced at Walajapet. As the very names imply, these are mostly traditional Persian designs. These designs are normally given serial numbers as they have universal recognition and it is customary for firms while placing their orders to indicate by serial numbers the particular design they require. Only in the factory of Kishinchand Chellaram a paid designer is employed who prepares designs on graph paper with detai ed instructions regarding the colours to be used and these are given to weavers who faithfully reproduce them on the carpets. But the Walajapet weavers are not averse to producing carpets according to any design given to them by customers. A few of the other designs for carpets are named Prince of Wales and Zig Zag Bell etc. Unlike the druggets, carpets cannot be used on both sides and therefore designs are woven only on one side. A few of the traditional and modern designs which are well known by their serial numbers are 702, 712, 719, 718, 1116, 1602 and 1603. The following is a description of two designs:

Kalabeed Design No 712:

A pile carpet with this design was being woven during the time of our survey. This was made to order for an executive in Europe. Proper blend of two colours and interlacing of rectangular and square designs with small floral motifs in the middle made a very harmonious combination. The colours were light blue, rose and pink.

Hashim-Khani Design No 1116:

This consists of a long row of symmetrical small flowers on all the four sides of the border. The centre consists of beautiful flowers in a blaze of colours. The following colours are utilised: red, green, blue and pink. The borders and the background display excellent workmanship and the entire carpet displays harmonious blend of colours pleasing to the eye.

Further, there were one or two carpets made specially to order for the foreign market, one in complete light green and the other being 'off white' in colour. The so-called white centre of the carpet is really ivory white, off white or camel white, the latter being darker. "If the ground of a carpet is pure white, it is almost impossible that it looks well. When I make this assertion, I was often told that some of the Indian carpets which I so much admire have white grounds. This is a mistake. Some of them have light grounds, but not pure white. They have light creamy-grey or greenwhite grounds, but not pure white and this variety of tone altogether alters the case. Red is also used and carpets with an Indian red centre look like silk when made of extra quality"*.

Carpets are more reliable, strong and durable than druggets. Good quality of wool and jute yarn are used for the weft. The cotton yarn is also of 12 ply unlike the 8 ply for the druggets. The special process of knotting and cutting it makes the pile carpets look lovely and soft in texture.

After the carpet has been woven, the surface is trimmed with a pair of special kind of scissors, and is cleansed with a soft cloth, broomstick or with a brush. Packing and despatching is done in the same manner as described in the case of druggets.

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* Dresser: Principles of Decorative Designs

Wages

The wage varies with the fineness of the work. In pile carpets, the weavers may earn 4 to 8 annas more than those engaged in drugget weaving. The carder of the wool will earn Re. 1 to Rs. 1.25 per day. The woman spinner gets from 75 nP. to Rs. 1/- per day. The twister of cotton yarn gets beween Rs. 1.25 to Rs. 1.75 per day. The expert dyer is poorly paid for his art, his income ranging from Rs. 1.50 to Rs. 2/- per day. Since he works for about 15 days in a month, he does not earn more than Rs. 30/- p.m. The weaver who sits beside his loom gets slightly more than his counterparts engaged in drugget manufacture. The pile carpet weaver's wage depends on the number of knots which go into an inch. Normally for 16 stitches per sq. inch, he will get Rs. 2.25 per day. High quality carpets may even have upto 64 stitches in a sq. inch. Then the wage increases and goes upto Rs. 3/- per day. But in a 6 hour day, the weaver cannot weave more than ½ sq. yard. The designer who is attached to the Chellaram factory whose job is to evolve new designs given by prospective customers is paid Rs. 120/- p.m. In fact, he is the most highly paid in the organisation. For packing, despatching and giving final touches to the carpet, no wages are paid.

Production

There were two or three factories producing pile carpets. Two of them have stopped carpet production and are engaged in the production of druggets. The only factory which is producing pile carpets along with druggets is Chellaram & Co. started in 1935. These carpets are exported to United Kingdom, United States of America, Switzerland, Germany, Africa and Gibralter. The carpets are also sent to centres in North India like Bombay and Delhi. Nearly 90% of the production is disposed in United Kingdom. The following Table indicates the total production of pile carpets in Walajapet for the last 11 years and the value.

Name of the craft	Years of production	Total sq. yards	Value in rupees
Pile carpet	1952	600	15,000
	1953	500	12,500
	1954	300	7,500
	1955	200	5,000
	1956	200	5,000
	1957	250	6,250
	1958	300	7,500
	1959	400	10,000
	1960	400	10,000
	1961	500	12,500
	1962	550	13,750

The American markets are flooded with various cheap carpets and good designs of floor coverings from Japan, Iran and Kashmir. Again the carpets of Kashmir, Agra, Jaipur and Benares compete successfully with the Walajapet carpet and are much better known and enjoy a better reputation both at home and abroad compared to the Walajapet carpet. As such, the carpet industry at Walajapet is never a stable one and is on the decline and unless the manufacturers are in a position to supply at competitive rates, step up their production and improve the quality, the future of this industry appears to be rather gloomy. The cost of wool is going up by leaps and bounds, side by side with the cost of cotton yarn, jute, and dyes to make it well nigh impossible for them to reduce the prices. Again prior to 1952 the railways had extended concesions such as transport of raw materials from the tanneries at Ambur and Vaniyambadi to the factories located at Walajapet at half freight rate, the transport of finished goods to the various marketing centres in India also at half cost. But these concessions were withdrawn all of a sudden, resulting in increased transport costs and thus raising the prices of finished goods. The increased transport charges thus directly have dealt the industry a severe blow. The Factory Acts which prohibit the employment of people below the age of 15 blocking a valuable ground of training, and the inertia which is encouraged, thanks to the 8 hour work day is another blow to the industry. Thus the druggets and carpets, especially the pile carpets of Walajapet, the centre of carpet and drugget manufacture is going out of the field mainly because of the ignorance of the weavers, the difficult conditions and the lack of faith in old and traditional designs. For this deterioration in the art of weaving carpet and drugget the blame lies at the door of the customer. Unless something is done, this industry may well become extinct. We cannot better conclude than in the words of Sir George Birdwood, "Few people seem able to realise that when buying oriental carpets, they are in fact choosing works of art and not manufacturer's piece goods produced at competitive prices. Formerly the native artist strove his utmost to produce a pleasing design, knowing that the payment he would obtain for his work would depend upon the beauty of its design and super-excellence of fabrication; but now his first thought is to reduce his work to the tariff of charges ruling in the European markets and to deliver it punctually within the time fixed by the export firms of Calcutta, Madras and Bombay".

APPENDIX 1

DRUGGETS

Name of the Factory Owners, Looms and Weavers before 1946 and in 1961

Before 1946							In 1961						
Sl. No.	Name of the Factory Owner	Number of working looms	Number of workers	Sowrashtras	Muslims	Hindu Naickers	Sl No.	Name of the Factory Owner	No. of working looms	No. of workers Total	Sourashtras	Muslims	Hindu Naickers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1.	B. G. Balakrishnamoorthy (Druggets & Carpets)	19	54	20	10	24	1.	K. A. Wahid (Druggets)	10	20	0	12	8
2.	B. Kuppuswamiiah (Druggets & Carpets)	12	40	17	9	14	2.	Hameed Khan (Druggets)	8	14	1	10	3
3.	B. V. Nagendraiah (Druggets & Carpets)	12	40		16	15	3.	Kannaiah Chetty (Druggets)	4	7	0	3	4
4.	B. V. Venkatachalapathi (Druggets)	8	22	4	5	13	4.	K. Ganesh (Druggets)	2	3	0	2	1
5.	B. V. Ramaiah (Druggets & Carpets)	12	35	10	12	13	5.	S. Sokkaiah (Druggets)	4	5	0	1	4
6.	B. K. Nagendraiah (Druggets)	2	4	3	0	1	6.	M. Gopal (Druggets)	7	10	0	0	10
7.	Mehar Unnisha (Druggets)	10	25	6	7	12	7.	Mehar Unnisha (Druggets)	1	2	0	2	0
8.	Abdul Lateef (Druggets & Carpets)	20	50	0	30	20	8.	P. R. Perumaliah (Druggets)	2	2	2	0	0
9.	S. Rajaiah (Druggets)	5	10	5	0	5	9.	Rajaiah & Sons (Druggets)	8	18	0	0	18
10.	Kishinchand Chellaram (Druggets & Carpets)	50	100	0	60	40	10.	Kishinchand Chellaram (Druggets & Carpets)	32	32	0	4	28
11.	K. A. Wahid (Druggets & Carpets)	30	60	0	40	20							

APPENDIX 2

Looms in the Factories and Wages paid to the Workers

Sl. No.	Name of the factory Owners	Religion	Total number of looms	Number of looms working	Number of looms idle	Number of workers working in the factories	Wages per day of the worker	Year of Establish-ment	Name of the craft
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
							Rs.nP.		
1	K. A. Wahid	Muslim	50	10	40	20	1 50	1912	Drugget weaving
2	Hameed Khan	,,	11	8	3	14	1 50	1951	,,
3	Kannaian Chetty	Hindu	4	4	...	7	1 50	1954	,,
4	K. Ganesh	,,	5	2	3	3	1 50	1941	,,
5	M. Gopal	,,	7	7	...	10	1 50	1959	,,
6	S. Sokkaiah	,,	4	4	...	5	1 50	1950	,,
7	Mehar Unnisha	Muslim	1	1	...	2	1 50	1958	,,
8	P. R. Perumalaiah	Hindu	2	2	...	2	1 50	1961	,,
9	S. Rajaiah & Sons	,,	16	8	8	18	1 50	1942	,,
10	Kishinchand Chellaram	,,	36	32	4	32	1 75	1935	Pile Carpets and Druggets

APPENDIX 3

Cost of Production of Ordinary Druggets of Various Sizes

Sl. No.	Breadth and length of the drugget	Raw wool required	Cost of the Raw wool	Carding charges	Spinnig and twisting charges	Dyeing charges	Cotton thread required for warping	Cost of the cotton thread with twisting charges	Weaving charges	Sales tax parcels and exporting charges	Cost price	Sale price	Profit	Number of workers engaged in weaving	No. of days and hours taken for the completion of one drugget	
															Days	Hours
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	lbs	lbs	Rs.nP.	Rs.nP.	Rs.nP.	Rs.nP.	lbs.Oun.	Rs.nP.	Rs.nP.	Rs.nP.	Rs.nP.	Rs.nP.				
1.	1½'x3'	3	0.65	0.06	0.19	0.25	0 1¼	0.19	0.38	1.78	1.78	2.00	0.22	1	...	2½
2.	2'x5'	6	1.56	0.13	0.37	0.50	0 2½	0.37	0.75	0.13	3.81	4.00	0.19	1	...	5
3.	3'x6'	12	2.60	0.25	0.75	1.00	0 5	0.75	1.50	0.25	7.10	8.00	0.90	1	...	10
4.	4'x7'	18	4.16	0.38	1.12	1.50	0 7½	1.12	2.25	0.38	10.91	12.00	1.09	2	...	1½
5.	5'x8'	24	6.24	0.50	1.50	2.00	0 10	1.50	3.00	0.50	15.24	16.00	0.76	2	...	1½
6.	6'x9'	36	7.80	0.75	2.25	3.00	0 15	2.25	4.50	0.75	21.30	24.00	2.70	2	...	1½
7.	9'x12'	72	15.60	1.50	4.50	6.00	1 14	4.50	9.00	1.50	42.60	48.00	5.40	3	2	...
8.	12'x15'	120	26.00	2.50	7.50	10.00	3 2	7.50	15.00	2.50	71.00	80.00	9.00	4	3	...
9.	15'x20'	180	46.80	3.75	11.25	15.00	4 11	11.25	22.50	3.75	114.30	120.00	5.70	5	4	...

APPENDIX 4

Cost of Production of Superfine Druggets of Various Sizes

Sl. No.	Breadth and length of the drugget	Raw wool required	Cost of the Raw wool	Carding Charges	Spinning and twisting charges	Dyeing Charges	Cotton thread required for warping	Cost of the cotton thread with twisting charges	Weaving charges	Sales tax, parcels and exporting charges	Cost Price	Sale Price	Profit	Number of persons engaged in weaving	No. of Days and Hours taken for the completion of one drugget	
															days	hours
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	lbs.	lbs.	Rs. nP.	Rs.nP.	Rs. nP.	Rs.nP.	lbs. Oun.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.			
1.	1½′ x 3′	3	2.77	0.06	0.19	0.50	0 1¼	0.19	0.62	0.06	4.39	4.50	0.11	1	...	2½
2.	2′ x 5′	6	6.25	0.13	0.37	1.00	0 2½	0.37	1.25	0.13	9.50	10.00	0.50	1	...	5
3.	3′ x 6′	12	11.07	0.25	0.75	2.00	0 5	0.75	2.50	0.25	17.57	18.00	0.43	1	...	10
4.	4′ x 7′	18	17.32	0.38	1.12	3.00	0 7½	1.12	3.75	0.38	27.07	28.50	1.43	2	...	10
5.	5′ x 8′	24	25.00	0.50	1.50	4.00	0 10	1.50	5.00	0.50	38.00	36.00	2.00	2	1½	...
6.	6′ x 9′	36	33.21	0.75	2.25	6.00	0 15	2.25	7.50	0.75	52.71	55.00	2.29	2	1½	...
7.	9′ x12′	72	66.42	1.50	4.50	12.00	1 14	4.50	15.00	1.50	105.42	109.00	3.58	3	2	...
8.	12′ x15′	120	110.70	2.50	7.50	20.00	3 2	7.50	25.00	2.50	175.70	180.00	4.30	4	3	...
9.	15′ x20′	180	187.50	3.75	11.25	30.00	4 11	11.25	37.50	3.75	285.00	270.00	15.00	5	4	...

APPENDIX 5

Carding Machine

Name of the craft	Name of the village	Name of the owner of the carding machine	No. of carding machines working and no. of carding machines idle		No. of persons engaged in carding machine		Improvement stage by stage of carding machine	Important tools necessary to fix and run the carding machine	Wages for a carding machine worker per day in different factories
			Working	Idle	Males	Females			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
									Rs. nP.
Drugget weaving	Walajapet (North Arcot District)	B. Rukmaniammal D/o B. G. Balakrishnamoorthy)	1	...	2	3	1. Man power (before 1929)	1. Nail system (Rs 1000/-) Saw blade system (Rs 22000/-) carding roller	1.25
		B. Kuppuswamy Iyer	1	1	1	3	2. Man power (after 1929)	2. Current motor Rs 900/-	1.00
		Kishinchand Chellaram	1	...	1	3	3. Oil engine (after 1932)	3. Status Rs 125	1.13
							4. Electric power 1935)	4. Switcher (two) Rs 50/-	
								5. Cut outs (three) Rs10/-	
								6. Wiring charges Rs 100/-	
								7. Belts Rs 150/-	
								8. Beds Rs 100/-	
								9. Counter saft Rs 350/-	
								10. Building Rs 3000/-	

APPENDIX 6

Carding

Sl. No.	Type of wool	No. of times carded	Time taken for I (trip) (Hours)	Time taken for II (trip) (Hours)	Time taken for III (trip) (Hours)	Carded wool per day (in pounds)	Charges for carding the wool	Type of the machine used
1.	Lime wool	2	2	5	...	925 lbs.	0.6 np. per stone weight for I time	Carding machine with nail system
2.	Pulled wool	3	2	2½	2	225 lbs.	0.56 np. for all 3 trips. I trip 12 np. II trip 19 np. III trip 25 np. (per stone weight)	Carding machine with saw blade system
3.	Mixed wool	3	2	3	3	600 lbs.	0.34 np. for all 3 trips. (per stone weight)	Carding machine both nail system or saw blade system used.

APPENDIX 7

Prices of Colours

Sl. No.	Weight	Name of the colour	Prices in 1940 (acid colour) Rs. np.	Prices in 1961 (acid colour) Rs. np.	Percentage
1.	1 lb.	Green	1.25	25.00	1900%
2.	1 lb.	Red	1.00	20.00	1900%
3.	1 lb.	Brown	0.35	7.00	1900%
4.	1 lb.	Yellow	0.80	16.00	1900%

APPENDIX 8

Dyes

Sl. No.	Length and breadth of the Drugget	Name of the colour	Colour required in palams*	Cost of the colour	Cost of the oxide	Cost of the fuel	Total cost of the colour	Weight of the wool required for dyeing
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
				Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	lbs.
1.	1′ x 2′	Green	0.33	0.15	0.03	0.06	0.57	1
2.	2′ x 5′	Green	0.52	1.00	0.10	0.40	2.02	6
3.	2′ x 5′	Red	0.32	0.50	0.10	0.40	1.32	6
4.	2′ x 5′	Yellow	0.40	0.50	0.10	0.40	1.40	6
5.	3′ x 6′	Green	1.04	2.00	0.19	0.75	3.98	12
6.	3′ x 6′	Red	0.65	1.00	0.19	0.75	2.59	12
7.	3′ x 6′	Yellow	0.81	1.00	0.19	0.75	2.75	12
8.	6′ x 9′	Red	1.95	3.00	0.60	2.00	7.55	36
9.	6′ x 9′	Green	3.12	6.00	0.60	2.00	11.72	36
10.	6′ x 9′	Yellow	2.43	3.00	0.60	2.00	10.03	36
11.	9′ x12′	Green	6.24	12.00	1.20	4.00	23.44	72
12.	9′ x12′	Red	3.90	6.00	1.20	4.00	15.10	72
13.	9′ x12′	Yellow	...	6.00	1.20	4.00	11.20	72

12.8 palams = 1 lb

APPENDIX 9

Cotton Yarn

Serial No.	Main material (cotton yarn)	From where it is imported	No. in counts	Weight of the yarn	Cost of the cotton yarn	Length of the cotton yarn before twisting 8 plys	Length of the twisting yarn after twisting 8 plys	No. of yards shrunk in twisting	Cost of the twisted yarn
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Additional Branch	Bangalore	10 counts	½ tola	0.02	112	103	9	0.02
2.	(7 Additional Branches) = 1 Branch	Coimbatore	,,	1¼ palams	0.18	787	724	63	0.20
3.	(5 Branches) = 1 Hank	Madras & some famous yarn Mills	,,	½ lb.	0.90	3,937	3,624	315	1.00
4.	(20 hanks) or 1 Bundle		,,	10 lbs.	18.00	78,750	72,450	6,300	20.00
5.	(40 Bundles) = 1 bale		,,	400 lbs.	720.00	31,50,000	28,98,000	2,52,000	800.00

APPENDIX 9 A

Twisting

Sl. No.	No. of houses engaged in twisting at Walajapet	Number of workers engaged in twisting		No. of spindles used in each house in twisting	Wages for twisting per day for one worker
		Male	Female		
(1)	(2)	(3)	(4)	(5)	(6)
					Rs. nP.
1.	B. Rukmaniammal	...	3	20 spindles	1.50
2.	Savitriammal	...	3	8 spindles	1.25
3.	Sitammal	...	3	12 spindles	1.00

APPENDIX 10

Main and Subsidiary Materials Required for Drugget Weaving

Sl. No.	Name of the material	Use of the material	Who makes the material	Cost of the material	Name of the place from where it is obtained
(1)	(2)	(3)	(4)	(5)	(6)
			Main Materials:		
1.	Wool	Wool is the main material. It is used as weft in Drugget Weaving.	Wool is fetched from sheep and goats.	Inferior quality of wool 1 lb. = Rs. 0.50 Superior quality of wool 1 lb. = Rs. 2.50	1. Vaniyambadi 2. Salem 3. Ambur 4. Dindigul
2.	Cotton yarn of 10 counts	This second important raw material serves as warp and gives temper to the drugget.	Cotton yarn Mills.	1 lb. = Rs. 2.00	1. Coimbatore 2. Pondicherry 3. Madras
			Subsidiary Materials:		
3.	Soap	Soap is used for washing purposes. It removes dust from the raw wool.	Factories.	One bar cost Rs. 0.75	Walajapet
4.	Ordinary Salt	It is used for washing and dyeing purposes.	It is extracted from the sea-water.	1 lb. = Rs. 0.06	Madras
5.	Globber Salt	It is used for washing and dyeing purposes.	Chemical Factories.	1 lb. = Rs. 0.19	Madras
6.	Sulphuric Acid	It is used for dyeing purposes and to make the colour dark and bright.	Chemical Laboratories.	1 ounce = Rs. 0.25	Ranipet
7.	Dyes (Colours)	After bleaching the woollen yarn it will be dyed in various colours to attract the customers eyes.	Chemical Factories.	Rs. 15 to Rs. 20.	1. South India Dyes Company, Madras–1 2. I. C. I. Company, Madras (Imperial Chemical Industries) 3. Jeevandas Lalgee & Sons., Madras–1
8.	Acetic Acid	It is used to remove the dust and grease and to make the colours fast and bright.	Chemical Laboratories.	1 lb. = Rs. 0.75	Madras

APPENDIX 11

Tools and Equipments

Sl. No.	Name of the Tool	Use of the Tool	Who makes the Tool	Cost of the Tool	Name of the place from where it is imported	Measurement of the Tool L x B x H
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Carding Tool:			
1.	Carding Machine (single roller)	Single roller carding machine of saw blade system helps to open the pulled wool.	Mechanical Engineer	Rs. 1,700	Madras, Bangalore	9′ x 3′ x 5′
2.	Carding Machine (double roller)	Double roller carding machine of nail system helps to open the lime wool.	Mechanical Engineer	Rs. 2,200	Madras, Bangalore	10′ x 3′ x 5′
			Spinning Tool:			
3.	Wool spinning charka	Raw wool is spun on the charka after carding is over.	The Carpenter makes the Charka with wooden planks	Rs. 12.00	Walajapet.	4′ x 2½′ x 3′
			Twisting Tools:			
4.	Cotton yarn twisting Charka (Thanirat)	Used for twisting the cotton yarn of 6 or 8 plys which serves as warp thread to Druggets and Carpets.	Carpenter and Blacksmith	Rs. 60.00	,,	5′ x 3′ x 4′
5.	Iron Spindle (Thaklee)	It is the main tool in the Charka. The carded wool is attached to it to draw the woollen thread.	It is of iron, made by blacksmith	Rs. 1.00	,.	6″ length thickness ¼″
6.	Speeding hooks' plate	It is used to take the cotton yarn from the twisting charka to the required length so that it may not get attached with one another.	It is made of wooden plate and iron rods by the carpenter.	Rs. 6.00	,,	3′ x 4″ x 10″
7.	Hanging hooks stand	To hold the cotton yarn at a distance of twisting so that it may not come into contact with one another.	It is made by the carpenter with iron hook and wooden plate.	Rs. 1.00	,,	3′ x 2″ x 9″
8,	Cotton yarn drawing wheel (portho)	Cotton yarn of 10 counts is spread on it and holding the thread it is drawn into 6 or 8 plys.	Made of bamboo plates with sticks on all the sides.	Rs. 1.50	,,	1½″ x1¼″x1′

9.	Drawing wheel stand (Thapo)	Thapo is the stand for the drawing wheel. The wheel will be fixed in the stand which helps to move fast.	It is made of wood and iron rods by the carpenter.	Rs 1.00 ,, ,,		Iron rod height 2′ thickness ¼″ Stand L=1 x B½′ H x ¼′
10.	Turning bamboo tool	It helps to take and store the spun thread of 6 or 8 plys from the drawing wheel on it.	It is made of wooden sticks by the carpenter.	Rs. 1.50	Walajapet Arcot	2½′ x ½′ x ½′
			Loom :			
11.	Loom	Loom is very important for making drugget with woollen yarn as weft and Cotton yarn as warp.	The carpenter makes the loom according to the required measurements.	Cost of one loom 6′ breadth Rs. 150/-	Walajapet, Vellore, Madras.	9′ x 4′ x 13′
12.	Wooden Roller	Wooden roller is used to give the exact tension to the warp and it helps the weavers to roll the finished drugget.	Carpenter makes the wooden roller to the required length.	Cost of the wooden roller per one cubic foot Rs. 6/-	Madras, Bangalore, Walajapet.	Breadth=1′ Thickness 1′ Length according to their required sizes.
13.	Vadi Cole	It helps for constructing or supporting the Drugget loom as well as to give Ani for weaving.	It is made by the Carpenter with bamboos or wood.	Cost of one Vadicole Rs. 2/-	Vellore, Madras.	13′ x 4″ x 4″
14.	Constructing Bamboos	Some bamboos are used for constructing the loom and some are used for supporting.	The Carpenter makes the bamboos according to the required measurements.	Cost of one bamboo Rs. 3/-	Vellore, Madras, Arcot, Ranipet.	13′ x 4″ x 4″
15.	Jog Kambi	It is used to keep the Ani with the support of Alluvarai.	It is made by the Carpenter with the bamboos or wood.	Cost of one Jog Kambi Rs. 1/-	Vellore, Madras, Arcot, Ranipet.	9′4″ x 4″ x 4″
16.	Alluvarai	It is fixed to the bamboo frame to hold the warp tight.	Made by the Carpenter.	Rs. 5/-	Arcot, Ranipet.	13′ x 4″ x 4″
17.	Iron Rod	This is called as 'Inda-Kambi'. It is attached with the roller and the coir ropes. It helps the weavers to calculate the number of knots of the warp.	It is made of iron by the blacksmith.	Rs. 6/-	Walajapet, Arcot.	9′4″ x ½″ x ½″
18.	Punch Coles	2 punch coles are necessary for one weaver to get Ani which is fixed one after another at a distance of three feet.	It is made of wooden plates by the Carpenter.	Cost of one punch cole Rs. 0.25	Walajapet	1½′ x 2½′ x ½′

(1)	(2)	(3)	(4)	(5)	(6)	(7)
19.	Vadidharam	It holds the warp thread when punch coles are pushed up and down to give the gap while weaving.	The weavers make it from the waste cotton yarn.	Rs. 18/- (For 3' breadth loom)	Walajapet	
20.	Stone Brackets	2 stone brackets are used to hold the wooden roller. There is a hole in each stone according to the wooden roller's diameter.	Made of stone by the Sculptor.	Rs. 5/-	,,	5' x 1½' x 4"
21.	Tightening rods	By the help of the tightening rods the loom will be tightened up.	Made by the Carpenter.	Cost of one tightening rod Rs. 3/-	Walajapet, Arcot.	5' x 4" x 4"
22.	Coir ropes	It helps to tighten up the bamboos of the loom and also helps to tighten up the wooden roller with the help of the tightening rods.	Made by the ropetwisters (some times they use cotton ropes also)	Cost of coir rope Rs. 0.62	Walajapet, Arcot.	20' x ½" x ½"
23.	Wooden plates	Wooden plates are placed in front of the loom for sitting purpose. Sometimes the weaving tools are placed on it.	Made by the Carpenter.	Cost of each plate Rs. 3/-	Walajapet	4' x 1½' x 2"
24.	Weighting stone	With the help of the weighting stone the warp thread will be separated from tne Alluvarai at a distance to prevent the tangling of the two warp threads while weaving.	Ordinary stones will be used for weighting purpose.	No cost is paid for the weighting stone.	Walajapet	
			Beating Tool			
25.	Hatha	As the woollen weft passes through the gap of the warp, Hatha is beaten to close up the weft. It makes the drugget and carpet strong.	Made by the Blacksmith.	Rs. 2/-	Walajapet, Arcot.	4" x 3" x 4"
			Finishing Tool			
26.	Knife	It is used not only to cut the piles or threads of the warp and weft but to trim the druggets and carpets at its finishing stage.	Made by the Blacksmith.	Rs. 2/-	Walajapet, Arcot.	1'2" x 2" x ¼"
27.	Scissor	At the finishing stage it is used to cut the knots and hanging threads from the druggets and carpets.	It is made of iron by Blacksmith.	Rs. 3/-	Walajapet, Arcot.	10" x 1½" x ¼"
28.	Broomsticks	It is used for cleaning purpose at the finishing stage.	It is made by the weavers with the coconut sticks.	Rs. 0.13	Walajapet	32' x 3" x 3"

APPENDIX 12

Waste of Wool

	Weight of the raw wool	Waste in the carding machine.	Weight after carding.	Waste in spinning	Weight after spinning	Waste in dyeing	Weight after dyeing	Waste in shaving at the loom	Weight after carding, spinning, dyeing and shaving of the wool	Total waste of the wool
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
For Druggets										
1.	100 lbs. of lime wool	25	75	5	70	3	67	4	63	37
2.	100 lbs. of pulled wool or clipped wool	12	88	3	85	6	79	1½	77½	22½

APPENDIX 12-A

Names and Addresses of the wholesale dealers in raw wool at Vaniyambadi

	Names	Address
1.	R. Nandalal and Co.	Kutchery Road, Vaniyambadi, North Arcot Dist.
2.	R. N. Devan	,, ,,
3.	M. Md. Mera Sahib	,, ,,
4.	M. K. Rahman	Khaderpet, Vaniymbadi ,,
5.	Abdus Samad	,, ,,

APPENDIX 13

Table Showing the Wages Paid to Different Processes in Weaving

Sl. No.	Name of the Craft	Number of persons engaged in the Craft		Wages for the worker	Number of working days in a month	Average monthly income of a weaver
		Males	Females			
				Rs. nP.	Days	Rs. nP.
1.	Drugget Weaving	81	...	1.50	20	35.00
2.	Carding	3	9	1.00	25	30.00
3.	Spinning	...	300	0.62	30	20.00
4.	Twisting	...	9	2.00	26	40.00
5.	Designing	1	...	2.50	20	60.00 (Monthly salary)

APPENDIX 14

Names of the Skilled Weavers in Walajapet

Name of the craft	Skilled Saurashtra weavers	Skilled Naicker weavers	Skilled Muslim weavers	Scheduled caste
Drugget Weaving	Sri Varadiah	Sri Venkatesan	1. Abdul Ghaffar	Sri Thangavelu
	Sri Perumaliah	Sri K. Dhanapal	2. Noorullah	Sri Ramaswamy
	Sri Rathiah	Sri Rangaswami	3. Yusuf Bay	
		Sri Natesan	4. Basheed Sahib	
		Sri Munirathnam	5. Fazulu Rahman	
		Sri Narasimma Naicker	6. Choudri Sabjan	
		Sri Krishnan	7. Syed Jabbar	
		Sri Govindan	8. Sibakdullah	
		Sri Kanniyappa	9. Dada Sahib	
		Sri Arumugan	10. Ashab	

APPENDIX 15

CARPETS

Name of the Factory Owners, Looms and Weavers before 1946 and in 1961

	Before 1946							In 1961					
Sl. No.	Name of the Factory Owner	Number of working looms	Number of workers	Sourashtras	Muslims	Hindu Naickers	Sl. No.	Name of the Factory owner	No. of working looms	Number of workers	Sourashtras	Muslims	Hindu Naickers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Kishinchand Chellaram	50	100	...	60	40	1	Kishinchand Chellaram	32	32	...	4	28
2	K. A. Wahid	30	60	...	40	20							
3	Abdul Lateef	20	50	...	30	20							
4	B. V. Ramaiah	12	35	10	12	13							
5	B.G. Balakrishnamoorthy	19	54	20	10	24							
6	B. Kuppuswamiah	12	40	17	9	14							
7	B. V. Nagendraiah	12	40	9	16	15							

APPENDIX 16

Measurement-wise distribution of pile-carpet looms.

Name of the Factory owner	Loom in 3 feet	Loom in 4 feet	Loom in 5 feet	Loom in 6 feet	Loom in 7 feet	Loom in 9 feet	Loom in 10 feet	Loom in 12 feet	Loom in 15 feet	Loom in 16 feet	Loom in 20 feet	Loom in 23 feet	Establishment of the factory
Kishinchand Chellaram	1	7	5	3	2	6	2	3	...	1	...	2	1935



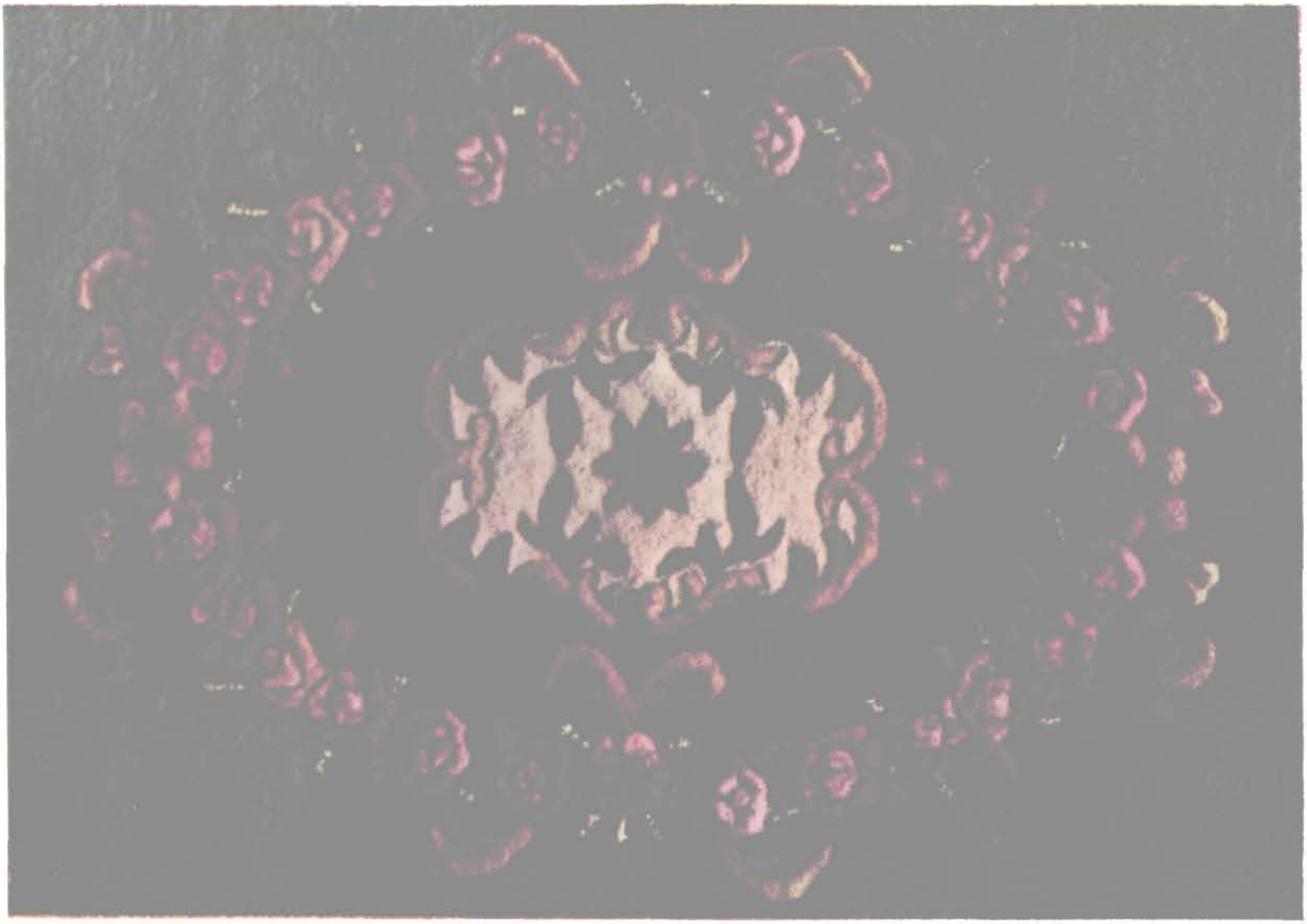
Woollen Carpet Design No. 1114
(Hashim khani)



A floral (embossed) motif of Mirzapur manufactured with superior wool.
(The technique of production is completely different from that of Walajapet)



Woollen carpet design (Nurjahan Khani)
Compare this with the artistic embossed work of Mirzapur



Another floral motif (embossed) with olive green colour background produced in Mirzapur
(Contrast this with the Walajapet carpet design)

APPENDIX 17

(PILE CARPETS)

Breadth and length of the Pile carpet	Raw wool required	Cost of the Raw wool	Carding charges	Spinning and twisting charges	Dyeing charges	Cost of the Jute yarn	Cotton thread required for warping	Cost of the cotton thread with twisting charges	Weaving charges	Sales tax, parcel and exporting charges	Total cost price of the carpet	Sale price	Profit	Number of persons engaged in weaving	No. of days taken to finish one carpet	
	Lbs.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Lbs.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.	Rs. nP.		Days	Hrs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2′ x 5′	6	10.80	0.47	9.90	3.60	0.75	½	0.62	4.00	0.60	21.74	33.33	11.59	1	2	—
3′ x 6′	12	21.60	0.93	1.80	7.20	1.50	1	1.25	8.00	1.20	43.48	60.00	16.52	1	3	6
4′ x 7′	18	32.40	1.40	2.70	10.80	2.25	1½	1.88	12.00	1.80	65.23	93.33	28.10	2	3	—
5′ x 8,	24	43.20	1.86	3.60	14.40	3.00	2	2.50	16.00	2.40	86.96	133.33	46.37	2	4	...
6′ x 9′	36	64.80	2.79	5.40	21.60	4.50	3	3.75	24.00	3.60	130.44	180.00	49.56	2	5	10
9′ x 12′	72	129.60	5.58	10.80	43.20	9.00	6	7.50	48.00	7.20	260.88	360.00	99.12	3	6	4
12′ x 15′	120	216.00	9.30	18.00	72.00	15.00	10	12.50	80.00	12.00	434.80	600.00	165.20	4	8	...
15′ x 20′	180	324.00	13.95	27.00	108.00	22.50	15	18.75	120.00	18.00	652.20	1000.00	347.80	5	9	6

APPENDIX 18

Names of the Pile Carpet skilled weavers of Walajapet working at Chellaram Factory.

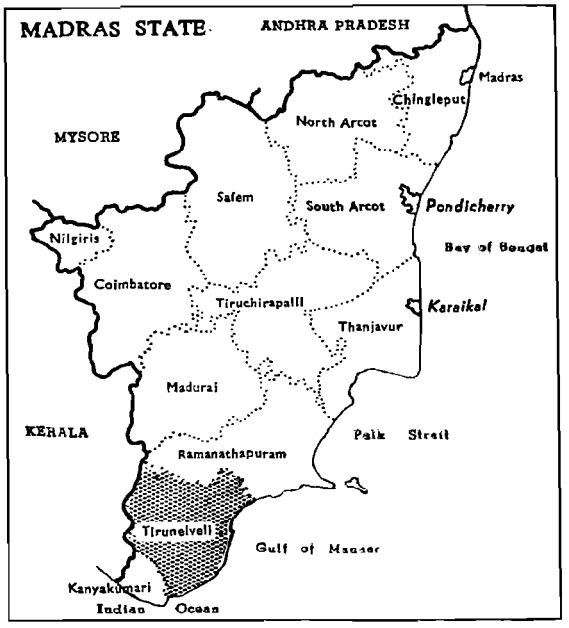
1. Shri Krishna Pillai
2. Shri M. Muniswami Pillai
3. Shri Jani Badsha
4. Shri Kareem Badsha
5. Shri Md. S. Zakariah.

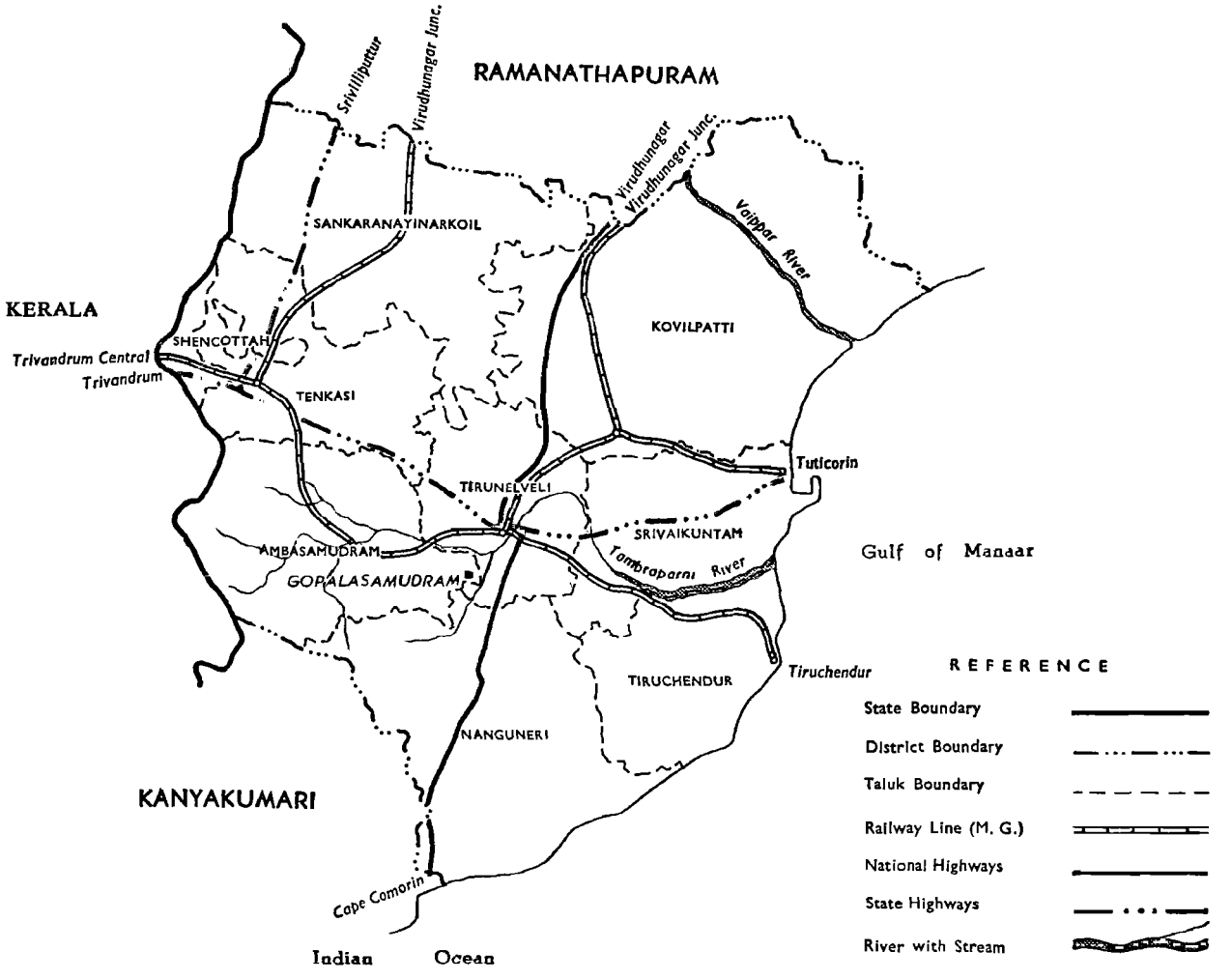
LOCATION MAP
OF
GOPALASAMUDRAM
AMBASAMUDRAM TALUK
TIRUNELVELI DISTRICT

SCALE

Miles 10 0 10 20

10 0 10 20 Kilometres





REFERENCE

- State Boundary
- District Boundary
- Taluk Boundary
- Railway Line (M. G.)
- National Highways
- State Highways
- River with Stream

APPENDIX 19

SUN HEMP DRUGGET AND CARPET WEAVING OF GOPALASAMUDRAM

Introduction

An attempt is being made to develop Sun hemp drugget and carpet weaving in Gopalasamudram by the Industries Department of the Government of Madras. A short note on this scheme will be of interest.

Gopalasamudram is a small village situated 1½ miles away from the main trunk road, between Palayamcottah and Shencottah of Tirunelveli district. It is 12 miles from Tirunelveli and 10 miles from Ambasamudram, the Taluk headquarters.

Gopalasamudram is well-known for the past two centuries for its products such as fish nets, canvas and hoses. Now, carpets and druggets of Sun hemp fibre are being made. In 1957, it was found out that the Sun hemp fibre can be utilised for drugget and carpet weaving.

The industry of fish nets and hoses is a sole mono poly of a particular group of people called "Telugu Chettiars". As a result of competition from nylon and plastics, it has received a set back.

Centuries ago, these "Telugu Chettiars" migrated to South from Andhra State to settle in more fertile areas. The big lake of Piranjeri where water facility is good might have attracted them. Thus, they came and settled in Vadakur and in Seval, two miles from their present quarters. The foul smell of the Sun hemp fibre was the cause for occasional quarrels with the Brahmins which compelled them to leave their place and settle in Gopalasamudram.

On seeing the successes of their brethren many more migrated from Andhra and settled in the following villages of Tirunelveli district as the land was suitable to carry on their traditional craft of growing Sun hemp fibre and weaving fish nets, water-hoses and canvas for easy chairs:

Name of the Villages	Number of families settled
1. Gopalasamudram	80
2. Ayakudi near Tenkasi	50
3. Narasinganallur near Pettai	150
4. Ambur near Alwarkurichi	50
5. Veerakeralampudur	40
6. Podukudi near Ambasamudram	15
7. Vellakal	15
8. Udyarpetta near Tirunelveli junction	40

Due to internal trouble and external marketing difficulties some of the families who settled in the above villages, left their traditional craft and moved to different places taking to other means of livelihood.

Druggets and carpets are manufactured with wool, coir, jute and linoleum, but not with Sun-hemp. Sri S. Muthian, B. E., who was once the Assistant Director of Industries and Commerce at Tirunelveli in 1956, thought that Sun-hemp could be utilised instead of wool for weaving druggets and carpets. Thus a sample of its fibre was sent to the Textile Institute, Madras to find out the suitability of the fibre, whether it can absorb the dyes, and if so, whether it can be suitable for weaving druggets and carpets without losing its strength in the long run. The Textile Institute conducted various experiments and came to the conclusion that Sun hemp has most of the qualities of wool and can be utilised for weaving carpets and druggets.

A scheme was evolved for establishing a training centre for weaving carpets and druggets out of Sun hemp fibre in Gopalasamudram.

The main cause for the localisation of Sun hemp drugget industry in the village is the abundant supply of Sun hemp fibre. This industry is carried on with 47 males engaged in the production centre producing carpets and druggets.

TECHNIQUE OF PRODUCTION

Sun Hemp Fibre

Gopalasamudram feeds the drugget and carpet industry. This fibre can be grown in any place and in any field provided the land is fertile and has adequate water. It is known as a cash crop, grown once a year after the harvest of the second paddy crop.

In Gopalasamudram village, there are about 80 families who cultivate this fibre on 60 acres of land. In some places other families grow this crop not to extract fibre but because it serves as a green manure for the paddy crop.

Being a seasonal crop, it is cultivated in the paddy fields in the last week of March and harvested in the last week of June. The Sun-hemp fibre plant grows to a height of 8 feet. After the second harvest of paddy is over, the ground is ploughed and watered.

While spreading the seeds, water is pumped out and once again levelled so that no pool of water remains in any corner of the field which may spoil the crop. For 15 days, the field is left undisturbed for drying. If it rains, the water has to be pumped out. Within a fortnight the plant will sprout up to 6 inches. Generally, the plant has a tendency to be attacked by insects and to be on the safe side folidol is sprinkled over the plants.

Till the crop is harvested, watering is done every 15 days. It takes 75 to 90 days without seeds to reach a height of five feet. At this stage the Sun hemp is cut to give place for the paddy crop. If the plants are allowed to stand for more than 100 days the seeds will get ripened which may be useful for the next crop in the following year.

After 90 days the plant will be cut to provide an opening for the fibre to be pulled out. In no case, should it be pulled out without cutting. If it is pulled out the root will also come up with the plant and when dried in the sun, there will be no opening through which fibre can be pulled out. If it is cut, a hole will be provided which will be easy to extract the fibre from the stem.

After cutting the plants, care is taken to protect it from rain water, otherwise it will turn the fibre inferior.

On the 6th day, the seeds and leaves are removed by holding the plant firmly and beating it on the stone with full strength. After extracting the seeds, the stems will be tied in big bundles and soaked in the tank for 5 days. The soaked stalks are beaten five or six times in the water. The core of the stalks is waste while the outer fibre is known as "Sun hemp fibre" which is used for weaving carpets and druggets.

When beating is over a few stems are held in the fingers of the right hand and the essential fibre is extracted upto $\frac{3}{4}$ size of the stem. The hanging fibre with the stalk is brought home and dried in the sun. Each bundle is kept vertically in a conical shape so that it can receive good sun shine on all sides.

A day's drying is sufficient and the remaining $\frac{1}{4}$ fibre is pulled out by hand from the stalks and kneaded by both legs so as to separate the small particles. With a stick, it is beaten slowly; by beating, the small bits and stem will get separated from the fibre; then the fibre is twisted, made into bundles and the dried stalks are used as fuel. This secondary crop or cash crop is cultivated by 80 families of Telugu Chettiars to supplement their income. After three months, if there is any sign of monsoon, the plant is harvested to give place for the second paddy crop which is more profitable. If there is any delay for the monsoon, the crop will be left untouched, or allowed to grow a month more and the ripe seeds will be used for the next Sun-hemp crop.

For an acre of land 32 to 36 Madras measures of seeds are required. From one acre of land, the output of Sun-hemp fibre will be Rs. 300 and the expenditure will be Rs. 185/ . Thus there is a gain of Rs. 115 by cultivating one acre of land.

Cotton Yarn

This is the second important raw material purchased from Tirunelveli in bundles of 10 counts. We have described it in detail in the main report. The same method or process is followed here.

Sun Hemp Jute

Instead of using jute yarn as weft Sun hemp fibre is twisted on charkas and used as jute. This is locally known as Sun hemp twine which resembles jute and is equally strong.

Dyes

All the colours are directly purchased from Imperial Chemical Industries. An experienced dyer is appointed who handles the colours and the fibre carefully.

Loom

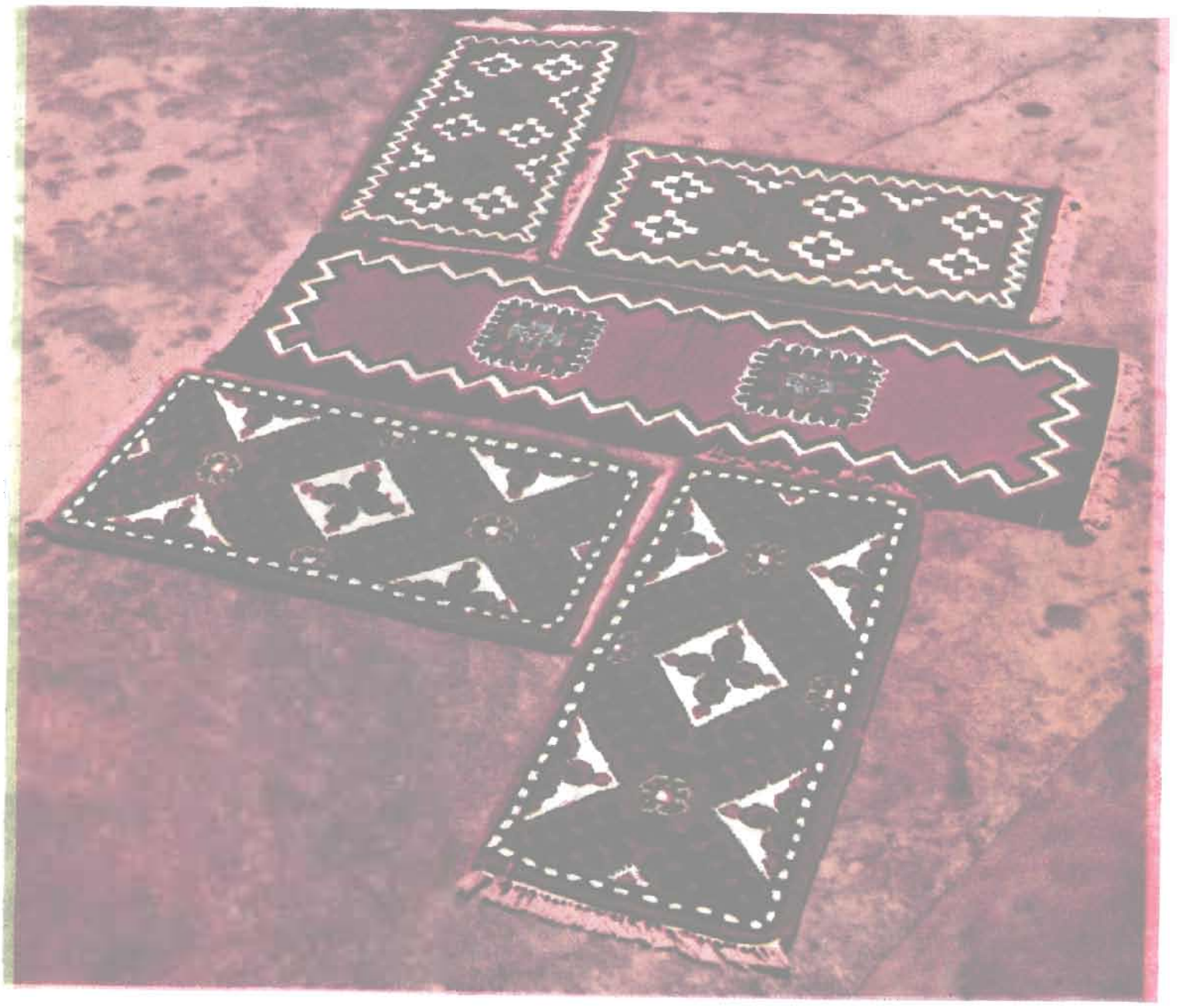
All the looms are manufactured in the model carpentry unit at Pattamadai. Except baby loom the construction of the loom is same as in Walajapet. The baby loom is length-wise surrounded by four frames, bottom and top, connected with four wooden frames. The wooden plank of 4 feet is attached to both the polls which can be adjusted according to the convenience of the weaver. It is of light weight and movable where one worker can sit and weave to a breadth of $2\frac{1}{2}$ feet. It is of rectangular shape upto a height of $7\frac{1}{2}$ feet. The main advantage is that it can be easily shifted from one place to another. It is not popular with the weavers. Only the trainees are trained on it. The main cause for its unpopularity is that they cannot rest their legs with ease and bend comfortably while weaving.

Carding Machine

For training centre two carding machines were purchased from Tirunelveli at a cost of Rs. 200/- each. At the production centre, there is one nail system carding machine which costs about Rs. 1,800. To keep the machines in perfect condition it has to be greased and oiled daily. The fibre is carded twice to give smoothness while spinning. The weaving tools are the same as in Walajapet.



Popular Carpet Design No. 116
(Sunhemp)



Some of the reputed sunhemp carpet designs

Manufacturing Process

There is a slight change in the initial stage. In Walajapet, the raw wool is carded, bleached, spun into hanks and finally dyed. But here it is bleached, dyed and other processes follow.

STAGE I

Bleaching

Sun hemp fibre is lifted by both hands and shaken to remove the dust and the sticks. Bleaching is carried out for light and cool colours so as to make the fibre white for the easy absorption of light dyes. For dark colours bleaching is not necessary; but for plain white, bleaching is inevitable.

The formula for bleaching is that for every 50 lbs. of Sun hemp fibre 13 lbs. of bleaching powder is used. Bleaching is done in a big cement tub. To remove its dust, the fibre is soaked in cold water for 12 hours; next day it is removed from the tub and a quantity of 100 gallons of fresh water is poured in it. 13 pounds of bleaching powder are taken and dissolved in the water and solution prepared. At this juncture the soaked fibre is dipped in the bleaching solution and for about 15 minutes it is turned up and down and left undisturbed for a day. Next day, the bleached fibre is removed from the tub and washed well in fresh water. Again, 100 gallons of fresh water is poured into another tub and about 2 lbs. of Hydrochloric acid is mixed in the water for neutralising the alkali present. This is done to prevent any decay of the fibre.

After pouring the hydrochloric acid, the bleached and washed fibre is soaked in the tub and allowed to remain for one or two hours. If it remains more, the fibre will lose its strength. Therefore, after 120 minutes, it is removed from the tub and washed with fresh water and allowed to dry in the open sun. Now the bleached fibre turns milky-white.

STAGE II

Dyeing

The raw fibre is taken for dyeing without bleaching. This method is followed because the dark colours have the tendency to penetrate well into the fibre.

In a big copper vessel of 20 litres, half full of water, 50 lbs. of Sun hemp fibre is boiled for an hour till the temperature reaches 60° C or 140° F. At this stage the dyes are mixed proportionately. The following is the table where one can gauge the percentage of dyes mixed

Cost of 50 lbs of Sun hemp fibre... Rs. 17

Light Colours

Name of the colour	Quantity	Cost of the dye Rs.	Common salt (to absorb the dyes)	Cost of the sodium chloride Rs.	Firewood in lbs.	Cost of the firewood Rs.
Yellow	70 grams	2.80	2½ M. M.*	0.18	126 lbs.	3.50
Vilolet	113 ,,	3.39	2½ ,,	0.18	126 lbs.	,,
Pink	70 ,,	2.10	,,	,,	,,	,,
Orange	50 ,,	2.10	,,	,,	,,	,,
Blue	70 ,,	2.80	,,	,,	,,	,,

Name of colour	Duration of dyeing	Dyeing charges Rs.
Yellow	5 hours	1.25
Violet	-do-	-do-
Pink	-do-	-do-
Orange	-do-	-do-
Blue	-do-	-do-

Dark Colours

Name of colour	Quantity	Cost of the dyes Rs.	Salt (to absorb dyes)	Cost of the salt Rs.	Firewood in lbs.	Cost of fire-wood Rs.	Duration of dyeing	Dyeing charges Rs.
Blue	250 grams	10.00	2½ M. M.*	0.18	140	3.80	5 hrs.	1.25
Green	350 ,,	15.75	,,	0.18	140	3.80	-do-	-do-
Red	283 ,,	11.32	,,	0.18	140	3.80	-do-	-do-
Black	454 ,,	18.16	,,	0.18	140	3.80	-do-	-do-
Yellow	140 ,,	7.00	,,	0.18	140	3.80	-do-	-do-

* Madras Measure

in light and dark colours along with its cost, acids and labour charges.

After dyeing operation is over, the dyed fibre is removed from the vessel and allowed to hang in the open air for about half an hour. When it cools, it has to be washed in plain water to make it smooth and it is checked how far the fibre has absorbed the dyes. Then the bundles are opened and dried in the shade. Care is taken that the fibre is away from the rays of the sun lest they should affect the dyes.

Stage III

Cutting

The dyed fibre, raw fibre or bleached fibre are cut into small pieces of 1½ to 2 inches in length. It is to be noted here that the length of the fibre is not like that of wool. Sun hemp fibre is 4 to 5 feet in length and so it cannot be given for carding unless it is cut into bits. The lengthy fibre is taken and cut into pieces by a sharp knife. The trainee who undertakes it, takes a sharp knife in his right hand and the fibre in the left hand and places it on a wooden plank and presses the knife on it. The method resembles cutting of vegetables.

Stage IV

Carding

One worker can cut 6 lbs. of fibre in an hour. The pieces of cut fibre are beaten with sticks so as to separate the small bits and to make it loose. Then it is taken for carding. This machine is small and easy to operate without using electric power. The carding machine at Gopalasamudram is a machine containing a rotating drum with nails, pierced all over its body. The length of the nailed drum is 15" and the diameter is 16". The height of the machine is 2½ feet. The method of carding is very easy as it is operated by pedal. The carder takes the dyed fibre, and places it in a small gap which is close to nails. He sets the drum rotating anti-clockwise by pressing the pedal with his right leg. The pedal is fixed in the gear wheels connecting the drum, and the upper part of the drum is covered by wooden plank, so as to keep the fibre inside and to avoid any injury to the fingers of the carder.

There is a gap left in front of the machine for the carded fibre to flow out. At the bottom a wire net is fitted to keep the fibre inside as well as to remove impurities. Another advantage is that the wire net helps to safeguard the legs of the carder from the sharp nails.

Stage V

Spinning

Near the carding machine, there are seven charkas where spinning takes place. The method of spinning is same as in Walajapet. For carpets, the fibre is of thinner and finer quality; so the spinners are careful while spinning. Thus it takes more time to spin. In one hour 1½ lbs. of drugget fibre can be spun, while for carpet 5/8 lbs. of fibre can be spun.

In Gopalasamudram instead of using jute yarn the Sun hemp fibre bleached or dyed is spun on an ordinary charka and made as jute yarn. This Sun hemp yarn resembles jute and is equally strong. 1/8 lbs of Sun hemp fibre can be spun as twine in one hour.

Stage VI

Twisting of Cotton Warp Thread

Cotton yarn thread of 10 counts is purchased from the markets of Tirunelveli. It has to be twisted on spinning charka on a slightly different method. All the processes relating to drugget and carpet weaving is entirely done by men and the boy trainees of the training centre. The cotton thread of ten counts is placed on the drawing wheel and the ends of the thread are held in the right hand and drawn. For druggets 8 or 9 ply is used while for carpets 11 plys. The plys will be attached to the hook spindle of the ordinary charka and the spindles are set into motion by giving vigorous turns to the handle of the charka. Thus the cotton thread twists and shrinks. Finally it is removed, knotted and placed in such a manner to give "Ani" or cross, a very important factor which helps to change the warp threads to and fro while weaving.

Stage VII

Warping

The process of warping is the same as in Walajapet. The cotton warp thread stretches over the top cross beam, passes under the lower horizontal beam

back again over the top and so on, till the required number of warp threads have been stretched continuously over the top and lower beam.

STAGE VIII

Weaving

The weaver sits on the plank with his feet in the trench. Conical balls of Sun hemp fibre lie on the ground at the right side of the weaver. The number of weavers depends on the breadth of the drugget. The usual calculation is one weaver for every 3 feet. The best craftsmen usually take the place at borders. Taking the coloured fibre from balls of different colours placed near him it is passed through the warp yarn and beaten with the help of hatta or the iron comb and Ani is released to hold the weft tight. Again, the woollen yarn is passed through the warp yarn and beaten into position with the iron comb and Ani is released to reverse the position of the warp thread. Thus, this process is repeated till the whole drugget is woven. For carpets the method of weaving is different. Above the weavers' head, hang balls of rainbow coloured fibre. The weaver takes a piece of fibre, passes it in a figure of '8' by cleverly twining short length round the two threads of the warp back and front so that the two ends of the fibre sticks out in front and cuts off the ends with a sharp knife. This is known as knot or stitch. In this knot the two ends of fibre stick out between each thread of the warp. This is done for each thread till one row of stitches has been put in, then the sun hemp jute thread is passed on both ways by hand between the warp and beaten down by hatta and Ani is released, then another two jute threads are passed through from the other side and Ani is crossed and the weaving continues. After one row of piles has been put in, it is cut with a sharp knife and finally levelled with scissors. This process is continued till the whole carpet has been completed.

STAGE IX

Designs

In Gopalasamudram a designer is employed in the scale of pay of an Upper Division Clerk who creates new and excellent designs and numbers it as it is universally acknowledged. Preference is given to modern and neat designs. Recently, two more master weavers from Walajapet were appointed to teach the trainees the art of weaving old and complicated designs. The master craftsman holds in his hand the designs he has copied in pencil in full scale on graph paper marked out in square inches and dictates to each trainee the knots he has to put, e. g. so many knots of green, so many of blue and so many of red along with the breadth of the carpet. The quality of the carpet is gauged by knots. By knot is meant the piece of fibre twisted with a Sun-hemp yarn round the thread of the warp. The work done at Gopalasamudram is of $3\frac{1}{2}$ knots per one square inch.

Following are the number of designs which are in good demand at Gopalasamudram:

Name of the craft	Name of the village	Designs in numbers	Number of designer employed	Foreign or native
Drugget and carpet weaving	Gopalasa-mudram	116 117 135 136 164	one	Native

STAGE X

Trimming Knotting and Packing

When the drugget reaches 4 to 5 feet, weaving is temporarily stopped to trim and level the finished drugget. After trimming is over, it is rolled on the wooden roller and then weaving commences till the whole drugget is completed. There is no limit for the length of the drugget, but its breadth depends on the size of the loom on which it is woven. Knotting and packing process is the same as in Walajapet.

ECONOMICS OF PRODUCTION

The Central Cottage Industries Emporium at Delhi is making necessary arrangement to export these goods to foreign countries. When compared to Walajapet carpets and druggets, the cost of production is less and the structure rivals the woollen products. Here the advantage is that the fibre is less costly than wool and it is produced in the same place without incurring any cost of transportation. It is also free from foul smell, and water does not effect the fibre. The main drawback is that it cannot match the smoothness and softness of the wool.

The Table in Appendix 4 will show the cost of production of different sizes of Sun hemp druggets and carpets. Following is the marginal profit on various sizes:

	Name of the craft	Size	Cost price Rs. np.	Sale price Rs. np.	Marginal profit Rs.np.
Sun hemp	Druggets	2× 5	7.41	8.29	0.88
		3× 6	14.80	16.57	1.77
		6× 9	44.17	49.50	5.33
		9×12	88.34	99.00	10.66
Sun hemp	Carpets	2× 5	15.28	18.00	2.72
		3× 6	30.56	36.00	5.44
		6× 9	91.72	108.00	16.28
		9×12	183.44	216.00	32.56

The following are the figures of production and sales at the training and production centre:

TRAINING CENTRE

Year	Production	Sales
1958-59	Rs. 3,600	Rs. 300
1959-60	Rs. 6,200	Rs. 3,300
1960-61	Rs. 11,300	Rs. 4,600
1961-62	Rs. 10,500	Rs. 20,100

PRODUCTION CENTRE

Year	Production	Sales
1961-62	Rs. 6,764	Rs. 4,210

It is clear from the above table that though the production at the training centre started at a brisk rate in the first year, sales were very poor. Few people knew that druggets and carpets are woven in Tirunelveli district by Sun hemp fibre. Weaving of druggets and carpets started in the training centre. Druggets were produced in large numbers and carpet weaving was taken up only on receiving orders. Training centre and production centres have their own store rooms where the finished goods are carefully packed and stored. The columns 2 and 3 of the above table represent the amount of money spent on production and works sold.

Training Centre

The training centre was started in 1957. The art is not hereditary. When the Textile Institute found out that the Sun hemp fibre is suitable for weaving carpets and druggets, Madras Government took the initiative and sanctioned a scheme at Gopalasamudram at a cost of Rs. 17,470 in the year 1957 (25-3-57) to train various persons who are anxious to learn the craft. Training is provided to 12 candidates every year, the course of training is two years and a sum of Rs. 30/-is being paid as a stipend per head. For training the new recruits some expert weavers from Walajapet were called for and appointed on a monthly salary. Following is the salary they receive every month:

1. Instructor Rs. 120/- per month
2. Skilled Assistant Rs. 60 per month

The training centre started functioning from 26-8-1957. It is located in a rented building on a rent of Rs. 50/- per mensem. So far 3 batches of trainees have undergone training in weaving carpets and druggets. In the first batch 10 candidates were selected, in the second batch 11 candidates and in the third batch 12. These trainees hail from Gopalasamudram and neighbouring villages:

	Trainees from		
Year	Gopala-samudram	Other neighbouring villages	Total trainees
1957	10	...	10
1959	9	2	11
1960	11	1	12

The following Table shows the distribution of the artisans of various communities.

COMMUNITIES

Year	Chettiar	Maravar	Harijan	Nadar	Muslim	Vannan	Total
1957	10	...	...	...	...	...	10
1959	9	1	...	1	...	...	11
1960	3	3	2	2	1	1	12

At present, batch Number 4 and 5 totalling 24 are undergoing training in the unit. The selection for the training commenced on 2-3-61 and 2-3-62 respectively. The training for the fourth batch will come to an end on 1-3-63 and for the fifth on 1-3-64.

FOURTH AND FIFTH BATCHES

Year	Trainees from Gopalasamudram	Trainees from other neighbouring villages	Total
1961	7	5	12
1962	8	4	12

COMMUNITIES

Year	Chettiar	Maravar	Harijan	Nadar	Muslim	Iluvar	Moopanar	Konar	Pandaram	Kuravan	Total
1961	1	3	1	2	1	1	1	1	1	...	12
1962	1	2	2	1*	1	1	1	1	1	1	12

* Christian

The selection Committee is very cautious in selecting the candidate community-wise. In 1962, all the communities have been represented. Previously in 1957, all belonged to Chettiars class; now, in 1962, only one trainee belongs to that community. The training of two years will not go unrewarded as they will be absorbed in the production centre.

Production Centre

For the sake of the trained artisans and to meet the growing demand for the products, the Industries Department of the Government of Madras opened a production centre on 13-11-61 at a cost of Rs. 1,20,700. At present druggets are being manufactured in large scale while carpets on orders are produced, side by side, in the training centre. The following are the weavers (community-wise) working in the production centre, in the year 1962.

Chettiar	14
Harijan	2
Christian	3
Marawar	2
Dhobi	1
Muslim	1
Total	23

There is only one Christian who underwent training in 1962 and none in the previous years. The same is the case with the Dhobi. Our local enquiry as to how the three Christians and one Dhobi entered the production centre revealed that when they heard that there was good scope of work available for them in Gopalasamudram they came and settled. They are happy as they have work to live a moderate living.

Wages

The weavers in the production centre are paid on piece work rates. The difference in wages for druggets and carpets lies in spinning and weaving. Carpet weaving is a slow process where the weaver cannot expect to earn more than drugget weaver. It is a painstaking and slow work. He earns less than his co-worker; so majority of them prefer to weave druggets. The wages for weaving one sq.yard of drugget is Rs. 1.25 nP. and for one sq. yard of carpet Rs. 5. In one day, one weaver can only weave $1\frac{1}{2}$ sq. feet of plain drugget and one sq. foot with designs. Thus, his income will range between Rs. 1.25 to Rs. 1.75 per day.

In one day one weaver can weave 1/3 sq. yard of plain carpet and only $\frac{1}{4}$ sq. yard with designs and earn on an average Rs. 1.25 per day. The following are the average wages if he works 8 hours per day :-

1.	Bleaching and dyeing	Rs. 1.25
2.	Spinning	1.25
3.	Carding and cutting	1.25
4.	Weaving	1.50

In Walajapet almost all the spinners are ladies, but here no ladies are found nor did the Industries Department think over to encourage the women folk to undertake weaving and spinning. It is to be seen when ladies will be trained in spinning and twisting to supplement their income.

Unlike Walajapet, this craft is not handed down from father to son. The trainees comprise of various castes and creed living in neighbouring villages. After training is over, they are absorbed in the production centre. All the trainees are young. With profound enthusiasm they are learning the craft. Some of the children of the Telugu Chettiars who follow this craft are better off when compared to those who are engaged in producing fish nets, hoses and kistans. The nylon and plastic products have seriously affected the fish net and hoses industry and the community in particular.

The weavers of druggets and carpets have to do some extra work of laying the warp thread, opening the hanks, making oblong balls and cleaning the carpet. For this, no extra wages are paid, but still their economic condition is good, mainly because the prices of the products are low, and free from factory and labour acts, which usually prevents a person below 18 years from sitting near the loom and learning the rudiments of the craft. Wages are paid regularly and work is there throughout the year and finally they are free from the most difficult problem of marketing.

It is a scheme sponsored by the Madras Government. It remains to be seen whether it will develop a new handicraft.

ANNEXURE 1

Tools

	Name of the tools	Use of the tools	Who makes the tool	Cost of the tool	Name of the place from where imported	Measurement of the tool L x B x H
1.	Pedal system carding machine	Operated by pedal containing a rotating drum with nails all over its body	Mechanic	Rs. 200	Tirunelveli	15″ x 16″ x 30″
2.	Baby loom	Carpet or drugget upto a breadth of 2½ feet can be easily woven—It is of rectangular shape, easily movable for demonstration	Carpenter	Rs. 150	Pattamadai	4′ x 2½″ x 7½″

(These are the only two tools which cannot be found in Walajapet—Others are same)

ANNEXURE 2

Main and Subsidiary Materials required for Sun Hemp Drugget and Carpet Weaving

Name of the material	Use of the material	Who makes the material	Cost of the material	Name of the place from where it is imported
		Main Materials		
1. Sun hemp fibre	The main material, Sun hemp fibre, is used as weft, either it may be dyed or undyed	Fibre is extracted from the Sun hemp plant	14 lbs. Rs. 5-25	Gopalasamudram
2. Cotton yarn of 10 Counts	This second important raw material is used as warp.	Cotton yarn mills	10 lbs. Rs. 18/-	Tirunelveli
		Subsidiary Materials		
3. Dyes	For light colours, fibre is bleached and dyed while for fast colours bleaching is not necessary.	It is manufactured in the dye companies	1 lb. Rs. 10 to 20/-	I. C. I. Sandoz Tirunelveli
4. Bleaching Powder	To remove the dirt and to make the fibre milky white so that the light colours may penetrate well.	Made in the chemical laboratories	1 lb. 0-31 nP.	Tirunelveli
5. Hydrochloric acid	Used for neutralising purpose	Made in the chemical laboratories	1 lb. 0-25 nP.	Tirunelveli
6. Sodium Chloride	To clean the fibre	Manufactured in the chemical laboratories	1 M.M.* 7 nP.	Gopalasamudram

*M. M:- Madras Measure

ANNEXURE 3

Total Looms in Different Sizes

Name of the Craft	Name of the village	LOOMS							
		2 feet	4 feet	6 feet	7 feet	10 feet	12 feet	20 feet	Total
Sun hemp druggets and carpets	Gopalasamudram	3	2	2	1	1	3	1	13

ANNEXURE 4

Cost of production of Sun hemp druggets and carpets of various sizes

Size	Sun hemp fibre in lbs.	Cost of fibre Rs.	Cost of dyes and fuel Rs.	Cost of cotton yarn Rs.	Wages for cutting and carding Rs.	Wages for spinning Rs.	Wages for dyeing Rs.	Wages for cotton yarn twisting Rs.	Wages for weaving Rs.	Extra cost towards the increase in the raw materials and wages Rs.	Cost price Rs.	Sale price Rs.	Profit Rs.
DRUGGET													
2′ x 5′	6	2.55	1.00	0.55	0.25	0.53	0.10	0.05	1.25	1.13	7.41	8.29	0.88
3′ x 6′	12	5.10	2.00	1.10	0.50	1.05	0.20	0.10	2.50	2.25	14.80	16.57	1.77
6′ x 9′	36	15.26	5.76	3.38	1.50	3.15	0.60	0.28	7.50	6.74	44.17	49.50	5.33
9′ x 12′	72	30.52	11.52	6.76	3.00	6.30	1.20	0.56	15.00	13.48	88.34	99.00	10.66
CARPET													
2′ x 5′	10	3.79	1.58	0.67	0.39	1.28	0.16	0.08	5.00	2.33	15.28	18.00	2.72
3′ x 6′	20	7.58	3.15	1.35	0.79	2.55	0.32	0.16	10.00	4.66	30.56	36-00	5.44
6′ x 9′	59	22.75	9.44	4.05	2.36	7.65	0.98	0.50	30.00	13.99	91.72	108.00	16.28
9′ x 12′	118	45.50	18.88	8.10	4.72	15.30	1.96	1.00	60.00	27.98	183.44	216.00	32.56

ANNEXURE 5

Names of the skilled weavers of Production Centre

1. Chidambaram
2. Sankaranarayanan
3. Palani
4. K. Subramanian
5. Sankaran
6. P. Subramanian