CENSUS OF INDIA 1961

VOLUME IX

MADRAS

PART VII-A-v

HANDICRAFTS AND ARTISANS OF MADRAS STATE

ICONS IN STONE AND METALS

P. K. NAMBIAR

of the Indian Administrative Service

Superintendent of Census Operations, Madras

1964

CENSUS OF INDIA, 1961

(Census Report—Vol. No. IX will relate to Madras only. Under this series will be issued the following publications)

Part	I-A	...	General Report.
	I-B	...	Demography and Vital Statistics.
	I-C	...	Subsidiary Tables.
Part	II-A	...	General Population Tables.
	II-B	...	Economic Tables (2 Volumes)
	II-C	...	Cultural and Migration Tables (2 Volumes)
Part	III	...	Household Economic Tables.
Part	IV-A	...	Report on Housing and Establishments.
	IV-B	...	Housing and Establishment Tables.
Part	V-A	..	Scheduled Castes and Tribes (Report & Tables).
	V-B	...	Ethnographic notes on Scheduled Tribes.
	V-C	...	Todas.
	V-D	...	Ethnographic notes on Scheduled Castes.
	V-E	...	Ethnographic notes on Denotified and Nomadic Tribes.
Part	VI	...	Village Survey Monographs (40 Nos.)
Part	VII-A	...	Crafts and Artisans. (9 Nos.)
	VII-B	...	Fairs and Festivals.
Part	VIII-A	...	Administration Report—Enumeration } For official use only.
	VIII-B	....	Administration Report—Tabulation }
Part	IX	...	Atlas of the Madras State.
Part	X	...	Madras City (2 Volumes)
			District Census Handbooks on twelve districts.
Part	XI	...	Reports on Special Studies.
	A	...	Handlooms in Madras State.
	B	...	Food Habits in Madras State.
	C	...	Slums of Madras City.
	D	...	Temples of Madras State (5 Volumes).
	E	...	Physically Handicapped of Madras State.
	F	...	Family Planning Attitudes: A Survey.
Part	XII	...	Languages of Madras State.

FIELD STUDY :	...	...	R. JAGANNATHAN, M. A., *(Research Assistant)*
PHOTOGRAPHS AND COLOUR TRANSPARENCIES :	...	...	N. D. RAJAN *(Research Assistant)*
MAPS:	...	...	M. GANESH LAL *(Research Assistant)*
SKETCHES :	...	...	A. RAMADOSS *(Upper Division Clerk)*
BLOCKS :	...	...	KLEIN & PEYERL *(Blockmakers, Madras-2)*

CONTENTS

		Page
FOREWORD		iv—vii
PREFACE		viii—ix

CHAPTER

I	INTRODUCTION	1 to 7
II	BRONZE ICONS OF SWAMIMALAI TECHNIQUE OF PRODUCTION	8 to 14
III	PRODUCTION OF STONE ICONS	15 to 18
IV	PRODUCTION COST	19 to 23

APPENDICES

Appendix I:		... ...	24 to 28
TABLE i.	List of rural crafts and number of persons employed in production.	...	24
„ ii.	Distribution of Artisan Communities.		
„ iii.	Distribution of articles of rural crafts by materials used.	... ...	25
„ iv.	Designs	...	26
„ v.	Consumption and sale		
„ vi.	Cost of Production	...	27
„ vii.	List of very skilled craftsmen of each community.		
„ viii.	List of Sthapathis	... ...	28
Appendix II:			
A.	Iconometric prescriptions	... ...	29 to 33
B.	Traditional designs, legends and iconographic prescriptions	...	34 to 46
Appendix III.			
	Statements of prominent Sthapathis	... ...	47 to 64
Appendix IV			
	Tamil questionnaire used in the survey of Stone Icon Industry	... ...	67 to 70

MAPS

1.	Map showing location of bronze and stone icon centres in Madras State.	Frontispiece
2.	Location map of Swamimalai	Facing page 6

ILLUSTRATIONS

Hammers, Chisels and Files used in icon-making	12 to 13
Sukhasana Murti	34
Somaskanda	35
Adimurti	34 – 35
Devi	34
Gowri	35

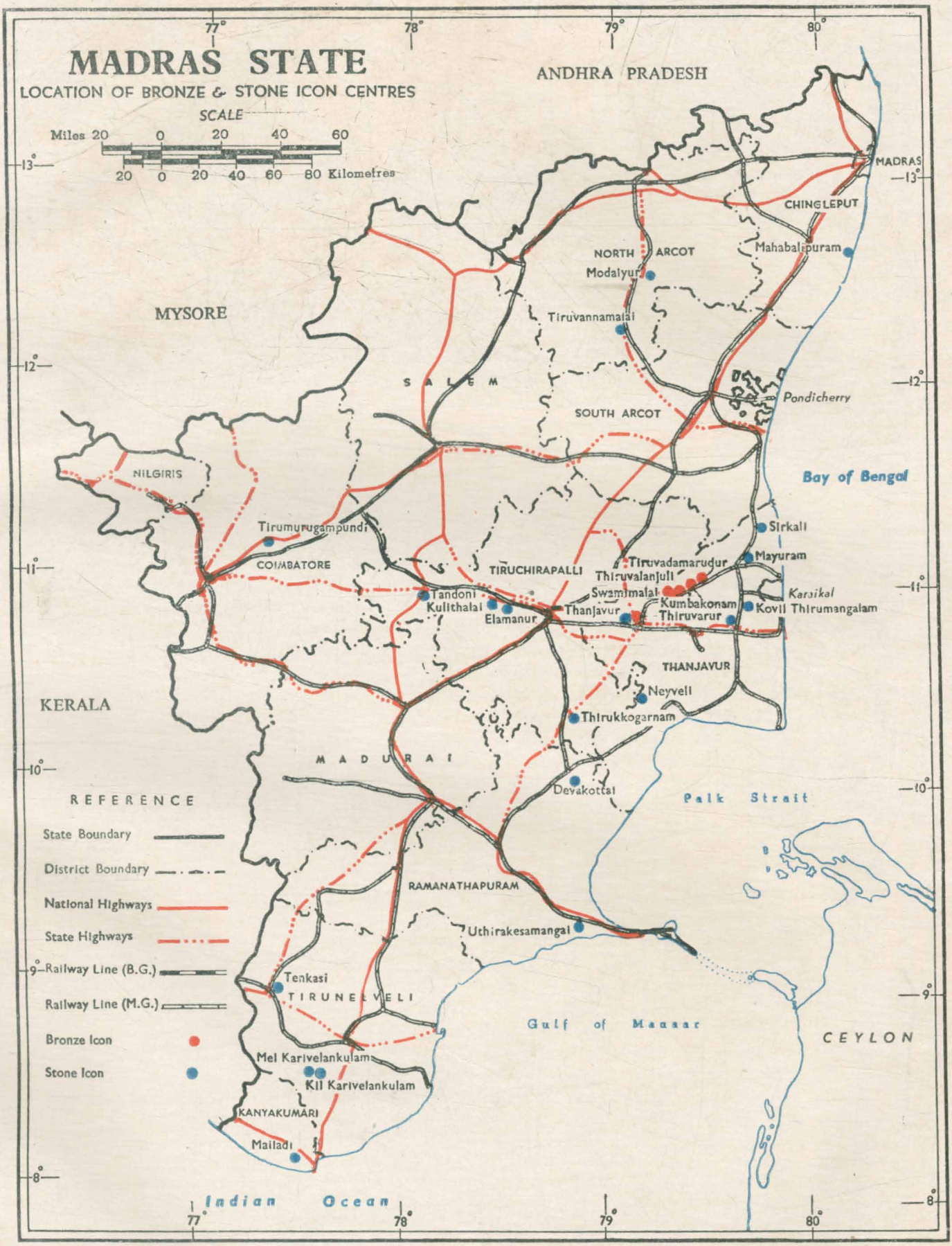
PHOTOGRAPHS

		Facing Page
1.	Preparation of wax model	8
2.	,, ,, Another stage	9
3.	A closer view of the operation	8
4.	Giving final touches to the wax model	9
5.	Preparation of the clay mould	10
6.	Ceramic crucibles used for melting metals	11
7.	Metal being melted in the crucibles	10
8.	Crucibles being lifted out of the furnace	11
9.	Metal image being taken out of the clay mould	10
10.	Frozen metal cast being taken out	11
11.	Molten metal being poured into the clay mould	10
12.	,, ,, Another view	11
13.	A metal image taken out of the clay mould	14
14.	Chiselling of the image in progress	15
15.	An image being refined with chisels and punches	14
16.	Surface of an image being refined by filing	15
17.	Half-finished icons of Shiva and Parvati	14
18.	Icons of Shiva and Parvati after refinement and polishing	15
19.	A finished image of Nataraja	14
20.	A set of artistic icons of Shiva and Parvati	15
21.	Blocks of granite stones from which icons are made	16
22.	Sthapathi marking out the rough outline of an image on a block of stone	17
23.	,, ,, Another view	16
24.	Making a firm impression of the outline with chisel and hammer	17
25.	A crude image in stone after the first stage of carving	18

		Facing Page
26.	Refining the crude figure	19
27.	Two icons — a crude figure and a refined image	18
28.	Delicate chiselling with sharp-edged chisels	19
29.	An icon being polished with sand paper	18
30.	Finished stone Icons	19
31.	Stone image of Swami Vivekananda	22
32.	Myladi Stone Workers' Cooperative Society	23

ART PLATES

1.	Bronze Icon of Nataraja	x
2.	Sthapathi preparing wax mould	8
3.	Sthapathi giving finishing touches to a stone icon of Virgin Mary.	16
4.	Bronze Icon of Bikshadanamurti	38
5.	Sthapathi giving finishing touches to a bronze icon of Nataraja	40
6.	Bronze Icon of Hanuman, Sita, Rama and Lakshmana	42
7.	Bronze icon of Durga	44
8.	„ „ Devi	46


MADRAS STATE
LOCATION OF BRONZE & STONE ICON CENTRES
SCALE
Miles 20 0 20 40 60
20 0 20 40 60 80 Kilometres
77°
78°
79°
80°
13°
12°
11°
10°
9°
8°
ANDHRA PRADESH
MADRAS
CHINGLEPUT
Mahabalipuram
NORTH ARCOT
Modalyur
Tiruvannamalai
MYSORE
SALEM
SOUTH ARCOT
Pondicherry
Bay of Bengal
NILGIRIS
Tirumurugampundi
COIMBATORE
TIRUCHIRAPALLI
Tandoni
Kulithalai
Elamanur
Thanjavur
Thiruvadamarudur
Thiruvalanjuli
Swamimalai
Kumbakonam
Thiruvarur
Sirkali
Mayuram
Karaikal
Kovil Thirumangalam
THANJAVUR
Neyveli
Thirukkogarnam
KERALA
MADURAI
Devakottai
Palk Strait
REFERENCE
State Boundary
District Boundary
National Highways
State Highways
Railway Line (B.G.)
Railway Line (M.G.)
Bronze Icon
Stone Icon
RAMANATHAPURAM
Uthirakesamangal
Tenkasi
TIRUNELVELI
Gulf of Mannar
CEYLON
Mel Karivelankulam
Kil Karivelankulam
KANYAKUMARI
Mailadi
Indian Ocean

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 traditional skills to modern skills is easier said than done and a thorough study may well reveal that it is perhaps cheaper from the social point of view to develop industrial skills from scratch than to try to graft traditional skill on alien soil. A rather tragic case of failure to make what would on the face of it seem a minor adjustment cast its heavy shadow on the nation when it was discovered that goldsmiths used to working on 22-carat gold all their lives felt sadly helpless when asked to work on 14-carat, so narrow and unadaptable were the limits of their skill and proficiency and so rudimentary the tools and equipment with which they and their forefathers had worked. This fiscal accident revealed that tools are even more important than skills.

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

Thus, in the first circular of 18 February 1960, it was suggested that the inquiry might be conducted through the agency of the Development Department, the State Director of Industries, the Director of Tribal Welfare, the Registrar of 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 designs in which he operated, the frame of new as well as traditional producer-customer relationships in which he still worked, and how far he was ready to pierce his own caste-tribe socio-economic cocoon and make a break through to new opportunities promised by the Five Year Plans. The aim was to hold up the mirror to hereditary skills struggling with the dialectics of tradition and change.

Thus the first part of the questionnaire, purporting to be a village schedule, sought to take account of the size and population of the village, its remoteness from or proximity to centres of trade and commerce, in short, the degree of isolation in which the artisan worked, and the relative strengths of various communities in the village which would afford clues to social interdependence and the prevalence of the JAJMANI system. The second part was devoted to artisan communities in the village; the several castes of artisans, the number of families in each, the total number of workers, males and females, the extent of 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 differentiations as they reflect not only the very culture patterns of the country but the persistent inventive faculties of the craftsmen. The importance was emphasised of giving full attention to articles of domestic use as it is in their shapes, designs and forms that the culture patterns and traditional skills persist most tenaciously.

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

Investigations conducted between September 1961 and May 1962, including a study group of all States and the Social Studies Division in December 1961 at Delhi, stimulated many of the States into going in for a much enlarged schedule. The revised village schedule itself, the counterpart of the first part of the February 1960 schedule, contained 19 large sections containing elaborate and probing questions. The Family Schedule for practising artisan families similarly contained 19 main questions each subdivided into many questions. The Family Schedule for non-practising artisan families contained 21 questions. There were schedules for the study of 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 survey a compilation has been made of all handicraft centres in each State and an inventory

prepared of skilled craftsmen. Photographic and other documentation has been built up to constitute what may now be regarded as the most considerable repository in the country. Elaborate and accurate maps of craft centres in taluks, tehsils and districts are either ready or under preparation. A full census of all fairs and festivals, weekly hats and markets, throughout India, has been taken and is being published for the first time. Andhra Pradesh has embarked upon a project of chronicling the social and religious antiquity and uniqueness of every fair and festival. A separate volume will be devoted to each district which promises to be of the utmost value to sociologists and orientalists. A full and complete inventory, replete with sketches and measurements of every object has been prepared of exhibits in museums of tribal crafts in India. There has been a fairly satisfactory survey of houses and buildings, indigenous architectural designs and use of local building material of the whole country. All this has been entirely a labour of love, patiently organised and executed under great strain and in disregard of health and comfort, for which I take this opportunity of expressing my appreciation and grateful thanks to my colleagues.

New Delhi
July 30, 1964.

ASOK MITRA
Registrar General, India

PREFACE

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 background, 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, Registrar 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 artistic appeal.

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

been already published. The present volume is on "Icons in Stone and Metal". Monographs on the following have been prepared and will be issued in due course :

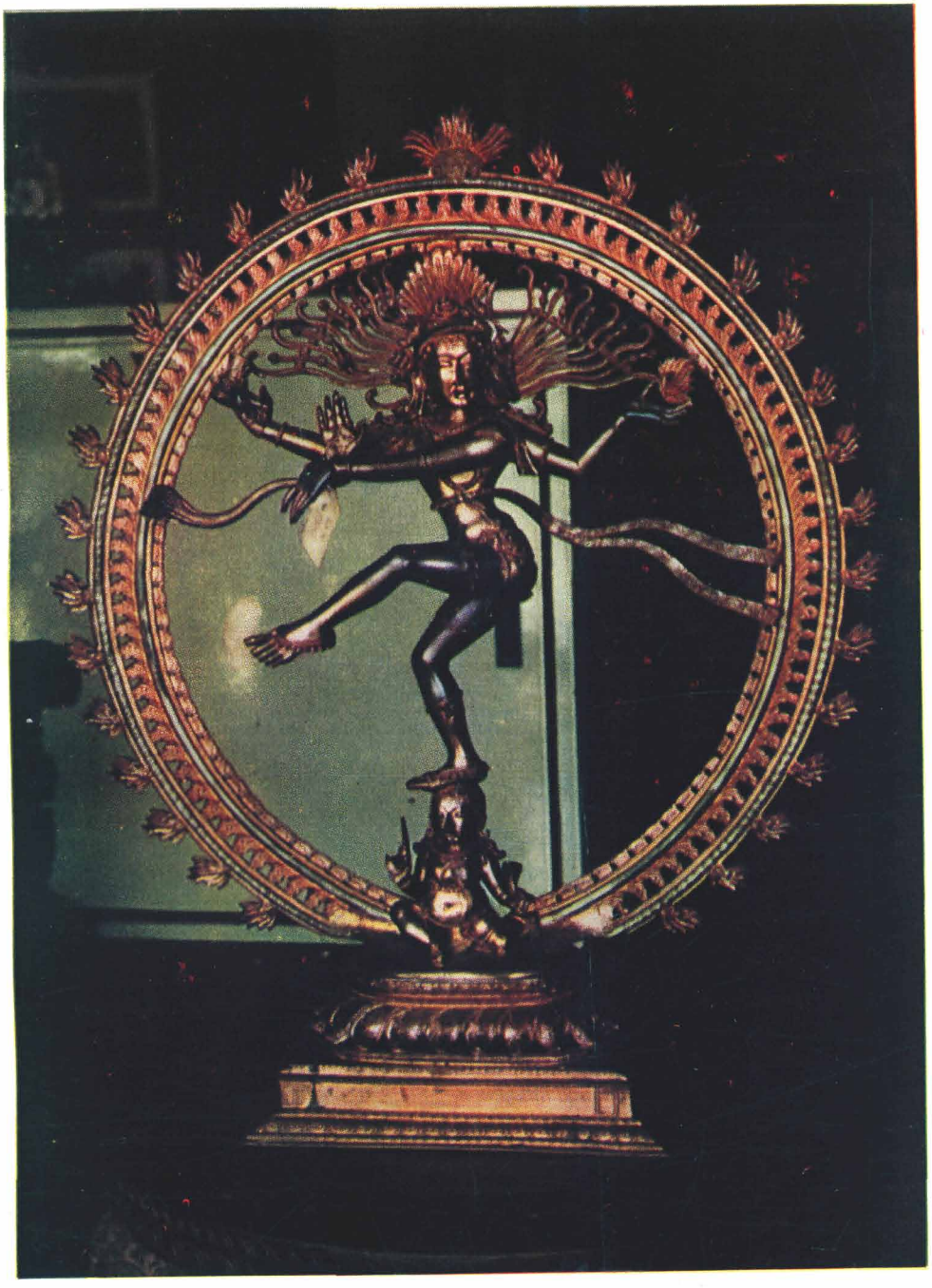
1. Woollen Druggets of Wallajapet
2. Glazed Pottery of Karigiri
3. Bell metal and Brass metal work of Nachiarkoil
4. Wood carving of Madurai and Virudhunagar

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.

This survey was conducted by Sri R. Jagannathan, Research Assistant who has since left the Department and joined the Indian Police Service. I had also some assistance from Sri J. R. Ramanathan, M.A.B.L. Deputy Superintendent of Census Operations.

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 reader.

P. K. NAMBIAR



BRONZE ICON OF SIVA AS NRITYA-MURTI NATARAJA

ICONS IN STONE AND METAL

CHAPTER I

INTRODUCTION

Origin of Concept

"Every Icon is at once a symbol and a representation; the worshipper though he knows that the deity takes the forms that are imagined by his worshippers is nevertheless persuaded that the form is like the deity."

Dr. Ananda K Coomaraswamy
History of Indian and Indonesian Art.

It is difficult to indicate precisely the date of origin of this craft in South India. For the proper appreciation of the spiritual and religious background of this art, it is, however, desirable to discuss its origin. Tholkappiyam, the earliest grammar in Tamil language refers to the practice of setting up tombstones called 'Veerakkal' at places where warriors were buried. It cannot be said that these stones had the figure or image of the warrior worked out in high relief but one can think with Mr. Rajamaniakanar that some sort of imagery was known at the time of Tholkappiyam whose date is placed at 300 B. C. But this view is not supported by archaelogical findings. Tholkappiyam has further given the classification of land terrains in four groups, viz,. "Kurinji," "Mullai", "Palai" and "Marudham" and has indicated that Murugan, Thirumal, Korravai and Indiran are the presiding deities of these four land types. These names are also mentioned in Sangam literature such as "Agananooru". We cannot, however, conclude that these deities were actually worshipped in their anthropomorphic image forms.

Literary evidence

2. The existence of temples during these times can, however, be inferred from literary evidences. Poet Uruthirankannanar indicates the lamentable condition of a temple of his times in "Agananooru". Much later, Thirumangai Alwar refers in one of his pasurams to the seventy temples which the Chola King Chenganan had built during his reign. It is also stated in "Silappadikaram" that King Chenguttuvan had brought stones from the Himalayas to make the image of Kannaki. We also find in the same classic, elaborated descriptions of Krishna, Thirumal the Lord of Thiruvengadam, Murugan and Siva with his trident. It would be safe to infer that these deities were worshipped in their anthropomorphic forms and that the knowledge of imagery which was generally known to the ancient Tamils was applied in making the image of gods. It is not definite that stone and metal had been used extensively in the making of images. The story of Chenguttuvan bringing stone to make the image of Kannaki may suggest the conclusion that imagery in stone was not unknown. It might also be possible that mortar (சுண்ணாம்பு in Tamil) and brick were more extensively used in the making of these images. In the poem of Uruthirankannanar to which we have referred, the descriptions strongly suggest that the temple was built in brick and mortar. In the description of Kavirippumpattinam, "Manimekalai" mentions that during "Indira Vizha", the palaces and public buildings of the city were decorated with images made of clay and mortar and people were highly entertained by these decorations. It also refers to the prevailing practice in those times of making the images of deities in clay, wood and stone and of the painting of these images in walls by experts. In the absence of any specific archaeological evidence, any attempt to establish the ancestry of this craft and trace its origin during the sangam and pre-sangam period based on available literary evidence cannot be sustained.

Development of Bhakti Cult

3. All that we can infer from the passages quoted above is that the art of image making was known to the early Tamils and that image worship was not unknown to them. The image might have been in stone or clay. Historically, the centuries between 4th and 10th witnessed the development of bhakti-cult in Tamilnad. The age of Alwars, which began with the Poygai Alwar who is supposed to have lived during the early 5th century, extended to the end of the 9th century. This period witnessed the remarkable efflorescence of Vaishnavite movement which manifested itself in a literary exuberance diffused with the feeling of devotion to the Lord. The Saivite wing of the bhakti movement also gathered momentum through the literary outpouring and preachings of Nayanmars, and the earliest of them, Appar, lived in A. D. 600. Gnanasambandar who followed him lived around A. D. 639. He was followed by Sundaramoorty, Manickavachagar and a number of other Nayanmars. The result of their teaching and

activity was a deepening of religious fervour in the society and conscious need for temples and activities associated with temples. The growth of many temples in South India could be traced to the effect of the bhakti movement manifesting itself in this period.

Role of Pallavas

4. With the establishment of the Pallavas in South, we have authentic records to trace the growth of temples and the patronage of the Kings in the development of the art of temple construction and imagery. The Mandagapattu inscriptions (near Villupuram) of Mahendravarman is the earliest of the Pallava inscriptions. It contains one Sanskrit verse in four lines of writing and mentions the creation of the temple for Brahma, Iswara and Vishnu without brick, timber and mortar. The joy experienced by the monarch on the completion of his first attempt of rock-architecture is clearly manifested in this short record. It could be inferred from this record that the temples were built in brick, timber and metal. The era of stone architecture which bore such rich fruits in the later period began with this and the stone inscription of Mandagapattu has thus a symbolic significance.

The succeeding Pallava Kings showed even greater enthusiasm in the construction and carving of temples. The rock cut temples and rathas at Mamallapuram i. e. Mahabalipuram, Tiruchirapalli, Pallavaram, Mogalrajapuram, Undevalli and Bhairavakonda give us living evidence of Pallava interest in rock architecture. Structural temples constituted the second phase of their activity. The temples at Mamallapuram and Panamalai and the temples of Kailasanath and Vaikunta Perumal at Kanchi, all belonging to Rajasimha group are the earliest structural temples in stone in South India. This was followed by the Nandivarman group comprising among others the Mukteswara and Matangeswara at Kanchi and Viratteneswara at Tirutteni. They are the earliest examples of stone temples constructed in these parts and with them began the pioneering attempts which constituted an example for the later Cholas.

Role of Cholas

5. With the rise to power of the Vijayalaya dynasty of Cholas in 846 A. D, a second phase in the architectural style and constructional activity began. No big temple has been built to the end of 10th century. But many small temples were built and many old temples in brick and mortar were renovated in stone. Though the professed religion of the Kings was Saivism, no marked hostility was shown towards Vaishnavism. Temples were built in commemoration of victories in wars and in memory of ancestors. Whatever evidence we have in the form of stone and copper inscriptions show that Kings of Chola dynasty were patrons of many temples. Thus, Vijayalaya built the temple at Nartamalai. The Balasubramanya temple at Kannanur and Nagesvara temple at Kumbakonam were built during the reign of Aditya I. The Parantakas I and II built a number of temples among which are the Koranganatha temple at Srinivasanallur and Moovarkoil at Kodumbalur. Sembianmahadevi, the spouse of Parantaka II, figures prominently in many sasanas as the source of patronage of many temple renovations and constructions. The record from Thirukkodikkaval in Thanjavur district mentions the construction in stone of the temple there by the great Queen-Mother in the 11th year of her son's reign and the re-engraving on the walls of the temple of the older inscriptions in loose stones found there. She had thus preserved to posterity as many as twentysix inscriptions. Incidentally, the record refers to the widely prevalent trend at that time of renovating earlier brick and mortar temples in stone. Inscriptions from the temples at Uyyakkondan (known to the readers of Devaram as Thirukkarkkudi), Thirumudukunram, Thirumanancheri, Thiruvaiyaru and Thiruvenkadu reveal that these temples received the benefits of Sembianmaha Devi's patronage. This period paved the way for stupendous achievements of Raja Raja and Rajendra. The Brahadeesvara temple at Thanjavur was built during the reign of Raja Raja I and the temple at Gangai Konda Cholapuram was built during the reign of Rajendran; and the Darasuram temple during the reign of Raja Raja II. These magnificent achievements could not be repeated by the later Cholas. But their patronage took the form of enlarging the existing structures and completing stone renovation as can be seen in the construction of the Siva temple at Thiruppuvanam and the Ranganathar temple at Srirangam by Kulottunga.

The inscriptions we have described so far tell us only about the activities of the Kings and Queens. It is likely that there was sufficient religious fervour among the people to support the royal patronage. Further such activity in temple construction would necessarily create a demand for the services of architects and stone masons. It was likely that festivals were celebrated in all the temples with processions. Such intense religious activity created the need for portable images which could be carried from place to place. The origin of bronze iconography could be traced to the period of Cholas. This inference is supported by the fact that no authority would give a date earlier than the reign of Cholas to the South Indian bronze icons. Stone inscriptions found in many temples also reveal the fact

that there was the practice of installing images in these temples by the order of the King or the Queen who were generally the donors for such images. A temple inscription in the famous temple of Thanjavur records the installation of images of Raja Raja and his consort in the temple. It can be inferred from this inscription that besides the images of deities secular imagery in metal was also known at that time.

Later Period

6. Even after the decline of the Chola power, royal patronage was extended to the art of making images in stone and metal. The later Pandyas, the Naickers and the Mahrattas extended as much patronage as the Cholas. But instead of creating new temples the activity was limited to the construction of ordinary temples and renovation of old ones. Even during the British regime, the Chettiars of Nattukkottai, the Polygars and petty chieftains of Madras State did their best to preserve the craft from extinction. In no case, however, could the monumental achievements of the earlier attempts be repeated and the architecture and sculpture of the later years lacked the "elan vitale" of the Chola and Naicker periods.

Kammalas—The Artisan Classes

7. The artisan classes engaged in the making of the images are generally known as Sthapathis who belong to the community of Viswakarmas known more popularly as Kammalas in South India. In "Silapadikaram" Kammalas are described to have accompanied the King to instal the image in Kannaki's temple. The word is perhaps derived from sanskrit 'Karma' meaning 'work' and may have later changed in popular usage 'Kammalans'. Thurston, however, is of the view that Kammalan is a corrupted form of the Tamil word, Kannalan or Kannalar in support of which he cites the occurrence of these words in Tamil poems such as Thondemandala Satakem and Er Ezhupathu. Kannalan denotes one who rules the eye or one who gives the eye. When an image is made, its consecration takes place at the temple. Towards the close of the ceremonial, the Kammalan who makes the image comes forward and carves out the eyes of the image. The name is also said to refer to those who make articles pleasing to the eyes. The fact is that not only stone masons but other artisans such as Tachan and Kollan are included in the caste of Kammalans and this gives support to the view expressed earlier. The Tamil Kammalas are to be found in three endogamous territorial groups, Pandya, Chola and Kongu. The Pandyas live principally in Madurai, Tirunelveli districts, the Cholas in Tiruchirapalli, North and South Arcot districts and Madras. The Kongas are chiefly found in Salem and Coimbatore districts. In some places, there are still further sub-divisions of territorial origin.

Social status of Kammalas

8. The Kammalans are made up of five occupational sections viz , Tattan, Kannan, Tachen, Kal Tachen and Kollen or Karuman. The name Panchala which is sometimes used by the Tamil as well as the Kanarese artisan classes has reference to the five-fold occupations. The various sections inter-marry but the Goldsmiths have especially in towns, ceased to inter-marry with Blacksmiths. The Kammalas, claiming to be Brahmins, have adopted brahminical gotras and the five sections have five gotras called Visvagu, Janaka, Ahima, Janardhana and Ubendra after certain rishis. In spite of the useful function which Kammalans had in society, their status was always low in that society dominated by priestly and martial classes. Silappadikaram has referred to them as Sirappudaikkammiyar thereby suggesting that Kammiyars had distinct social status in that society, This referred to second century B. C. From whatever evidence we have of later years, it is evident that the status of Kammalans went down appreciably. From the myths and legends narrated about Kammalans and from a reading of the inscriptions of those days we have to conclude that in the later centuries the social status of Kammalans was decidedly low. Many social indignities were imposed on them and many rights which the upper classes usually enjoyed were withheld from them. There were quarrels between the Kammalas and the Vellalas. Thurston records a story according to which the Vellalas once claimed the Kammalas as their jathippillaigal or caste dependents and the Kammalan refused to accept this status. The fight over this issue became so serious that the King of Kancheepuram had to enquire into it which he did by ranging these two castes and their followers on opposite sides. The Kammalans stood on the left and the Vellalas on the right. From that day onwards, the Kammalans came to be known as Idengaiyars. The King's decree went in favour of the Vellalas and the Kammalas had to accept their status as Vellalas' jathippillaigal. Later, this led to the setting up of separate mandapams, temples and dancing girls for them who were not allowed access to the regular institution intended for the right hand Vellalas. Dancing girls of the right hand faction would not perform before them; musicians of the right hand faction would not play in their houses. The Kammalans were not allowed to ride in palanquins. Elsewhere in some villages, separate quarters were set up for the Kammalas. Some of the ordinary rights enjoyed by

the Kammalans could be done so only with the permission of the King. From Karur in the Tiruchirapalli district and Perur in Coimbatore district, we have records of the time of Kongu Chola ruler registering the privileges accorded to the Kammalas of the Vengala Nadu and Then Kongu and artisans elsewhere. These privileges included the blowing of two conches, the beating of drums at domestic occurrences, good and bad; the use of shoes when they went out; and plastering the walls with lime plaster. The construction of houses with two storeys and with double doors as well as the right to decorate the front of their houses with garlands of waterlilies is another concession granted to them. Inscriptions of 1628 A. D. from Ambasamudram in Tirunelveli district record the orders of Muthuveerappa, prohibiting the five divisions of Kammalas from having communal fellowship. Mangammal the queen regent of Madurai, is said to have granted a cadjan sasanam authorising them to follow the rites prescribed for Brahmins in regard to Upakarma. All these inscriptions indicate that no distinctive social status was enjoyed by Kammalas throughout the centuries in spite of the useful and vital work they did for the society. The Kammalas keenly felt their low status in society. During the centuries they developed a sort of inferiority complex which made them resent the slightest slur on their caste.

Origin of Kammalas

9. Many legends and fictitious stories have gained currency in popular tradition about the origin of this caste. An unconscious attempt has been made to elevate the status of this caste by associating it with legendary stories and mythical rishis and Kings. These stories were intended to give them a feeling of self-importance which they could not get from the realities of social life. Thus the story is told recounting the original caste from rishi Viswakarma who with five faces, three eyes and ten arms was born out of the third eye of Siva and was blessed by him to be the presiding deity of all artisan work on earth. Five sons were born to him from his five faces. They were Silpi, Manu, Mayan, Dwasta and Pandava. Silpi was ordained to work in stone, Manu in iron, Mayan in wood, Dwasta in precious metals and Pandava in brass and bronze. Thurston records a similar legend with minor variations. "Viswakarma" is said to have had five sons, viz,. Manu, Maya, Silpi, Dwashtra and Daivagna. These five sons were the originators of the five crafts which their descendants severally follow. Accordingly, some engage in smithy work, and are called Manus and others in their turn devote their attention to carpentry. These are named Mayas. Others again who work on stone are known as Silpis. Those who do metal work are called Dwashtras and those who are engaged in the making of jewellery are known as Daivagnas. According to other legend, rishi Kashyapa had two wives, Thithi and Athithi. Two sons were born to him, Mayan of his wife Thithi, Vaivasvathen of his wife Athithi. Vaivasvathen married Sagna and Saya, daughters of Viswakarman and had three sons, Vaivaswatha Manu, Yama and Sani and two daughters Thapathi and Yamuna. Mayan, the half brother of Vaivesvathan was the architect on earth while Viswakarma was the architect in heaven. Mayan and his successors were routed by Dwastha, son of Viswakarma, and consequently took to the service of the Rakshasas. When these Rakshasas fell, they (the descendants of Mayan) came back to the service of men but as jathippillais or caste dependents of the successors of Viswakarma. The Agamas are said to be the works of Viswakarma whereas the Silpasastras were the work of Mayan. The many discrepancies between the Agamas and the Silpasastras regarding architectural and sculptural prescriptions are cited in support of the above legend.

Sthapathis among Kammalans

10. The Kammalans called themselves Viswakula Brahmins and followed Brahmin ways of living and ceremonies. They called themselves acharis and pattars which are the corrupted forms of brahminical titles Acharya and Bhatta and claimed a knowledge of the Vedas. As the Brahmin priests refused to officiate in their houses, they created their own priests. Though the Kammalas called themselves Brahmins and claimed an ancient and lofty descent, the Non-Brahmins in general did not accept their claims and the Kammalans never enjoyed the status of the priestly and martial classes. As Mr. H. A. Stewart observes, "it is not difficult to account for the position held by the Kammalans for it must be remembered that in these early times the military castes in India as elsewhere looked down upon all engaged in labour; whether skilled or otherwise. With the decline of the military power, however, it was natural that a useful caste like the Kammalans should generally improve its position and the reaction from their long oppression had led them to make the exaggerated claims which are ridiculed by every other caste, high and low." Sthapathis have, however, enjoyed a higher status among the Viswakarmas and have been traditionally accepted more freely by the higher castes. The construction of temples and the making of vigrahas required a knowledge of the Agamas and the Silpasastras which were mainly in Sanskrit. Sanskrit has therefore formed a bond between the priestly classes and the elite of the artisan

classes, viz., Viswakarma as a result of which some brahminical culture was transmitted to the latter. The Silpasastras also demand of a Sthapathi, knowledge of the sastras and versatility in related arts.

Sthapathis and other artisans

11. This background has given this community an exaggerated idea of their own importance and achievements with its natural reaction viz., a tendency to show off before other castes. Though they belong to the same traditional caste as other artisans, Sthapathis form a different class functionally. They are not merely stone carvers or metal workers but are something more. Their sway extends both in the realms of conception and of execution of the design and they are artists and craftsmen at the same time. They should be well versed in theory and practice of their craft and should be capable of taking charge independently of the execution of architectural pieces. It is his capacity for conceiving and executing of the design which has elevated the Stapathis from the rank of ordinary craftsmen. No doubt in actual execution, they are helped by the common craftsmen. The Silpasastras have divided the group of workers into four categories viz., Sthapathi, Sutragrahi, Vaiteki and Dakshagen. It has given the pride of place to the Sthapathis and would not admit any one into their ranks who is not accomplished in the art of construction and in the related spheres of music, dancing, painting, mathematics and religion. The word Sthapathi is not a caste suffix but a functional term derived from Sthepanam or Sthapithem. The word is not found in any of the Chola inscriptions and even to-day the caste title of Sthapthis are either acharyas or bhattas. Generally, the names of architects who have built temples or images are not handed down to posterity. Only some inscriptions do make a passing reference to the architects or sculptors who built a particular temple or made a particular image. One inscription mentions a few silpis who made the Mahabalipuram sculptures as follows :

1. Kevadha Peruntachahen
2. Bhayya Mizhippan
3. Sata Mukhyan
4. Kaliyani
5. Tiruvotriyur Abajar
6. Kollan Semagan

Another inscription of the time of Kulothunga I mentions the name of the architect who built the Mahadeva temple at Purisai as Chandrasekharan Ravi who was known by the title Cholendra Simha Asari. A third inscription of the Rajendra Chola's reign mentions the architect who renovated the Thiruvotriyur temple as Ravi with the title of Veerachola Tachchan.

Emergence of Sthapathis

12. The word Sthapathi is not mentioned in any of these inscriptions and they are known by terms Achari and Tachan which are titles conferred on them. All were self-assumed. Further, they reflect the stationing of these artisans among a section of the traditional artisan classes. Interest shown by the Pallava Kings and the Chola Kings in the construction of new temples and the renovation of old ones in stones may be responsible for the emergence of the distinct class of craftsmen who came to be known later as Sthapathis. It is also possible that the many Silpasastras were prepared during this period. Some literature about construction had existed even during the earlier ages. But nothing definite is known about their nature and contents. The texts of Silpasastras that have been preserved after surviving the ravages of time are now attributed to a much later age.

The Skill of Sthapathis

13. Artisans were then known by the kingdom from which they hailed. This tradition has continued unbroken till to-day. Sthapathis are known as Chola Sthapathi, Pandya Sthapathi or Kongu Sthapathi according as they belong to the Chola desa, Pandya desa or Kongu desa. No rigidity was however observed in employing the Sthapathis and movement from one place to another was part of the normal life of the Sthapathis. It was so then and is still among many Sthapathi families, though some who exclusively do metal work show a tendency to work at a settled place. Normally, they used to move from place to place doing Thiruppani work and would be away from their homes for a number of years at a stretch. In these long sojourns they took their families with them and settled down at new places whenever adequate opportunities were available The boundaries of kingdoms or the change of dynasties formed no barriers to their movements. The story of a Chozha Sthapathi who was an expert artisan is typical of the Sthapathis in those days and is also incidentally an illustration of the jealousies and vanities from which even the religious-minded kings were not free. The Sthapathi was commissioned by a Chola king to make the image of Nataraja in pure gold. When the metal did not run into the cast, the king and the Sthapathi were both perplexed. Siva himself appeared before the Sthapathi and asked him to add a little copper to the gold so that the metal might run easily into the cast. When the king suspected the integrity of the Sthapathi, he felt insulted, left Chola desa and went to the land of

Pandyas where he adorned the temples at Chepparai, Karisoolnthamangalam and Kattarimangalam with beautiful images. The beauty of these images was so striking that the king who commissioned these images was seized with the fear that the Sthapathi might reproduce them at other places too and so ordered his hands to be cut off. Despite the loss of his limbs, the Sthapathi managed to make another image of Nataraja which was installed at Karivaiyur and which is worshipped to this day. The present Sthapathis of Karivaiyur claim descent from this ancient Sthapathi from Chola desa

Learning of the Art by Sthapathis

14. Such movements from place to place for work undoubtedly contributed to an unsettled condition in the life of the Sthapathis. But it has helped in the transmission of the tradition and experience from one part of the country to another and from one generation to another. Sthapathis are trained for the work from cradle. The experience and skill required to plan the construction of a temple or to carve a beautiful image within a piece of rough stone cannot be acquired in a year or two. The son begins to help his father as soon as he can and as he helps he learns. The constant observation of his father in his attempts in soft stones, wood, wax and metals trained his mind and hands from an early age in the art of image making. He learns the theory of his work unconsciously and the knowledge and experience of his father which represents the effort of a life time would be transmitted to the son without any deliberate attempt to learn. He then goes for a period of apprenticeship under some other Sthapathi, learning whatever he can from his new master. That is how a perfect artisan is evolved in course of time.

Sthapathis making Stone Idols

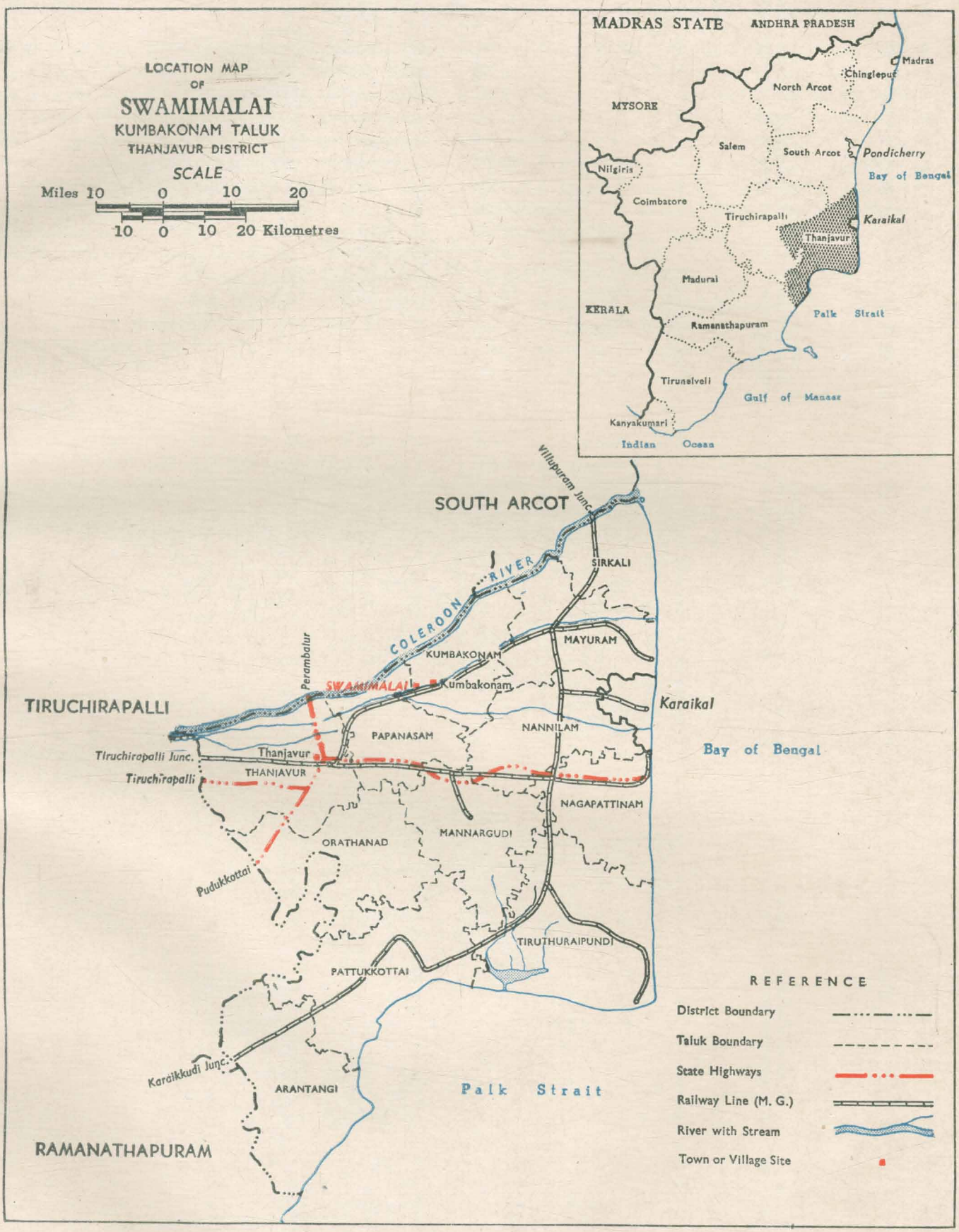
15. Icon workers in the State can be grouped into two categories, those who work exclusively in stone and those who work only in metal. Stone workers are to be found in many places in Madras. We have made a complete enumeration of all the stone workers. This has been done by sending a standard questionnaire to each Sthapathi known for his work and getting it filled by him. We have compiled as an Appendix to this volume a list of Sthapathis working in stone and distributed in Madras State giving all the particulars as they are given by the Sthapathis. We have not checked any of the statements made by the Sthapathis and we consider that they are true to facts and we will be making some comments on this in the later part of this volume. As will be seen, Karivelankulam in Tirunelveli district and Myladi in Kanyakumari district are two places where there is some concentration of Stapathis and stone workers. With one or two exceptions the Sthapathis belong to the Viswakarma community.

Sthapathis making Bronze Images

16. The metal workers are concentrated in and around Swamimalai. There are 22 Sthapathi families working in metal (bronze), 17 of them working at Swamimalai, one at Thiruvalenchuli near Swamimalai, one at Thanjavur, two at Thiruvidamarudhur and one at Kumbakonam. The Sthapathis at places other then Swamimalai were also the residents of Swamimalai and they have moved away from their ancestral home in search of work. They all belong to the Viswakarma community and they claim that they belong to the same gotra. Their marital alliances are always arranged with the other Viswakarma branches of Goldsmiths and Silversmiths of Thanjavur and Kumbakonam. This is another evidence of their common ancestry.

Metal Workers at Swamimalai

17. The reason for the concentration of metal workers at Swamimalai is lost in antiquity. The oral tradition has it that the present day Sthapathis are the successors of one Akora Bhadra Acharya who came to Swamimalai and settled in that place after the construction of the Swamimalai temple. The age of Agora Bhadra or his arrival at Swamimalai is, however, uncertain. Out of the 17 families resident at Swamimalai, 26 members actually take part in the work in the Pattarai or workshop. The labour of the female members is seldom used in production of icons. A Pattarai or a workshop may be taken as a unit. Every Pattarai has a Sthapathi who is a master craftsman; sometimes two or three members of the same family may work in a Pattarai. Brothers living in the same household may be having different Pattarais. Besides the Sthapathi, labour will be hired to work in the Pattarai. At the time of our survey, there were 21 of these labourers working in different Pattarais. They do not belong to the Sthapathi family and not always to the Viswakarma community. Often, they are drawn from various other castes like Vaniyans, Kakaliyars and Pattunoolkarans who have found that work in the new job is rewarding. The number who are actually found working in the Pattarais at the time of our survey is likely to be less than the number which will constitute the reserve for the workers. Whenever contracts come in and additional labour is required, such labour will be always forthcoming. Sometimes as many as 15 labourers will be employed in a Pattarai. Not all of them are equally


LOCATION MAP
OF
SWAMIMALAI
KUMBAKONAM TALUK
THANJAVUR DISTRICT
SCALE
Miles 10 0 10 20
10 0 10 20 Kilometres
MADRAS STATE
ANDHRA PRADESH
Madras
Chingleput
North Arcot
MYSORE
Salem
South Arcot
Pondicherry
Bay of Bengal
Nilgiris
Coimbatore
Tiruchirapalli
Karaikal
Thanjavur
Madurai
KERALA
Palk Strait
Ramanathapuram
Tirunelveli
Gulf of Manaar
Kanyakumari
Indian Ocean
Villupuram Junc.
SOUTH ARCOT
SIRKALI
COLEROON RIVER
MAYURAM
KUMBAKONAM
Perambalur
SWAMIMALAI
Kumbakonam
TIRUCHIRAPALLI
Karaikal
NANNILAM
PAPANASAM
Thanjavur
Tiruchirapalli Junc.
Tiruchirapalli
THANJAVUR
Bay of Bengal
NAGAPATTINAM
MANNARGUDI
ORATHANAD
Pudukkottai
TIRUTHURAIPUNDI
PATTUKKOTTAI
Karaikkudi Junc.
ARANTANGI
Palk Strait
RAMANATHAPURAM
REFERENCE
District Boundary
Taluk Boundary
State Highways
Railway Line (M. G.)
River with Stream
Town or Village Site

efficient or skilled. Some, due to long association with the sequences of the craft are able to assist the Sthapathi in such operations as the pouring of the metal cast. Many of these are employed permanently. Others are skilled in varying degrees and are employed only when there is need for their labour in the Pattarai. The actual modelling of the image in wax is still done only by the Sthapathi and the final touches to the metal cast are also given by him. No Sthapathi works in other Pattarais permanently for wages. The wage rates for the non-Sthapathi craftsmen range between two and three rupees per day, depending upon their experience. The Sthapathi workers whenever they go for wage work are paid between four and six rupees per day.

Swamimalai

18. Swamimalai is a village on the banks of the river Cauvery, four miles west of Kumbakonam in Thanjavur district. It is an important pilgrim centre and has a population of 5,000. Swamimalai is famous for its beautiful temple, with Lord "Subramanya" as the presiding deity. It is said to be one of the six specially sacred temples in which this God is worshipped. Lord Subramanya is worshipped as "Kartikeya" in North. Other reputed temples of Lord Subramanya in South India are Pazhani, Tiruchendur, Pazhamudircholai (Alagar Malai), Tiruthani and Thiruparangunram. Remarkable specimens of bronze icons noted for their pleasing form and perfection and facial expression are manufactured at Swamimalai.

Institutes producing Icons

19. Generally, every establishment is a hereditary one and is handed over from one generation to another. The establishment included a training centre run by the Madras State Industries and Commerce Department with the assistance of the All India Handicrafts Board for imparting training to young members of the traditional families with a view to preserve their tradition. A Cooperative Society, the main object of which is the improvement of icon manufacturing industry by providing encouragement of the production of icons, is also functioning.

CHAPTER II

BRONZE ICONS OF SWAMIMALAI

PRODUCTION TECHNIQUE

Making of Metal Images as described in Manasara

Metal icons are produced in what is traditionally known as the *Madhu Chistam* or cire perdue casting technique. A description of this technique is found in the ancient text of Manasara, which is worth quoting.

"According to the Navatala measurements the expert should first prepare the image in wax complete with all the limbs, yellowish in colour, beautiful to look at and with weapons and arms as prescribed.

After placing the wax tubes of the length of the dhatura flowers on the back, on the shoulders and on the neck or the crown of the image, the artist should besmear the image with refined clay.

To clay should be added charred husk, finely rubbed, cotton severed a hundred times and a little salt finely powdered. All these when mixed with clay, should be finely ground on a smooth stone, and the paste should be applied three times and around the image. The first layer of clay should be transparent and thin and should be dried up in the shade. After a couple of days a second layer should be applied. When dry again there should be the third coating thickly applied.

One should besmear the whole image with clay leaving the mouths of the tubes open and the wise men should dry up the clay coating with caution and judgment.

The expert should first (i.e. before beginning the process mentioned) take the weight of the wax content of the image which has to be made in brass, or copper or silver or gold.

Brass and copper should be taken ten times that of wax; silver twelve times; and gold sixteen times. Then one should encase the metal either gold or one that is desired with clay and coconut shaped crucible (thus formed) should be dried up in the aforesaid manner.

Next one should melt away the wax from the mould by heating (the mould) in fire; and should afterwards heat the crucible in cinders.

Brass and copper melt surely with the help of cinders just kindled. Silver melts with glaring cinders, while gold with cinders flaming fivefold.

After making a hole with an iron on the top of the crucible and holding it tightly with a pair of tongs one should bring the heated crucibles out of the cinders.

One should place a burning wick in the mouth of the tubes of the heated image.

The adjacent fire should be put out for the purpose of cooling the mould with the molten metal. When image gets naturally cool, the expert should break up the clay mould very carefully.

Then the metal image thus prepared verily resembles that in wax endowed with similar limbs and details. When there is seen anything superfluous that should be put right with charema, the tubes should also be cut away and after that the image would have to be finished.

After making the image by this method, the king should install it on an auspicious day according to the usual rites and should offer daily worship to it."

The technique of icon casting as practised by the Sthapathis of Swamimalai is in no sense an improvement on what is described in Manasara. The tradition and technique have survived unchanged.

Ignorance of Silpasastra by Sthapathis

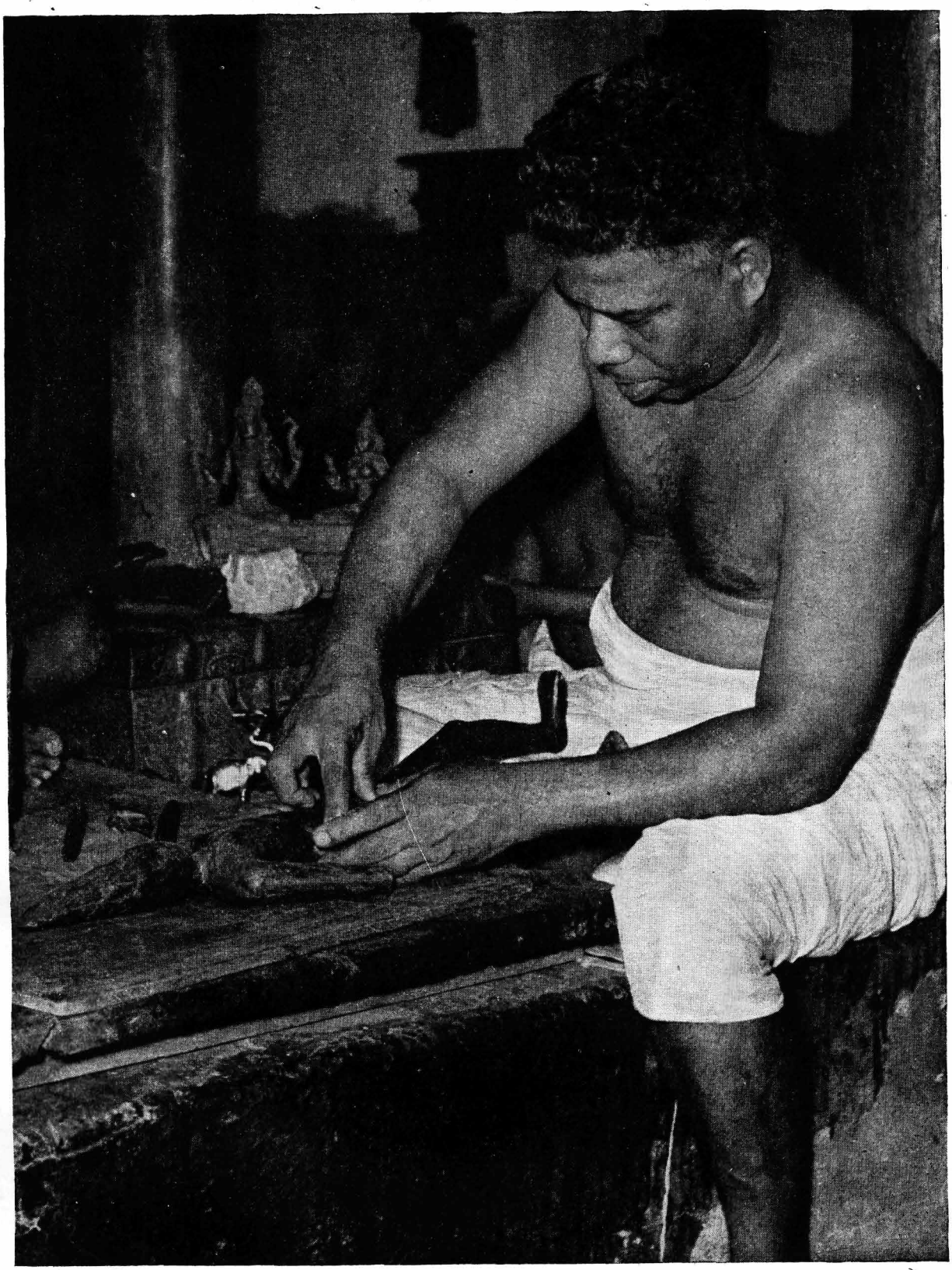
2. The work of making an image in bronze can be divided into four different stages which are as follows :-

1 Modelling the image in wax.
2 Preparing a clay mould out of the wax model.
3 Making a metal cast from the clay mould.
4 Finishing and polishing.

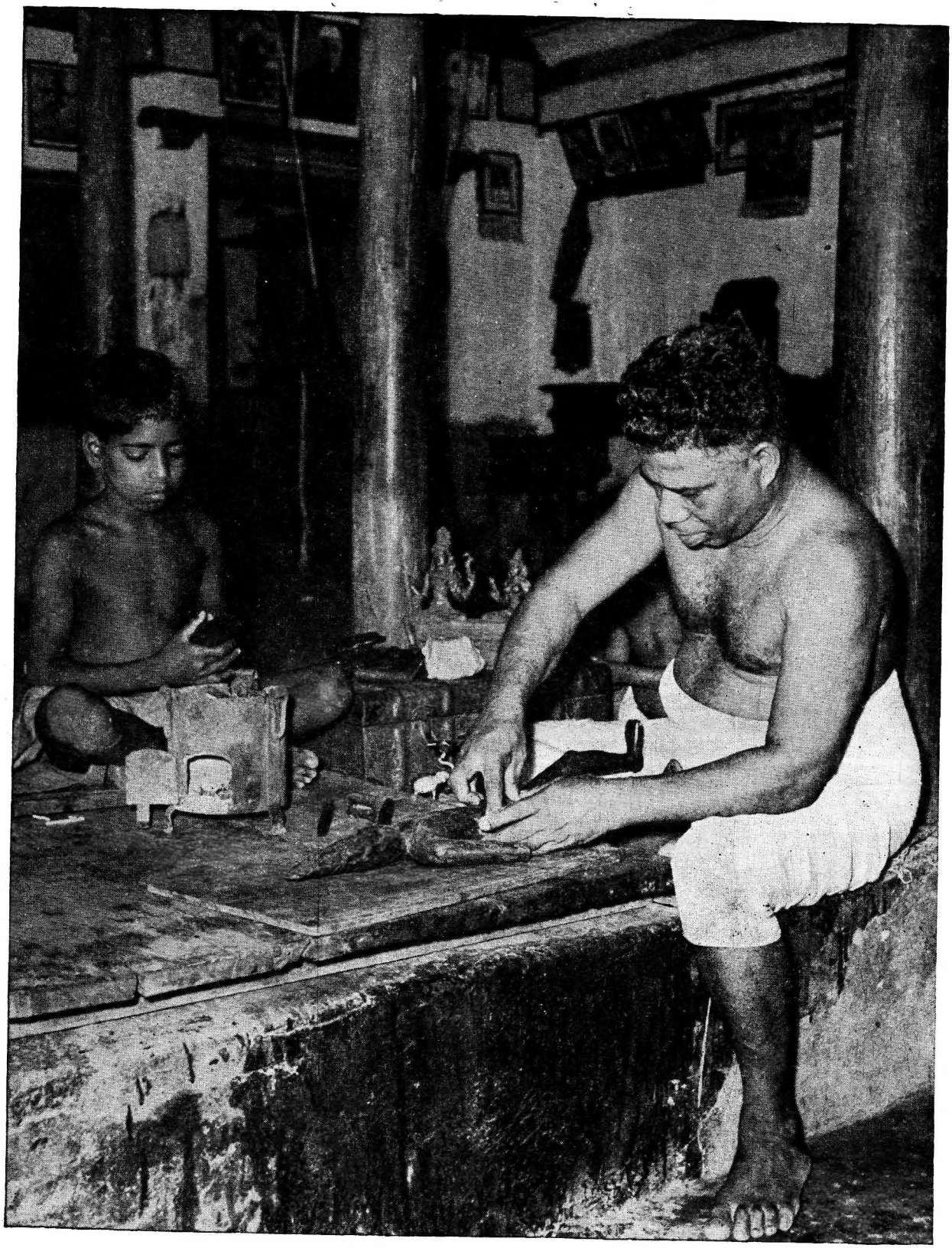
Every deity has a "dhyana sloka" in Sanskrit laying down for the guidance of the Sthapathi. firstly the spiritual meaning and secondly the physical attributes of the deity and an average Sthapathi will know some dhyana slokas by heart. They will represent the moortis which he normally makes or which he knows. 114 specifications have been laid down. He also knows from his general experience the proportions of the lengths of the different parts of the body to the total height. He then makes the image using his imagination and according to the traditional practice followed by his family. He does not know any Silpasastra. Curiously enough, in the course of our survey, we have



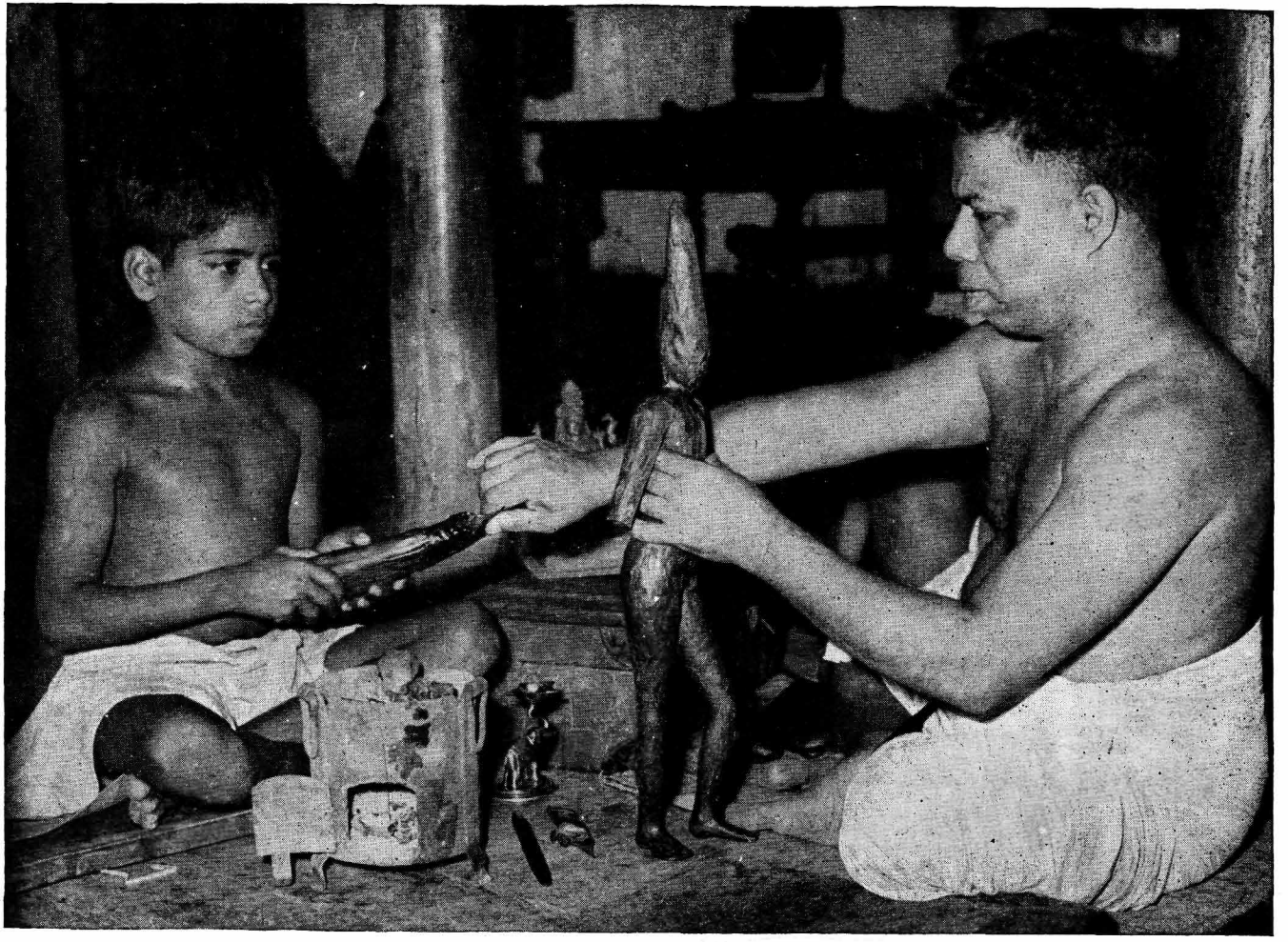
A STHAPATHI AT WORK PREPARING THE WAX MOULD



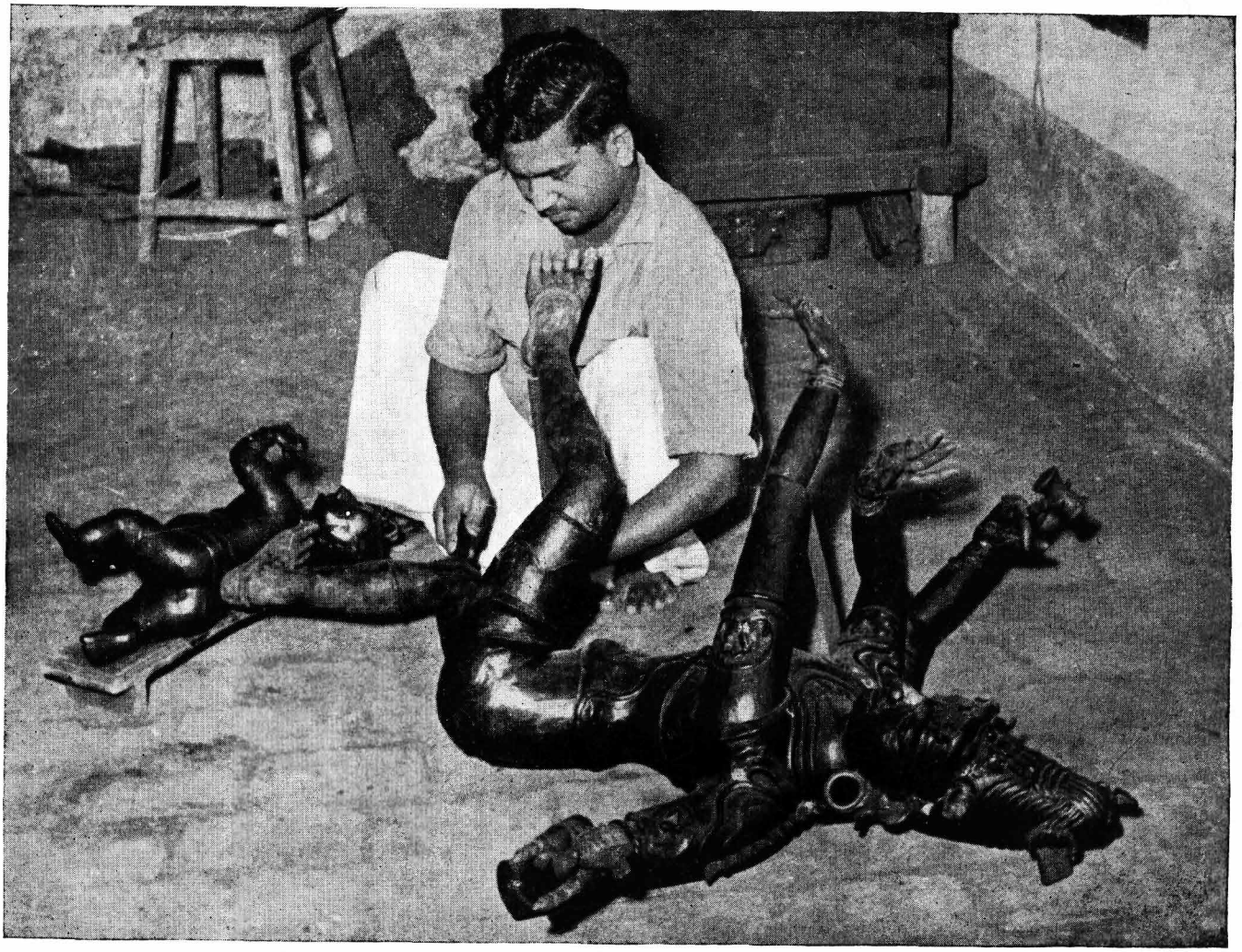
The first stage of the work viz., preparation of the wax model in progress. The Sthapathi first makes out a rough outline of the different parts of the model in wax and then works out the details. He knows from his experience, the proportions of the lengths of the different parts of the body to the total height.



The Sthapathi has to make the wax flexible by frequently exposing it to the heat of the glowing cinders, kept ready by his side.



A closer view of the operation. Note the young apprentice assisting the Sthapathi.



Giving final touches to the wax model.

come across only two Sthapathis who have claimed any knowledge of the Silpasastra and who could produce a copy of Silpasastra. It was a manuscript copy of Kashyapam, with some Chapters missing. Even those who possess, do not understand the different manas or measurements indicated therein. Not a single Sthapathi knows anything about the uses of lambamana or plumb line measurements in the actual making of their images. They have not heard of Lambaphalaka described in the Silpasastras as the board used for determining the plumbline measurements.

Absence of Religious Practices

3. No longer does the making of an image seem to be associated in the mind of the Sthapathi with religious feeling or fervour. We had a detailed discussion with the Sthapathi on this point. As some others have recorded that the preparation of icon is a process involving religious faith, they have told us that they observed religious practices only to the extent in which the persons who have placed the order was interested in religion. Now-a-days when these icons are produced for commercial purposes, they do not have the time or facility to observe any religious rites in connection with the casting of the icons. No sankalpa is undertaken, none of the sixteen similarities required for the making of an image by the agamas ascertained, no auspicious day or hour fixed for starting the image and no formal dhyana or japa is made by the Sthapathi who makes the images. Many do not know of the existence of such formalities. The few who know do not care to observe even when they make images specifically intended for worship unless the party so desires. Many were clearly baffled when asked how they would proceed to make a complicated image like Kankala or Gajasamhara should an order be received for them. The answer was that either it should be given to an elder Sthapathi or it should be accompanied by pictures or photographs. By practice, the Sthapathi knows the proportions of the various parts of the body to the total height. The dhyana slokas prescribed, the ornaments, weapons, the posture and attitude of the arms and legs. With the aid of this and using his imagination, he proceeds to make the model of the moorty in wax which is the first stage in the craft sequence.

Making of wax slabs or rods

4. The materials required for the making of the wax model are discussed below :

(1) *Wax*: The wax generally used is beeswax, called "Thenmezhugu" in Tamil. This can be purchased in the local market at Kumbakonam at Rs 9/-per visss or five seers. Pure wax cannot be used for modelling as it is semi-transparent and too flexible. Kunkiliyan is added to the bees-wax which slightly hardens the wax. It makes it easier to do the modelling. A mixture of Kunkiliyan and beeswax nearly in the ratio of 1 : 1 is melted in an earthen basin with a little ground-nut oil. The molten alloy is filtered through sieve into a basin of cold water. This removes the floating impurities in the molten wax. The wax solidifies in the cold water. It is then transferred to a basin of lukewarm water, when the wax becomes slightly flexible. In this stage, it is rolled up into slabs and rods which can be later handled easily. This mixture is known as "Mezhugu" (மெழுகு)

Preparation of wax models

(2) *Spatulas*: In the icon-caster's parlance, they are known as Mezhugu kuchi (மெழுகு குச்சி) since they are used in the making of the wax models. They are generally made of sandalwood and vary in sizes determined by the requirements of the man who handles them. The spatulas have a broad middle section and tapering ends. They are also made of steel in which case they have a cloth covering. With these, the Sthapathi proceeds to work out the wax model. The torso and the head are modelled separately and united later. He uses what is known as "Odi-olai" which is the stretch of thin palm-leaf corresponding in length to the total length of the moorty, and marked into 120 equal parts or angulas. The Sthapathi first makes out the rough outline in wax of the different parts of the body of icon by hand. He then works out the details laboriously with the help of the spatulas as much as an artist works out his model in clay. While the artist has the advantage of having his clay ever flexible, the Sthapathi has to make his wax flexible frequently by exposing it to glowing cinders kept ready by his side. The modelling can never be complete. The details like ornaments are modelled only in outline. The features of the face, limb and the torso are also not modelled in their completeness. Where there should be four fingers in the hand, the Sthapathi only makes a lump of wax which after casting will become a lump of metal from out of which the Sthapathi chisels out the fingers. Where there should be a hara, or the chennairra, the Sthapathi makes in wax a raised rim and works out with hammer and chisel the ornament after the cast. The bigger the image, the more detailed and complete is the modelling.

The Sthapathi, however, aims at a type of completeness in his wax modelling. The basic attitudes of the limbs, the torso and the face should be achieved in the

wax model itself. It can never be changed when it is transferred into a metal cast. The quality of the final product depends upon the experience and the extent to which he has the capacity to visualise the inner qualties of the image. The greater the care and concentration he employs at this stage the lesser the time and labour that will be spent later to re-model his metal image with hammer and chisel.

Making of Clay-Moulds

5. (1) When the wax model or the replica, as it is called in the casting parlance, is completed, he fixes the image on a wax base ; and attaches to the base a wax rod ending in a funnel shaped flange. This is the runner. It serves as an egress for the molten wax when it is drained out and an ingress for pouring the molten metal. The Sthapathi also attaches wax rods connecting different portions of the image to facilitate the easy running of the metal into various parts simultaneously. Such rods also provide additional support to the image in their metal shape when the Sthapathi works with the hammer and chisel on the image. This completes the preparation of the model. The next step is the making of a clay mould out of the wax model. This operation is known as "Mankattal" மண் கட்டல். The clay or the mould is prepared in different ways for different castings. For the first three recastings fine loam is ground into a paste with charred husk and cowdung. The Sthapathi covers the entire surface of the wax model with this paste., which for the first coating, is applied in a semi solution form. The mud is then allowed to dry. A second coating is applied over it and the process repeated thrice or four times till a fine even layer of loam is spread out over the entire surface of the wax replica. The Sthapathi sees to it that no part of the wax replica escapes its coating of clay and that air-bubbles are moved. This is the clay surface that preserves the details of the wax model when the model itself is run-out and this is the surface which comes into contact with the molten metal when the latter is poured. It must, therefore, at once be of a fine texture to preserve the intricate details of the modelling and strong enough to withstand the hot liquid metal when it is poured into it. This is achieved by applying the loam in the form of a thick solution at the first coating and the addition of cowdung and husk to the clay for the second coating.

Encasing the Wax Model in Clay

(2) The model is then encased in layers of coarser clay. Three successive layers of such clay are applied to the replica, each successive layer becoming coarser and bulkier than the one before. After the application of each layer of sand mixed clay, it is allowed to dry completely before the next coating is applied. And after the second coating, fine steel is wound round the entire piece before the third coating of mud is applied. If the piece is of a big size the steel rods are also embedded in the mould before a third coating of mud is applied. After such coating, care is taken to preserve intact the wax-orifice that serves both as a runner and a vent.

Draining off of the Wax

6. (1) After the mould is sufficiently dry and strong to withstand the subsequent operations, the Sthapathi proceeds to drain off the wax of the mould. He heats the mould over a drafted ground furnace called Ulai (உலை) when the wax in the mould melts and runs out. The Sthapathi carefully collects the wax that is thus drained out and weighs them to ascertain the quantity of metal required for the operation. The metal generally is ten times the weight of wax. Having thus carefully prepared the mould, called significantly in Tamil as the Karuvu (கருவு), the Sthapathi proceeds to the next step in the craft-sequence, namely, the pour. The materials required for the pour are as follows :

Composition of the pour

7. (a) *The metal*: Generally, the metal used is an alloy of copper, brass and lead. Copper by itself would not give a good colour ; neither would it melt easily and run smoothly. The addition of brass to copper gives a better colour and lowers its melting point. But an alloy of brass and copper would not run easily and it would be difficult to work on it later with hammer and chisels. Therefore a little lead is added to the alloy. Lead smoothens the pour and imparts a flexibility called "Nyppu" (நைப்பு) in Tamil to the metallic surface, rendering it easy to work on with chisel and hammer. Normally, the alloy contains copper, brass and lead in the ratio of 20 : 5 : 1. The Sthapathis buy these metals from the retailers of old vessels at Kumbakonam. The merchants collect copper, brass and lead vessels from the households and sell them as scraps to the Sthapathis. The price prevailing at the time of the survey was Rs. 50/- for 40 seers of copper, Rs. 46/- per 40 seers of brass and Rs. 20/- per forty seers of lead (40 seers = 8 Viss = 1 local maund or about 25 lbs.)

(b) *The ceramic crucibles*: (Kuvai– குவை). These are used for melting the metals. They come generally from Rajahmundry. A crucible that can melt about 80 seers of metal costs about Rs. 9 and can generally be used for 6 pours after which it has to be discarded.



After the preparation of the wax model or the replica, he proceeds to prepare the clay mould. The entire surface of the wax model is coated with a nice paste of clay and successive coatings of mud and clay are applied till the entire wax model is firmly enclosed within the clay-mould. This clay mould preserves the broad details of the wax model. The runner or the funnel at the bottom of the clay mould is left open to allow molten wax to drain out and for pouring in the molten metal, while casting the metal image. After the clay mould is dried up, it is heated in the oven.

Picture shows the clay moulds in the oven ready for heating.



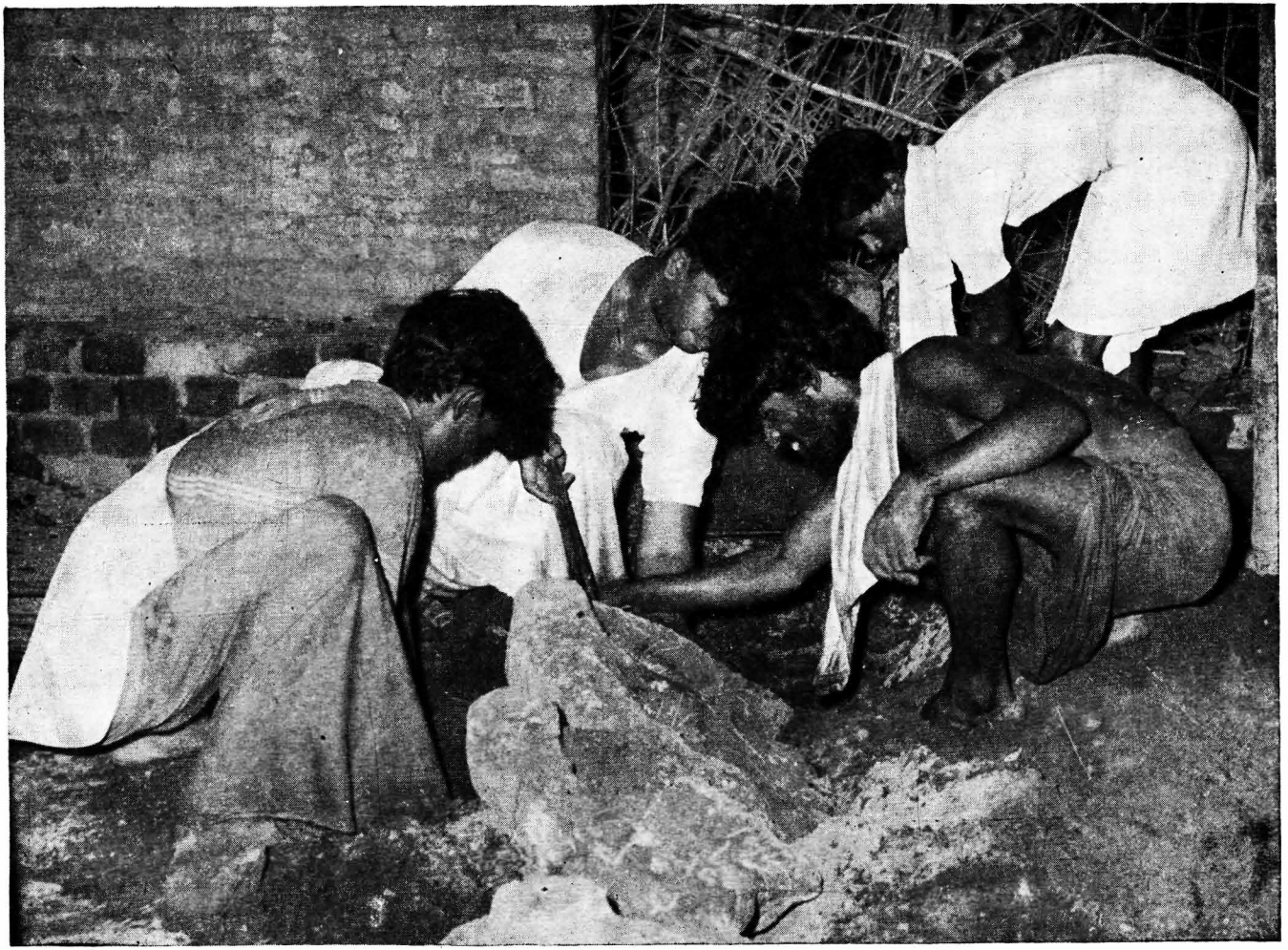
The ceramic crucibles which are used for melting the metals.



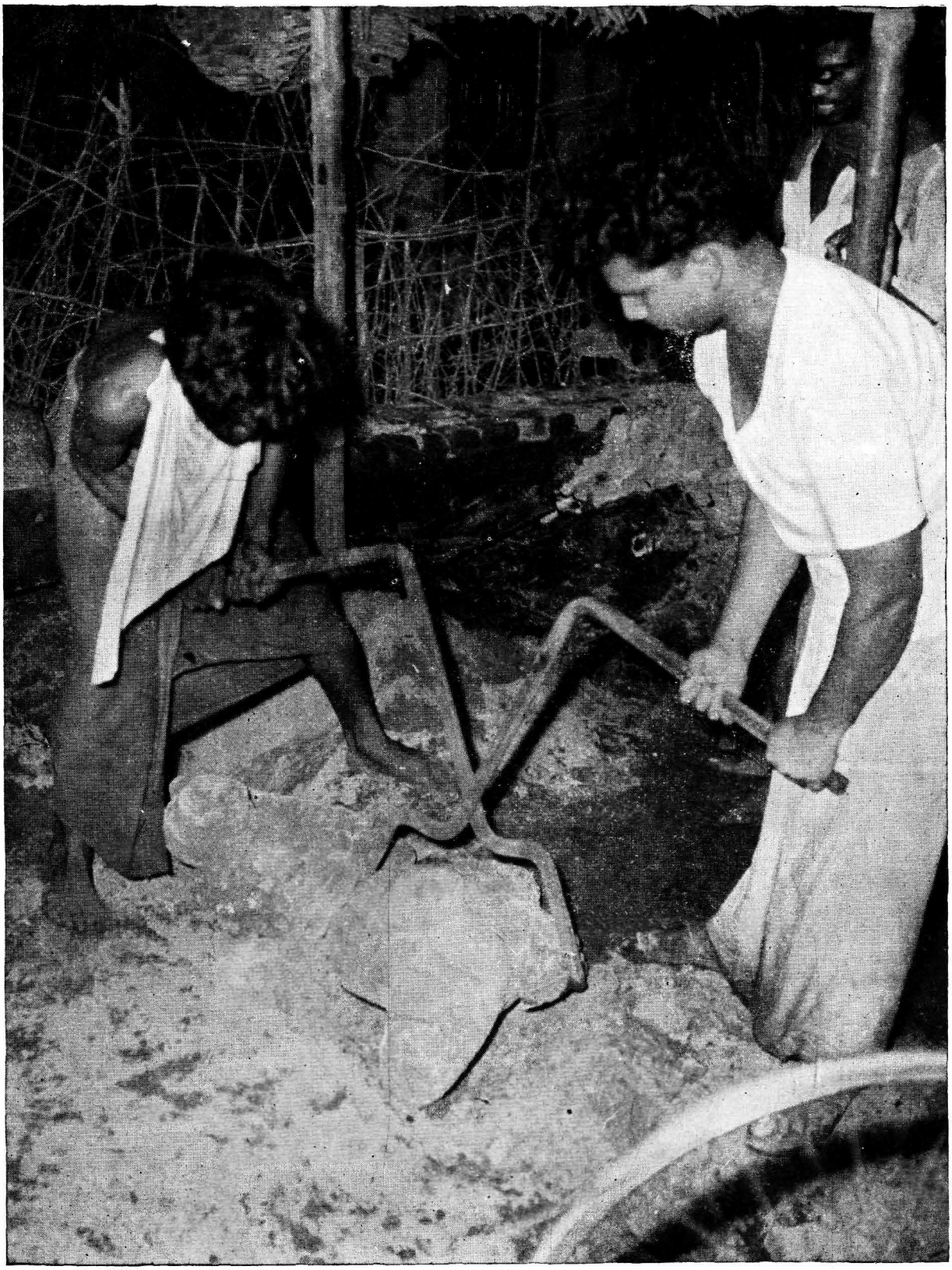
The metal is being melted in the crucibles. Fresh scraps of metal are added to the molten alloy in the crucibles and heated till the entire alloy melts into a thick red-hot liquid.



The crucibles are then lifted out of the furnace carefully with the help of the long handled prongs.



The clay mould is now broken and the metal image inside is taken out.



The mould with the molten metal is allowed to cool gradually till the metal cast has frozen and it is taken out with special tools meant for the purpose.



Another view of the operation. The molten metal is poured in such a thin stream that only half the orifice is covered by the pour.



While the metal is being melted, the clay mould containing the wax model is heated and the molten wax is drained out through the funnel. The hallo clay mould is once again heated and kept in an unshakable position, for the molten metal to be poured into the mould. Care is taken to see that the molten metal does not spill out of the crucible. The picture shows the operation in progress.

(c) *The furnace*: or உலை: The furnace is generally a rectangular pit, 5 feet x 1½ feet and 2 feet deep, with brick linings and brick flooring. A blower is connected to it at one end. Each pattarai will have generally two or three such furnaces of different sizes.

(d) *The fuel*: Coke is used for melting the metal. This is obtained in the local market at the rate of Rs. 3/- per maund. Dung cakes and firewood are used for heating the mould.

(e) *Prongs*—கிருக்கி: These are used for lifting the crucibles out of the furnace and for pouring the metal into the mould. They have long handles and are three to four feet long.

Heating of the mould

8. The mould or Karuvu கருவு is first heated. A rough kiln is built up round the mould and the fire kept up by burning the dung cakes and firewood till the whole mould becomes a cherry red. This is to harden the mould and to expel any trace of moisture. The red hot mould is then buried in earth up to the mouth of the orifice, so that it will remain in a firm, upright position when the hot liquid metal is poured into it. It will also prevent the sudden and premature cooling of the molten metal after it has filled the replica's empty chamber and thus cause the inner wall of the outer mould bearing the all-important negative impression of the replica to contract and explode.

Preparation of the metal

9. Simultaneously with the above, the metal is prepared. Scraps of brass, copper and lead are put together in ceramic crucibles and melted to white heat in the coke furnace. The crucibles with the scraps of metal are kept on the floor of the furnace and covered with coke. The blower is then operated sending blasts of air into the furnace and keeping the coke in flames. Periodically, fresh scraps of metals are added to the molten alloy in the crucibles and the operation repeated till the required quantity of metal is melted.

Pouring the metal

10. The crucibles are then lifted out of the furnace with the help of the long-handled prongs and the hot metal poured into the red hot mould. A circular ring of rags called "Mugatuni" (முகத்துணி) is placed at the moment of the pour around the orifice to prevent the metal from spilling and as a support for the ceramic crucible. Small rags of gunny are thrown into the crucible at the last moment and while one man holds it back in the crucible with a long stick another tilts the crucible and pours the metal in a thin stream into the mould. The metal is poured in such a thin stream that only half the orifice is covered by the pour. Through the other half, the air in the hollow escapes thus making it unnecessary for the Sthapathi to provide a separate system of vents in the mould. The mould with the metal is allowed to cool gradually. Then the binding wire is cut, the rods if any removed and the mould broken open, when the metal image is revealed. The Sthapathi then proceeds to work on the metal cast. The materials required for this stage of work are as follows :—

Materials used for finishing

11. (1) *Hammers*: The Sthapathi uses a number of them depending on the type of work involved. For delicate engraving work, he uses the lighter hammers; and for hard work such as cutting the connecting rods and removing the casting blemishes, he uses the heavier hammers. All the hammers have flat working ends.

(2) *Chisels*: These are called Porai (போறை) in Tamil. The Sthapathi has many of them, of varying sizes. They are classifiable into some main groups.

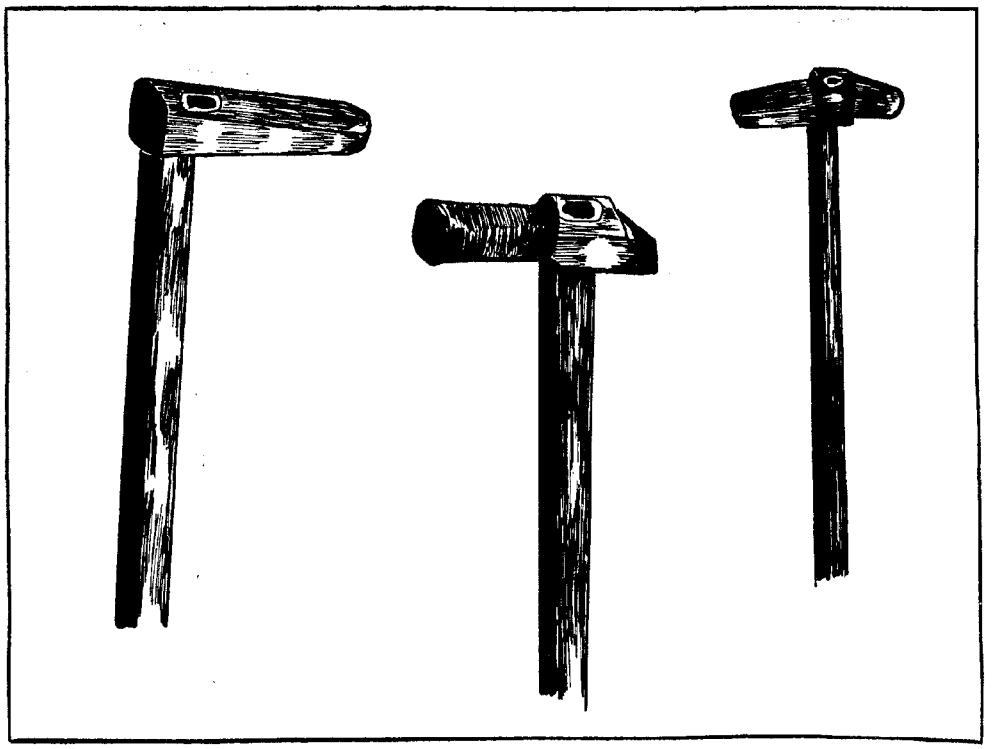
(a) *The Vettirimbus* (வெட்டிரும்பு) are ordinary chisels, of different thickness and breadth at the working ends. They are used for cutting and chipping the metal off the surface.

(b) *The Keeruthanams* (கீறுதனம்) are chisels with sharp and lozenge shaped working ends. They are employed for cutting groves, deepening the furrow etc., They are also to be found in various sizes to suit different requirements.

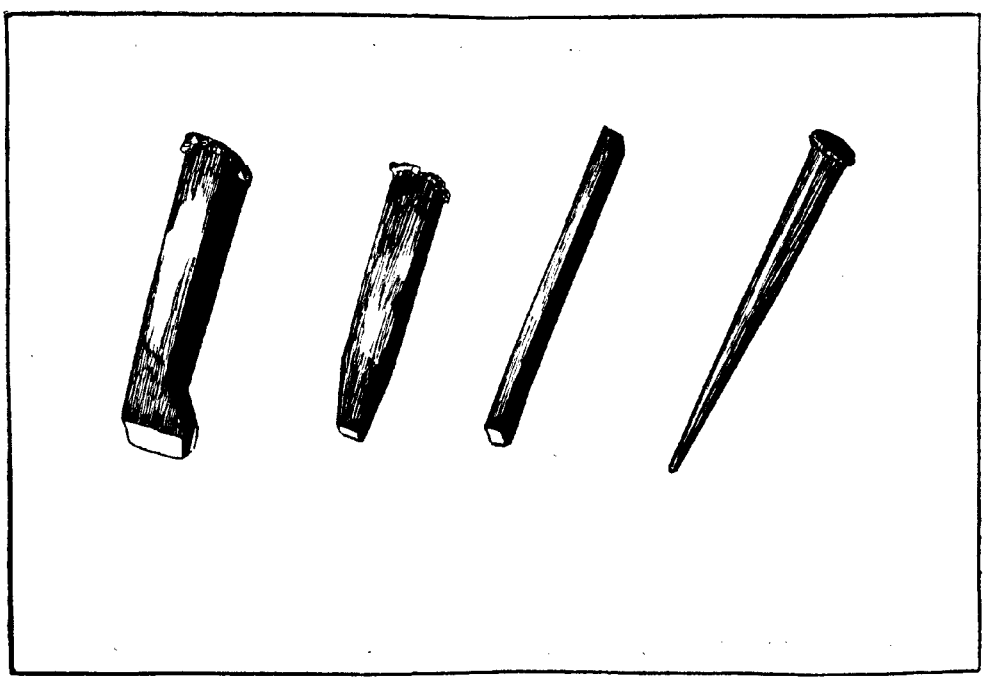
(c) *The matla vethirimbu*: They are like Vettirimbus with sharp edges but the working end is circularly shaped by rounding off the two corners. They are frequently used in engraving work.

(d) *The miridanam* (மிரிதனம்): These have flat working ends. Their purpose is to smooth out the uneven surface wherever such surfaces are found, without cutting the metal. The porais are made of steel. The Sthapathi generally buys them from the blacksmith or employs the blacksmith to make them and finishes the working ends himself according to his needs.

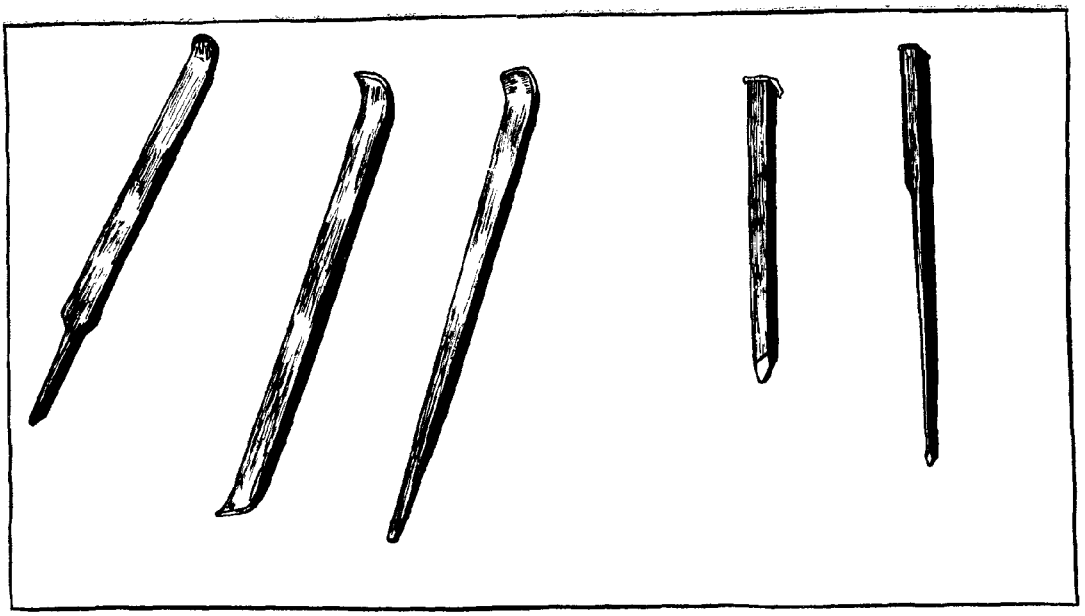
(3) *The Files*: Various files are to be found in the Sthapathi's pattarai, long, short, triangular and flat. They are called the மட்டசுத்தி or அரம்.



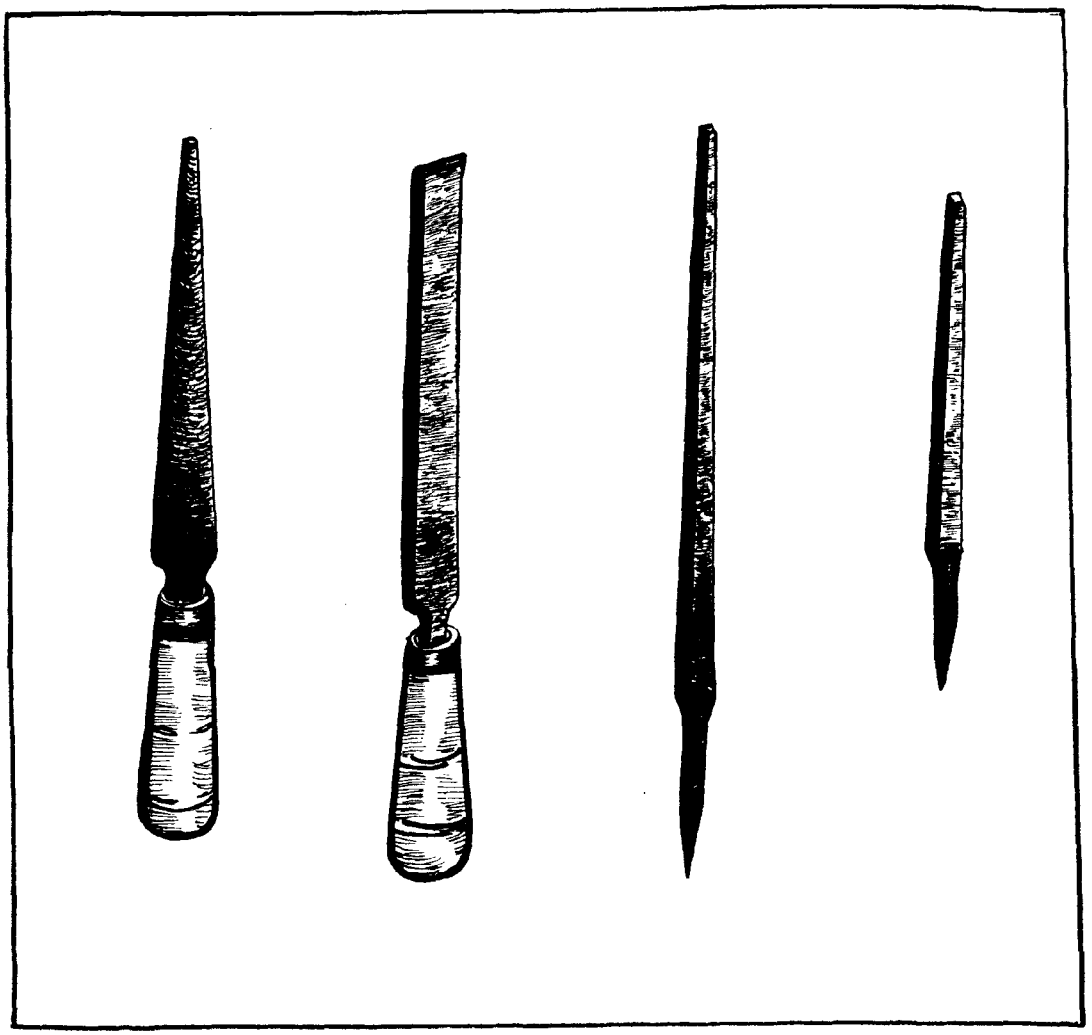
The hammers used in Icon-making



The chisels used in Icon-making



The chisels used in Icon-making



The files used in Icon-making

(4) *The Seevuli* : The Seevuli is a cutting tool made of a long piece of steel blade mounted on a wooden handle.

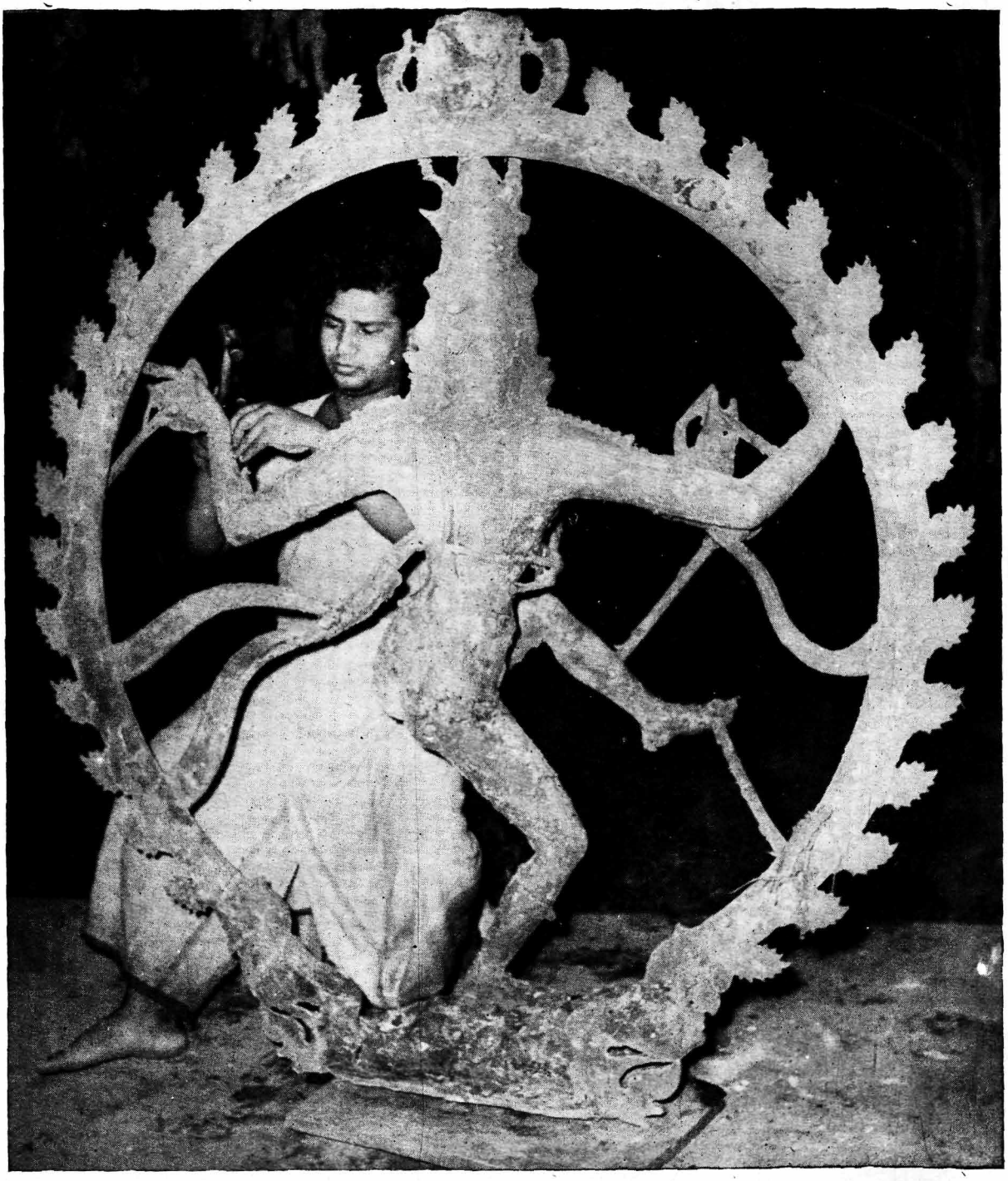
Finishing and Polishing

12. With these tools and instruments, the craftsman proceeds to display his mastery of metal craft on the rough metal cast; with his vettirumbu he removes the casting blemishes; he smoothens the surface whenver it is to be done with the miridanam and removes bulges by filing; with the small porais and keerudanams, the craftsman works out the details by engravement. The details of the limbs, the torso and the face, of the ornaments and dresses will come to light only after the delicate touch of the craftsman's skilled hands. He has necessarily to be an expert jewellery engraver to achieve perfection.

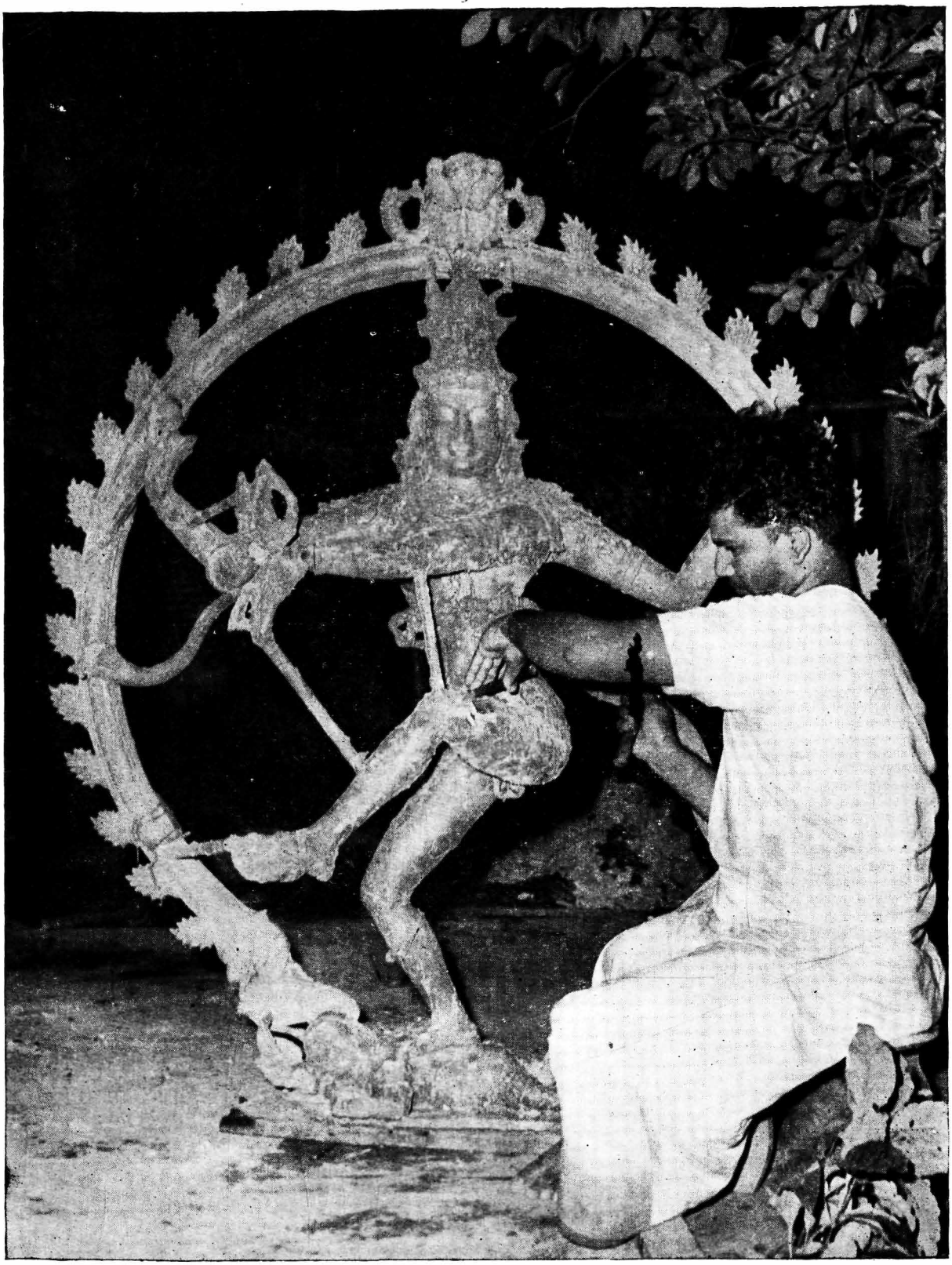
The process of polishing the icon is laboriously achieved by rubbing fine grade emery paper over the entire surface and then rendering the images smooth by polishing tools. The image is then cleansed in a solution of tamarind in water, polished with brass polish and finally washed in a solution of soapnut and brushed briskly by a wire brush. This operation gives a high polish to the metal surface.



Picture shows the metal image taken out of the clay mould. This only contains a rough outline of the image and this has to be refined by an elaborate and laborious process of chiselling and cutting.



The chiselling in progress.



The Sthapathi makes use of a variety of chisels and punches in the process of refining and it is a laborious process requiring a high degree of skill.



The surface of the image is smoothened and crudeness is refined by filing.



This picture shows the Icons of Shiva and Parvathi in another posture. These are only half-finished Icons and they are yet to be refined with chiselling and polished.



The Icons of Shiva and Parvathi after refinement and polishing.



The finished product i.e. Nataraja in the cosmic dance-pose.



Another set of fine artistic Icons produced in Swamimalai. The Icons depict Shiva and Parvathi in a particular posture.

CHAPTER III

PRODUCTION OF STONE ICONS

Great care has to be devoted to the selection of the right type of stone for the image. The stone should not contain any blemish which an ordinary Sthapathi considers is likely to bring him ill-luck or to the person for whom it is being made. We quote the following instructions from a Silpasastra on the subject:

Instructions for selection of stone according to Silpasastra

"The stone (for the image) should be cut in an auspicious month, during auspicious thithi and lagna and during the ascendancy of a benefic star, on a good day. The Acharya should accompany the silpi to cut the stone. While starting, on the way and while collecting the stone, he should carefully observe the omens on the land and in the sky.

Crows traversing from left to right, eagles crossing from right to left, seeing a virgin or a cow, encounter with a flock of cows, pot filled with curd, flowers in blossom, garlands of flowers, women with children, rice, meat, devotees of Siva, flaming cinders, pitcher filled with water, robed elephant and beautiful prostitute-these are omens that portend good results.

The falling of burning wood, fire in any direction, stormy winds—these are evil omens in the sky.

Men and women with watered hair, sparsely clad or ill-clad people, sadhus in saffron robes, empty earthen vessels or vessels filled with oil, people with deformed organs and limbs, people with unnatural growths, barren women, widows and glutters—these are signs on earth which portend evil results.

Only stones from mountains, near the sea or a holy water or a holy place, near the trees in the forest, near temples, or rivers or ponds, are fit for making the image of a God. Only these the silpi should collect; others he should not for they bring ruin.

White, red, yellow and black are four types in stones. White stone is of seven types resembling the shades of cow's milk, conch-shell, mullai flower, moon, pearl, crystal and jasmine flower.

Seven types there are in red stones like the colours of Sambanathen flower, Poovarasam flower, butterfly, athilingam, rabbits blood, Anar flower and Bhandhooka flower.

Similarly, like the shades of gold, Sarakkannai flower, Chempak flower, Turmeric, yellow Kurinchi flower, Lime fruit and Aridharam, yellow stones are of seven types.

Black stones, can be in nine shades resembling the Mahishasham (cat eye) the Anjana stone, the Neelotpalam, the Black been, the peacock's neck, the Mahee badram, the Rajavarthem (a slightly blackish honey coloured stone), the black gram and the Kurumpayaru.

The Acharya and the silpi should proceed to the place, clad in white robes, with sandal paste smeared on them, wearing garlands of white flowers and carrying the necessary implements. With a peaceful mind they should go around the stone (circumambulate) and proceed to determine its nature.

Stones that are always exposed to the rain and the sun, stones that give out a burnt-out odour, stones that carry deposit of salt water, stones that lie in unclean places or pathways, stones that have been used for any other purpose, stones that are mutilated or have an ugly and frightful appearance and stones that carry dots or lines or other blemishes are unfit for making the images of gods and goddesses; they are therefore to be rejected.

The lines in the stones are of three types. Some are like a rope; some like the rays of the sun and some like the showers of rain.

Bhindhus (spots or dots) are of three types. Some are like ripe grape fruits; some like Kacha (unripe) grape fruits; and some others round.

Blemishes in stones may be of the colour of iron, or of black bee or of the feathers of the peacock.

Stones that exhibit lines like the leaves of wild date, or like the Amgam tree or like the tender leaf of a

bamboo tree or like that of a spider's legs and coloured stones revealing white lines confer all kinds of wealth on the karta.

Black lines in the black stones and white lines in the white stones bring ruin to the maker of images in such stones. Therefore, stones should be collected that are without any blemishes.

Black stones or green stones, or stones that have a blend of black and green, are fit to be collected. White stone is worthy of special effort to collect. Stones that are of the colour of wild date leaf or of Arngam wood bring lasting benefits.

Very black stones are said to bring evil results to those who use them. They bring ruin to the cows, grains and wealth.

Stones with blemishes cause diseases and destroy the land and the King.

Stones with spots in them cause the destruction of sons and bring poverty and misery.

Stones are classified into Bala, Yuvathi and Vritha according to their tonal quality. They are classified into male, female and Nabumsaka according to their form and shape.

Stones giving out shrill sounds and of short forms are of Bala type.

Stones that give out sound like the peels of a bell and of long shape and form are of the Yuvathi type.

Disharmonious sounds characterise the Vritha type.

Voluminous sounds and long shapes characterise the male stones.

Stones that give out sound like the rustling of palm leaves and that are long shapes are female stones.

Stones without sheen or sound or hardness are Nabumsaka stones.

Square and octagonal stones are feminine. Rectangular spherical and polygonal stones are masculine. Perfectly round stones are Nabumsakas.

Polygonal stones, balas and vrithas are unfit for making the images of deities; they should therefore be rejected".*

* Silasangraha & Kashyapa Silpasastra.

Centres where stones are obtainable

2. We cannot get stone of proper quality at all places. According to the Sthapathi engaged in the work, the black stones of the required hardness are found in the following places :

Ambur
Ambasamudram
Peraiyur—Aramanjanamalai
Mayilam
Thiruvannamalai
Nagalapuram (Tiruchi District)
Pattimalaikkuppam (Chingleput District)
Palani
Pudukkottai
Myladi.

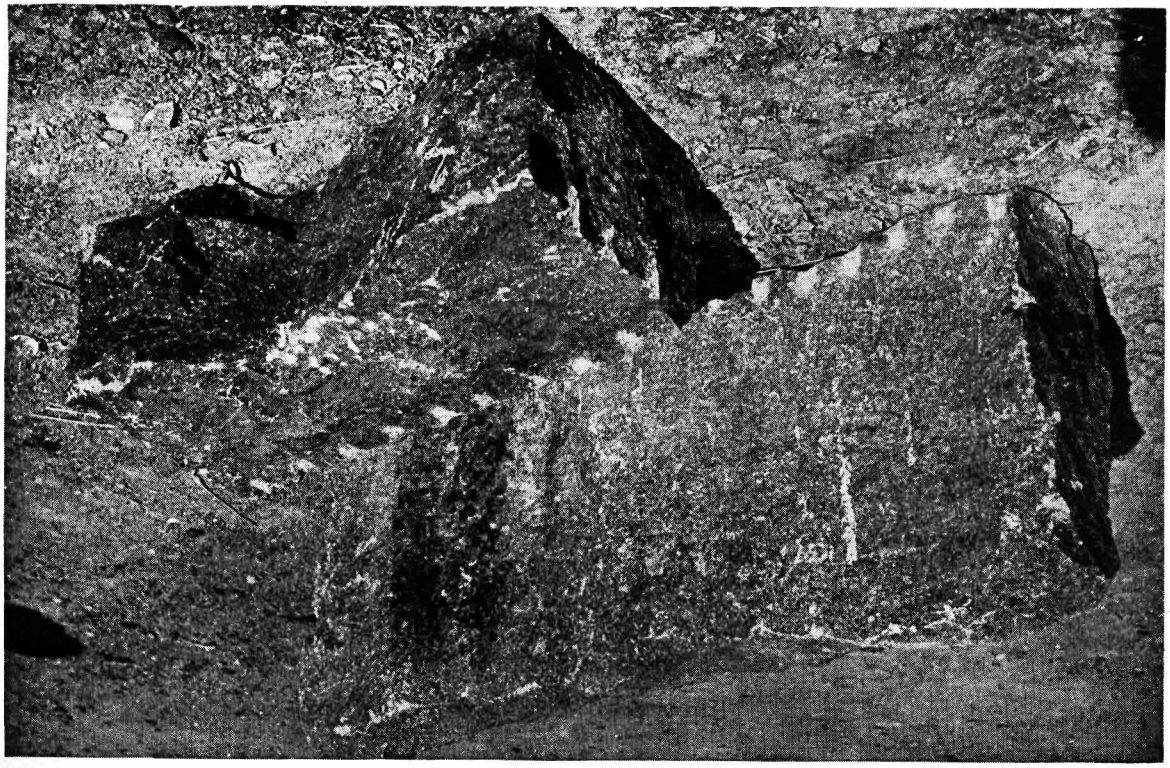
The stones found in Kanyakumari and Ramanathapuram districts have a higher granite content and will retain their sharpness for a long time. But it is much more difficult to make an image from the stones. White stones can be found at Valliyur, Trivandrum and Thirukkoilur. Green stone can be found at Kovilpatti and Senal. The cost of stones will vary from place to place. At Ambur it is Rs. 5/- per cubic foot. At Peraiyur it is Rs. 3/- per cubic foot and at other places, it is Rs. 4 to 8. The Sthapathi cannot choose his stone on the basis of its cost, because, the cost of transporting the stone to the place where the image is required is abnormally excessive and has always been a handicap for Sthapathis in their work.

Qualities of a Silpi

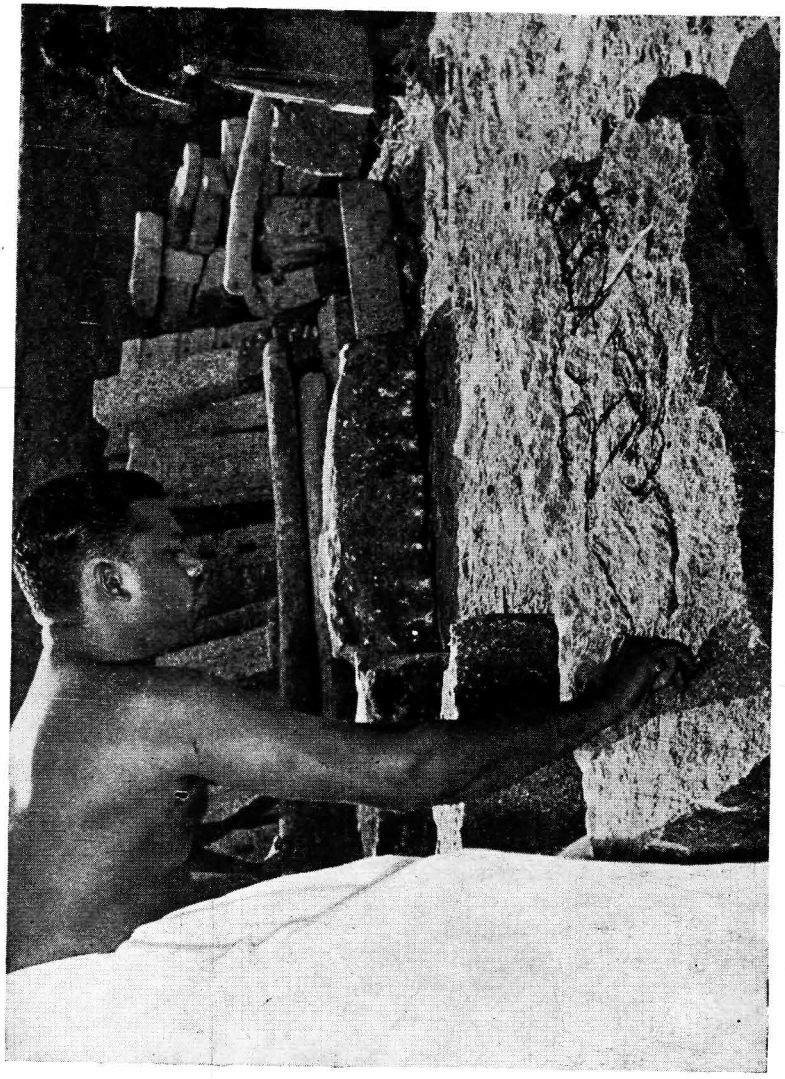
3. Having selected the stone and transported it to the workshop, it is dressed in a rough manner. The dressing is generally done not by the Stapathi but by stone masons. Wages for these piece workers differ from place to place ranging from Rs. 3/- to Rs. 6 per day per worker. The stone is generally dressed to a rectangle of the required height and size. Then the silpi begins his work. He marks out in red Kavi the portions which are to be carved out. Unlike brass Icons, there is no special technique employed in stone carving. The entire work depends on the skill of his fingers and still more on the power of his imagination which can visualise the hidden figure in the mass of stone that stands before him. When the imagination is strong and well-developed, his hand knows what portions of the slab of stone should be eliminated so that a clear form can be carved out. In his work, power of concentration is vital. It is therefore, obvious that this craft can be mastered only by persons with imagination who are prepared to concentrate on their work and use their imagination in that work.



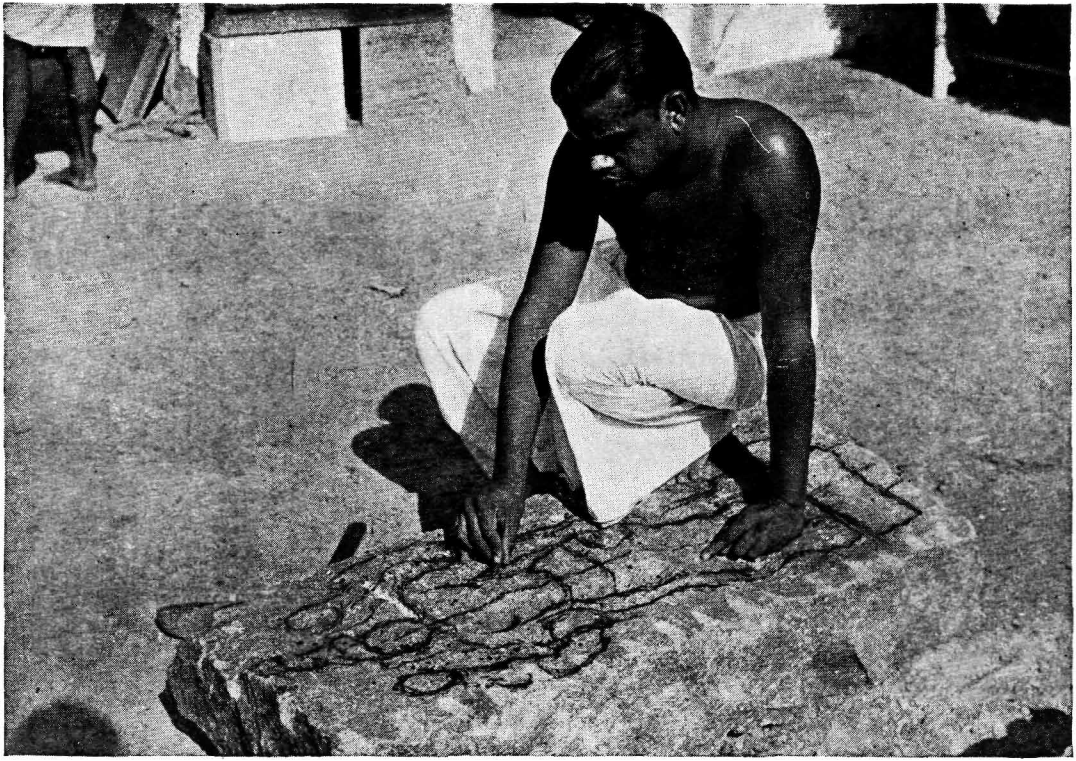
A STHAPATHI GIVING THE FINISHING TOUCHES TO A STONE ICON
OF VIRGIN MARY



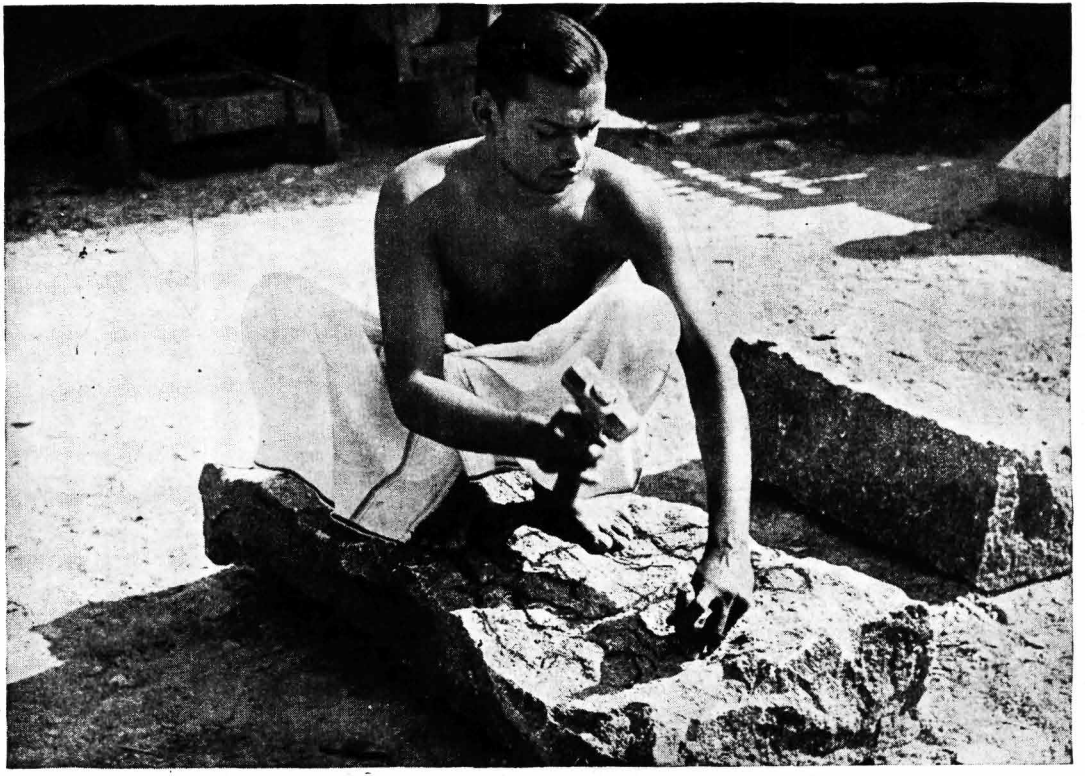
Blocks of granite stones from which the icons are made. Selection of proper stone is an important item of work and it is done by the Sthapathi himself. After selecting the proper stone, a rectangular block of required height and size is cut out of the stone. This cutting of the stone and dressing it in a rectangular block of a required size does not require the skill of a Sthapathi and it is usually done by the stone masons who assist the Sthapathi.



On the rectangular block of stone from which the icon is to be made, the Sthapathi marks out the rough outline of the image with a piece of charcoal or coloured mixture known as "KAVI".



This work requires skill and strong imagination. The Sthapathi should have a clear conception of the image to be made, before he can mark out the outline. Before he sets out to mark the outline, he makes himself thorough with the physical dimensions and other attributes of the image to be made. The rough outline also indicates the superfluous stone to be eliminated. Any slip in this work would hamper the work completely because in making the stone icons, once a portion is over-carved, it cannot be made up.



After drawing the rough outline, the Sthapathi proceeds to get a firm impression of the outline on the stone with chisel and hammer.

Dhyana Slokas

4. There are also dhyana slokas indicating how the murtis are to be formed. They are in Sanskrit laying down the physical attributes and the gunas of the murti. A Sthapathi is expected to meditate with these dhyana slokas before he actually undertakes the carving of the stone. The repetition of the dhyana slokas with an understanding of their spiritual content and significance will, it is presumed, fix the image of the murti well in his mind and his skilled hands will render it in stone. During that period of dhyana, he is advised to observe certain codes of conduct such as abstinence from meat, intoxicants and women. These will remove any internal tension in his mind and and make him visualise the murti more easily.

Physical measurements of murties

5. As important as attributes and gunas of the murti are the physical measurements of the murti. As the dhyana slokas help to fix the image of the murti, in his mind, the 'Manas' or the various measurements of the murti give him practical help in rendering his conception in stone. These measurements are laid down in the Silpasastras. They are of six kinds.

1. Measurements of length.
2. Measurements of width.
3. Measurements of depth.
4. Measurements of Interspaces.
5. Measurements of circumference of girth.
6. Plumbline measurements.

A Sthapathi should be perfectly clear in his mind about the qualities and gunas as well as the physical dimension of the murti from head to toe before he begins his work. When a clear idea of what represents the murti is known, he will also know what portions of stone are superfluous and are to be eliminated. Stone is a medium in which mistakes once committed cannot be rectified. Even a small mutilation would render his work wasteful and useless labour.

Carving of Idols

6. The carving is not done in one stage. It has to be conducted through various stages. As a first step, large chunks of unwanted portions of these stones are eliminated by rough chiselling. In the second stage, the chiselling is aimed at revealing the rough figure of the murti. In the third stage, the superfluities are carefully removed and the image revealed. The fourth and successive stages of chiselling are the equivalents of the metal work called "Nakasu works", aimed at smoothening the surface of the stone and achieving certain delicate ornamental effects. The course of carving is from top to bottom, from head to the feet. The eyes are left to be finished as the last item of the work. This practice is based on the traditional belief that as long as the eye of the image is not opened, the image is only a mass of stone which can be rolled and handled as the Sthapathi wants to. But once the eyes are opened, the image acquires divine qualities and should be treated with respect and reverence. Based on these, the eye is never opened in the workshop of the Sthapathi but only at the place where the image is to be installed before the installation ceremonies. The ceremony by which the eyes are opened is called the "Netramangalya". The Sthapathi is given special rewards on this occasion in addition to the usual rewards he is entitled to for the making of the image.

Tools and Implements

7. The Sthapathi's tools and implements consist of a large number of chisels and hammers. The stone is collected by use of gun powder. Deep holes are made in the rock by driving long, thick rods of iron and these are filled with gun powder and ignited. The stone is then entirely subjected to chisel and hammer work. The chisels and hammers vary in sizes. Rough chiselling to eliminate huge chunks of stone require forceful hammering and the hammers intended for this purpose are heavy and the chisels have large working ends. Smoothening the surface and execution of delicate carving work require on the other hand soft handling and the application of the minimum force. The hammers for this type of work are lighter and chisels are slender and pointed.

The Sthapathis make the tools themselves. The hammers and carborandum stones used for polishing are purchased locally. Chisels without the working ends are made by the local blacksmiths and the Sthapathis finish the ends according to their requirements. As already indicated, chisels and the hammers are the main tools of the silpi. The chisels are of the following names :

1. வெட்டாப்பு
2. தேய்வு
3. அரப்பாசம்
4. பலமுகை

In addition, there is a fifth chisel which may be called "Vettirumbu" which the slipi uses in the preparation of other chisels.

(a) Vettappu வெட்டாப்பு : The Vettappu is a heavy chisel. It is used in cutting huge chunks off a stone

slab. It is not fit for delicate work. It has a blunt working end.

(b) Theivu தெய்வு: These chisels are used in fine chiselling work. They have sharp, pointed working ends.

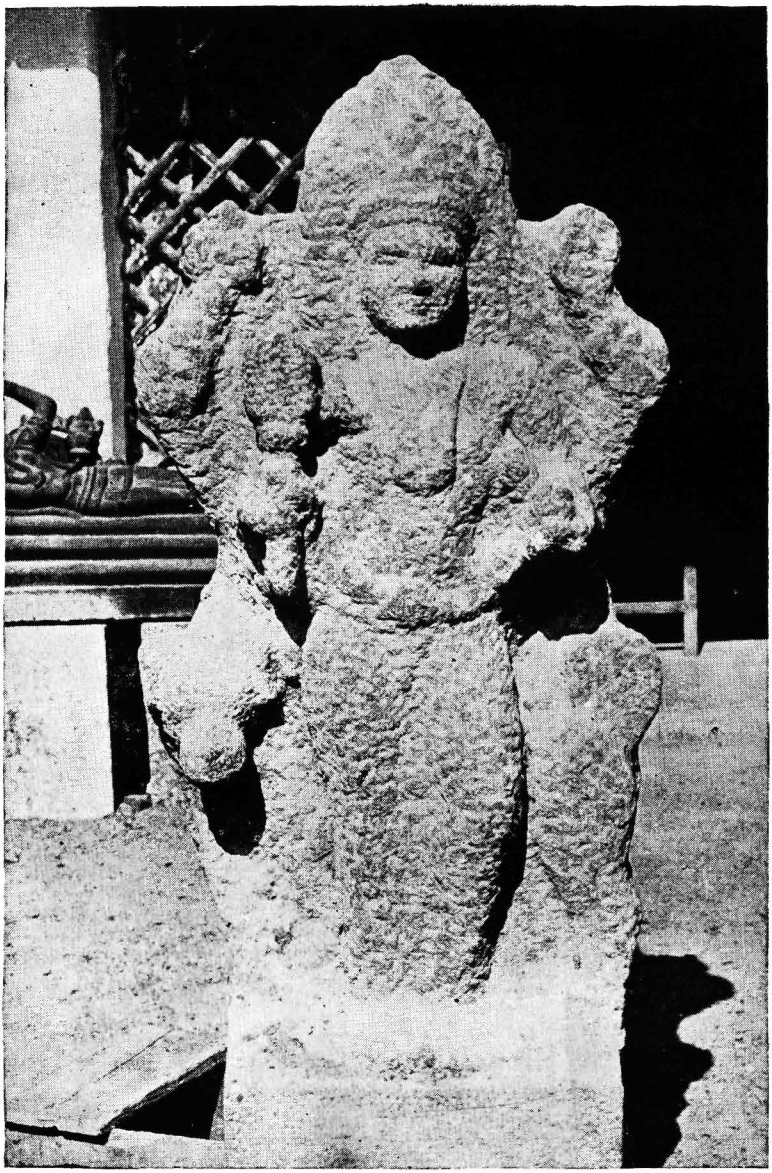
(c) Arappasam அரப்பாசம்: Arappasam is the chisel for finer chiselling over the surfaces that are uneven as in the images and delicate architectural pieces. It has a sharp working end, not pointed but flat.

(d) Palamunai பலமுனை: They are chisels used for finer chiselling work over even surfaces. The Palamunai literally means "many ends". Their appearance justifies the name. Over a flat rectangular or square working surface, several diagonal groves are cut, yielding several sharp edges or points, each one corresponding to the sharp, pointed end of a chisel. Dependig upon the closeness of the grooves across the working surface of the chisel, the palamunais are called by different names. Among them, the Perumunai is the first and contains only a few grooves. This is used in the first line of work. Next is Sirumunai which has a larger number of grooves than the Perumunai. The last is (சன்னம்) Sannem in which there are three types:- Perum Sannem, Sannem and Ravai Sannem (பெரும் சன்னம், சன்னம், ரவைச்சன்னம்). There are no fixed number of grooves associated with each one of these chisels. Ravai Sannem is the tool used in the last line of work yielding a very smooth texture of the stone.

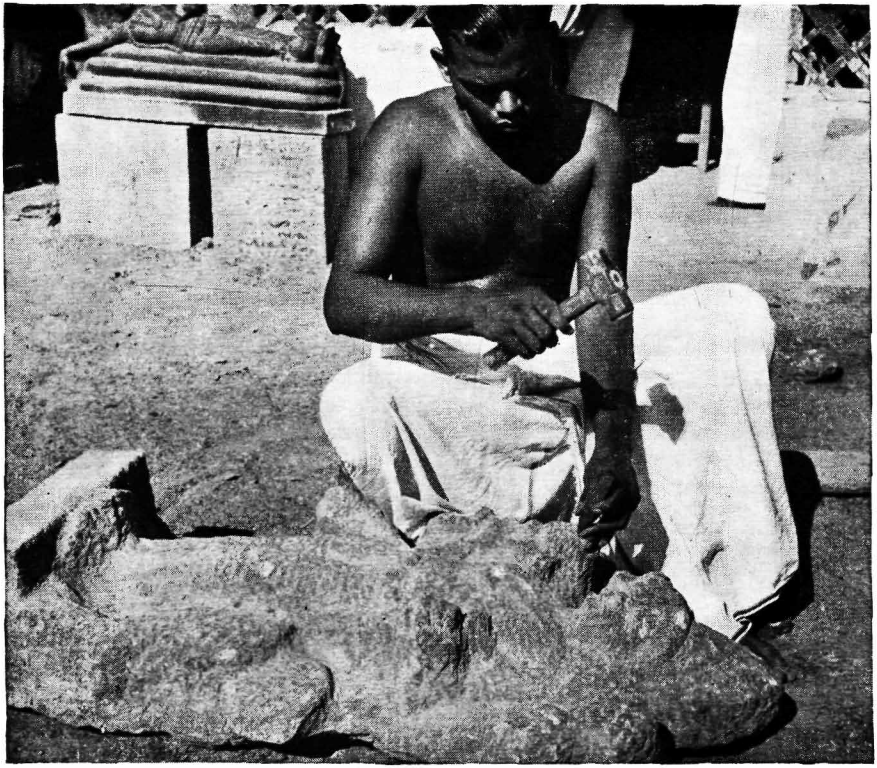
(e) *Vettirumbu*: This is a heavy chisel used in the cutting of grooves in the Palamunai. It has a sharp, flat working surface.

Chiselling and Polishing

8. *Course of chiselling*: As already stated chiselling cannot be done at one stretch. Neither are parts of the body finished one after another. Chiselling has to be done many times all over the image. Every course of chiselling can be treated as a separate item of work. The Silpi working on his image has to execute four lines of work. The first line is executed with Vettappu or the heavy chisel with blunt working end. The aim of this is to eliminate as much unwanted stone as possible and to prepare a crude outline of the image. The second line of work is executed with Theivus or chisels proper. The crude outline is chiselled to work out the clear features of the image. At this stage the stone has to be carefully scraped. The chisels have pointed working ends which can dislodge only a small piece of stone at every beat. The third line of work is executed with Arappasam or Palamunai. When the surface is even, Palamunai is used and when it is uneven as in the contours of image, Arappasam is used. The next item of work is polishing the surface of the stone. Traditionally, this is done by rubbing iron powder over the stone surface. A piece of iron is placed in the fire till it attains cherry red colour. It is then thrown into water when it becomes brittle. The iron is crushed into a thin powder and this powder is rubbed vigorously over the surface of the stone. The powder is prepared in different degrees of thickness. First rough crumbs over the surface, successively nicer powders are rubbed till the stone attains a high polish and glistens.



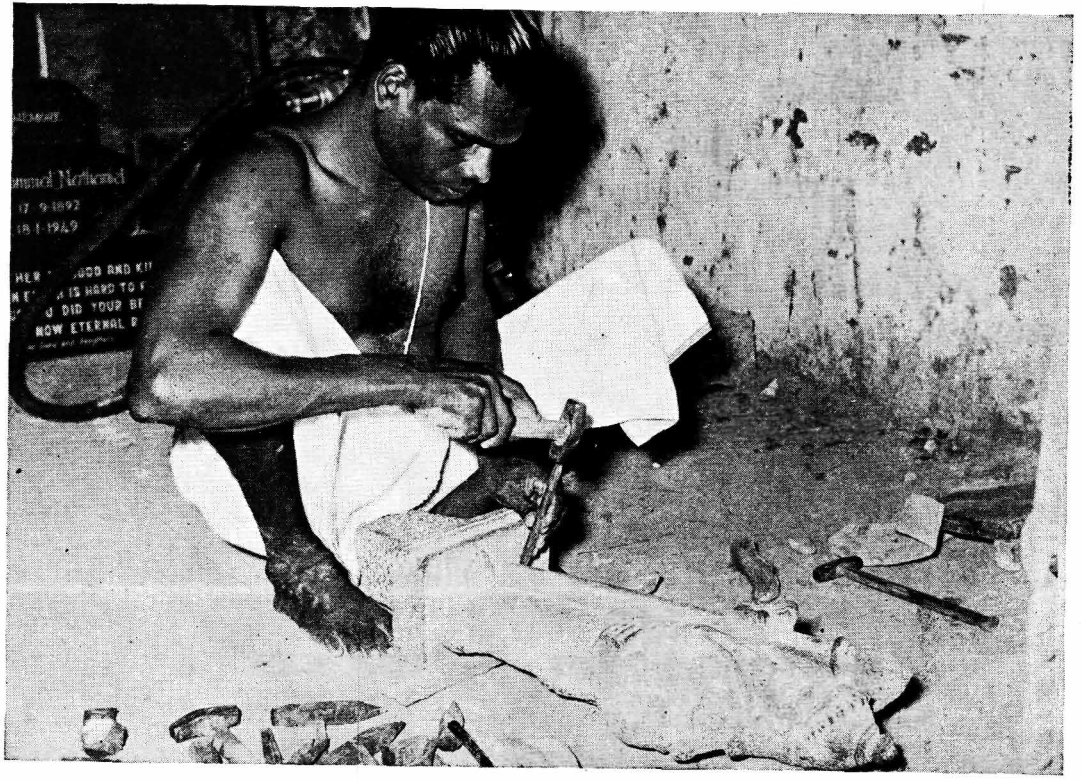
After obtaining this firm impression, he proceeds to eliminate the superfluous stone and carves out a crude figure of the image. The picture shows the crude image after the first stage of carving. This shows only the broad outline of the image.



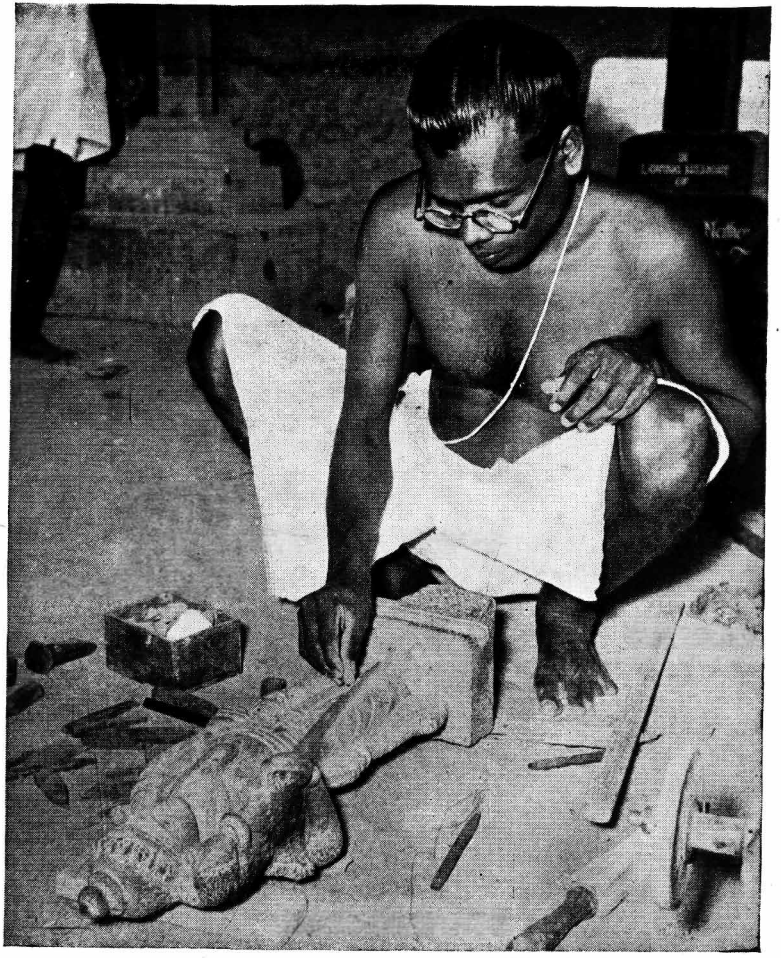
Then the Sthapathi proceeds to refine this crude figure by delicate chiselling. He refines part by part of the image and he generally proceeds from head to foot.



The picture shows two icons, one after the first stage of chiselling namely a crude figure and the other a refined image.



After this refinement, the final touches are given to the image with delicate chiselling with sharp edged chisels. The image is delicately chiselled to obtain a smooth surface.



It is then polished with sand paper and rubbed with oil.



The picture shows some finished stone icons.

CHAPTER IV

PRODUCTION COST

We have collected the following particulars regarding the amount of expenditure incurred for a Nataraja image, about one foot in height. The Sthapathis do not keep any written accounts. These are based on their recollection and as such are approximate:

Specimen I

Small Nataraja Idol

The weight of Nataraja	15½ seers (9½ lbs)
Height	13 inches
The amount of metal alloy taken for the pour	18 seers
The amount of metal that may have been recovered	1½ seers
The amount of wax taken	2½ seers
Wax weighed after it was drained out of the mould	1.8 seers
Cost of the coke 1 maund	Rs. 3.00
Cost of the firewood and dungcakes	Rs. 2.00
Cost of polishing materials	Rs. 0.50
No. of days it took to finish the product	15 days

In the alloy copper, brass and lead were used in the ratio of 10 : 2 : ½. And the wax was prepared by mixing equal amounts of beeswax and Kunkiliyam.

(A) *Gross cost of raw materials*

Cost of metal 18 seers at Rs. 1.27 per seer	Rs. 22.86
Cost of wax 2½ seers at Rs. 1.70 per seer	Rs. 4.25
Cost of coke 1 maund at Rs. 3/- per maund	Rs. 3.00
Firewood and dung cake	Rs. 2.00
Polishing materials	Rs. 0.50
	Rs. 32.61

(B) *Cost of recovered materials*:

Metal: approximate 1½ seers at Rs. 1.27 per seer	Rs. 1.91
Wax: approximate 1.8 seers at Rs. 1.70 per seer	Rs. 3.06
	Rs. 4.97

(C) *Cost of wastage*:

Metal: approximate 1 seer	Rs. 1.27
Wax: approximate 0.8 seer	Rs. 1.36
	Rs. 2.63

(D) *Net cost of raw materials*:

Gross cost	Rs. 32.61
Recovered materials	Rs. 4.97
Net including wastage	Rs. 27.64

(E) *Cost of labour*:

The specimen under consideration has taken fifteen days of labour, three days for the making of the wax model, and twelve days for the finishing. The entire operation of making the image had extended over a period of fifteen days. The Sthapathi when he works in another's pattarai gets about Rs. 4/- per day. Assuming that the entire work has been done by the Sthapathi himself the cost of labour would be Rs. 4 x 15 = Rs. 60.

(F) *The total cost of production including the cost of labour* Rs. 87.64

(G) The price of the Nataraja image when the workmanship is good as in this particular case Rs. 110.00

But this is a contract price which is not always fetched by all I' images. When the workmanship is just the average, the Sthapathi would be getting just about Rs. 3 to Rs. 3.25 per seer of the finished product. The price, therefore, might be taken to vary between Rs. 50 and Rs. 110/-

(H) In this particular case when the Nataraja piece is sold for Rs. 110/- the Sthapathi shall be getting a profit of Rs. 22.36 over and above his wages at Rs. 4/- per day. When the Nataraja goes for just Rs. 87.64, the Sthapathi would be merely getting his wages. When it goes for a price much below this, the Sthapathi would not even be getting his normal wage at Rs. 4/- per day.

Speciman No. II

Maha Ganapathi Idol

The following data were collected in connection with the making of the image of standing Ganapathi (Maha Ganapathi), with prabha and pita, about 38" height. The figures again are from memory and are therefore approximate.

Weight	about 260 seers (160 lbs)
Height	about 38 inches
Amount of metal taken for the pour	about 280 seers
Amount of metal that may have been recovered	about 10 seers
Amount of wax taken	about 31 seers
Amount of wax recovered	about 28 seers
Cost of coke about 20 maunds	20 x 3.00 = Rs. 60.00
Cost of cowdung cakes and firewood	about Rs. 25.00
Cost of polishing materials	about Rs. 2.00
Approximate number of days of labour required to finish the product	45 days
Span of time during which the work was completed	50 days

The same alloy was used as in Specimen No. I

(A) *Gross cost of raw materials*

Cost of metal 280 seers at Rs. 1.27 per seer	Rs. 355.60
Cost of wax 31 seers at Rs. 1.70 per seer	Rs. 52.70
Cost of coke 20 maunds at Rs. 3/- per maund	Rs. 60.00
Firewood and dung cake	Rs. 25.00
The ceramic crucible used in the melting can be used only for about five or six times. In this case about 4 crucibles are used each with a capacity to melt 80 seers. ¼th of each crucible may be allowed for depreciation and in total the cost of melting might include the cost of single crucible	Rs. 9.00
Polish materials	Rs. 2.00
	Rs. 504.30

(B) *Cost of recovered materials*

Cost of metal recovered approximate about 10 seers at Rs. 1.27 per seer	Rs. 12.70
Cost of wax recovered approximate about 28 seers at Rs. 1.70 per seer	Rs. 47.60
	Rs. 60.30

(C) *Cost of wastage* :

Wastage of metal about 10 seers	Rs. 12.70
Wastage of wax about 3 seers	Rs. 5.10
	Rs. 17.80

(D) *Net cost of raw materials used*: (504.30 - 60.30) Rs. 444.00

(E) *Cost of labour* :

The specimen under consideration had taken about 45 days of labour, about 10 days for the making of the wax model and 35 days for the finishing. The entire operation had extended over a span of 50 days. Assuming that the Sthapathi himself had worked the image, the labour cost according to the alternative price which the labour of the Sthapathi would have fetched in another's pattarai would be 45 x 4 Rs. 180.00

(F) *Total cost of production including the labour cost* Rs. 624.00

(G) The agreed price for this specimen was Rs. 800/- The minimum price it would have fetched at the rate of Rs. 3/- per seer of finished product is 260 x 3 i.e. Rs. 780. The maximum price for the same piece with better execution is uncertain, but pieces of the same weight have fetched from the middlemen a price upto Rs. 1,100/-. The price might be therefore taken to vary between the ranges of Rs. 3 and Rs. 4.27 per seer of finished product.

(H) In this particular case when the icon is sold for Rs. 800/- the craftsmen would be getting about Rs. 176 over and above the wages. When the piece goes for the minimum price of Rs. 780/- he would get Rs. 3.50 per day over and above his wages, but then probably he would have worked for a lesser number of days. When it goes for Rs. 1,100, the price for an exceptional piece of workmanship, he would get Rs. 10.5/- per day over and above his wages — but again he may have had to work for more number of days.

Specimen No. III

Big Nataraja Idol

The following details were given by Sri Devasenapathi Sthapathi about the *finished* Nataraja image he has recenty cast.

Weight (half finished)	1,200 seers
Height with pita and prabha	6' 2"
Amount of metal poured	1,200 seers
Amount of wax weighed after draining	120 seers
Wax taken originally approximate	130 seers
Coke required about	80 maunds
Number of ceramic crucibles used	15
Cost of firewood, dung cakes etc.,	Rs. 100.00
Number of days required for the wax modelling : about	30 days
Number of days of labour he might require for a proper finish	minimum 60 days maximum 90 days

(A) *Gross cost of materials*:

Metal alloy 1200 × 1.27	= Rs. 1,524
Cost of wax 130 × 1.7	= Rs. 221
Cost of coke 80 × 3	= Rs. 240
Cost of firewood, dung cake etc.,	= Rs. 100
Cost of ceramic crucibles used 4×9	= Rs. 36
Cost of polishing etc.,	= Rs. 5
	Rs. 2,126

(B) *Cost of recovered materials*:

Metal recoverable about 25 seers 25 × 1.27	Rs. 31.75
Wax recovered about 120 seers 120 × 1.70	Rs. 204.00
	Rs. 205.75

(C) *Cost of wastage*:

Possible wastage of metal about 25 seers 25 × 1.27	Rs. 31.75
Wastage of wax about 100 seers 10 × 1.70	Rs. 17.00
	Rs. 48.75

(D) *Net cost of raw materials used*:

Gross cost — recoverable waste (2126 — 205.75)	Rs. 1920.25

(E) *Cost of Labour*:

The specimen had already taken about 30 days of labour for modelling in wax and assuming that it would require a maximum of ninety days for a proper finish the total number of days of labour required would be about 120. Assuming again that the Sthapathi himself works on the cast till finish, the labour cost calculated on the basis of the alternative price his labour would fetch in market is 120×4= Rs. 480

(F) *Total cost of production including the cost of labour would be* Rs. 2,400.25

(G) The contract price for the specimen is Rs. 4600/-. At the minimum it would have fetched a price of Rs. 3,600/- at the rate of Rs. 3/- per seer of finished product. The price varies within the range of Rs. 3/- per seer of finished product to Rs. 3.83 per seer.

The above analysis of the production cost of these three specimens reveals that the net cost of raw materials per seer of finished product tends to be constant between Rs. 1.60 per seer and Rs. 1.80 per seer (Rs. 1.78 in the first, Rs. 1.70 in the second and Rs. 1.60 in the third specimen respectively). The labour cost, however, varies considerably as between different specimens depending on the size of the specimen as well as the experience and skill of the craftsmen. The rewards may not be as much as the statistics here reveal, concealing as they do wages paid to a casual type of labour specially employed on certain occasions, but even then it can be said that the bigger the images, the better the reward. But orders for such big images as the last specimen, come but rarely and even then they come only to a few with the necessary talent and ability as well as the capital to execute them. In the majority of cases, the orders relate to image not exceeding two feet in height. At the minimum, however, the reward for labour might be taken to be Rs. 1.30 per seer of finished product when the product fetches a price of Rs. 3/- per seer. The maximum limit is not easy to fix varying as it does with the talents and ability of the craftsmen, the size of the product, as well as the demand for it.

2. *The Market*: The significant fact about the market for icons is that the average Sthapathi, in ninety out of hundred cases, executes orders and does not produce for market with its rise and fall of price levels. Rarely does a Sthapathi produce something new without an order for it and wait for a buyer. When he does, it is an exception to the rule. Generally when the Sthapathi starts on a wax model he has a buyer at the other end waiting for his product.

Role of Middlemen

Few of the Sthapathis have direct contact with the final buyer of their products. Largely the Sthapathi receives his orders through the middlemen merchants or through the Cooperative Society. The orders coming to the Sthapathi through these agents may be for some traditional murti unaccompanied by any other specification, or may be for some particular designs, accompanied by instructions, sketches and photographs. In either case, the Sthapathi does not know whether they are meant as objects of art or intended for worship at home, at a mutt, or a temple. He merely executes the orders and gets paid at the agreed rates.

Direct purchase by the user

In the few cases in which the final buyer approaches the Sthapathis direct, the orders are either from individuals who are exceptionally keen about getting what they want, mutts, and temples for images intended specifically for worship. In such cases the buyer gives specific instructions about the image he wants. The orders from temples and mutts are indeed rare. In the course of our interviews with the Sthapathis, many of them have admitted that they have not made any image specifically intended for worship in a mutt or a temple. Those who have undertaken such temple orders told us that only three or four orders were received within the last two years. They were for the most part for the images of Grama Devatas—A Mariammen or an Ayyanar and not infrequently for a Murugan and a Ganapathi also. Direct temple orders, therefore, do not even constitute a significant proportion of the bulk of orders which the Sthapathis of Swamimalai receive annually. This, of course, does not take into account the possibility that the orders received through the middlemen may be intended for worship.

Some general features about disposal

3. The standard of production varies with the type and source of orders received. Talent and experience differ considerably among the different Sthapathis. Some of them are talented and are capable of reaching heights of artistic excellence. Though the traditional texts are no longer known or followed, this has at least the effect of saving some of the craftsmen from working entirely by rules and has afforded scope for the expression of their native imagination and creativity. Orders when they come from temples or individual buyers generally go to the talented craftsmen and are very exacting. In this case the concerned Sthapathi charges a contract price for the execution of an image-design, but the buyer will buy the icon only when it is satisfactory to him. The Sthapathi may be often forced to re-do the whole thing. To avoid wastage in time and material, the Sthapathi shows the wax modelling to the buyer and proceeds further only when the buyer is satisfied with the modelling in wax. The best images produced, are in regard to this type of orders and they form a class apart.

Sometimes this type of orders is brought by the middlemen also. But then these agents do not enter into contract with all Sthapathis, but only with such of them whose talent and experience are well- known.

Normally, however, the middlemen buy the images and pay for them according to their weight. The rate per seer of finished product varies from Rs. 3/- to Rs 3.50 depending upon the execution. Occasionally, however, when he finds good work he may pay a bonus. But generally these are the terms for which the average craftsman undertakes production for the middlemen. In such cases, the middleman is not exacting beyond a certain limit and the craftsman is not very enthusiastic to give his best.

The figures available regarding the annual value of production and the monthly income of the craftsmen are highly approximate. In most cases the craftsmen did not return any figure at all in respect of queries in this regard; and those who returned some figures did it as a rough approximation after a good deal of guess work. The total production undertaken for the Co-operative Society alone during the year 1960 was for Rs 10,095/-. And assuming that this represents half the value of total annual production the latter might be taken to be about Rs 20,000/-. But in fact it may be much higher. Still, production for the middlemen is much higher than production for marketing through the Co-operative Society.

Income

4. Similar is the income of the household. Of the 17 Pattarais the investigator has visited, only five returned an average income of Rs 300/-. Three have stated their income to be less than Rs 150/- per month. The rest have returned that they are making about Rs 200/- per month. But in many cases the investigator is left with an impression of gross understatement of facts. One reason for that might be the inapplicability of the concept of monthly income to the type of work the Sthapathi does where spells of activity alternate with periods of idleness; another might be the illiteracy of the average craftsmen and the absence of any accounting. In some cases the understatement appeared to be deliberate. There is no way of



The stone image of Swami Vivekananda made at the Myladi Stone Workers' Cooperative Society.



A view of the Myladi Stone Workers' Cooperative Society in Kanyakumari district.

checking up the truth for the relevant statistics are even more difficult to obtain.

The role of the co-operative society

5. A Co-operative Society has been started for the practitioners of this craft in December 1958. This is a credit-cum-marketing society. It started purchases from its members from April 1959 onwards and the total value of its purchases upto August 1961 runs upto Rs 24,398. The products are exhibited and sold through the numerous sales emporia of the All India Handicrafts Board, and the Department of Industries and Commerce as well as through private merchants.

Training Institute

6. A training institute has been started by the Department of Industries and Commerce at Swamimalai itself under the superintendence of a master-craftsman. It seeks to give training to about 30 boys drawn mainly from the Sthapathi families. It is also intended to popularise some of the old designs, not actually meant for worship, to be found in some temples. These, when copied in metal would be admirable objects of art and would introduce novelty and variety in the designs of the icons. Simultaneously efforts are also being made to edit old manuscript copies of availablc silpasastras and agamas in the Saraswathi Mahal Library at Thanjavur. So far the texts of Saraswatheeyam, Brahmeeyam and Kashyapam have been edited and published. The text of Manasara is being edited at present.

Need to preserve the art

7. The art craft of icon-casting is worth preserving for its artistic merit alone. Besides, it has the potentiality of giving employment to a large number of Sthapathis as well as non-Sthapathis. Already, the craft is thriving. According to the statements of the Sthapathis themselves, the products of this craft have a better demand now than ever before. Though the demand for worshippable icons is decreasing, that for artistic consideration is on the increase, mainly from abroad and from visiting tourists. The latter are exacting in their own way and the general standard of production has definitely improved compared to what it was a few years back. Better advertising, the reintroduction of old designs found so far only in stone etc., would go a long way in enlarging the market, and bringing a better reward for the practising craftsmen. The efforts of the training institute are already to be seen in such designs as the "Siva Parvati Nadanam" and the "Ajanta Apsares" which are old designs but only recently introduced in metal.

APPENDIX I

TABLES ON METAL ICONS

TABLE I

List of Rural Crafts and Number of persons employed in production

Name of craft	Number of villages	Number of persons employed		
		Males	Females	Total
Bronze Icon-casting	Swamimalai	26 + 31	...	26
,,	Thiruvalenchuli	1	...	1
,,	Thiruvidamarudhur	3	...	3
,,	Kumbakonam	1	...	1
	Thanjavur	1	...	1

TABLE II

Distribution of Artisan Communities

Name of caste or community	Names of villages surveyed	Approximate number of families	Total number of adult workers	Number of families working under co-operation	Number of families working in own houses or in workshops set up by their employers
Visvakarma (Kammalans)	Swamimalai	17	26	15	15
Others	Swamimalai	—	31		
Visvakarma	Thiruvalenchuli	1	1		
,,	Thiruvidamarudhur	2	3		
,,	Kumbakonam	1	1		
,,	Thanjavur	1	1		

TABLE III

DISTRIBUTION OF ARTICLES OF RURAL CRAFTS BY MATERIALS USED

	Main material		Subsidiary material			
Name of Article	Name of material	Number of villages engaged in manufacture	Name of material	Number of Villages engaged in manufacture	Raw materials and place from which imported	Number of villages engaged in manufacture
Bronze Icons	Brass Copper Lead (white)	5	Wax Fuel Firewood Dung cake	5	Copper – obtained from the local market at Kumbakonam and Thanjavur Brass – Scraps of brass from the local market at Kumbakonam or Thanjavur. Lead — Obtained from the local market at Kumbakonam or Thanjavur.	

22247

TABLE IV

DESIGNS

Name of Article	Name of villages engaged in manufacture indicating the sources from which they receive designs						Name of design		Colour used	
	Traditional	Self designed	Middlemen	Design centres	Co-operative Societies	Other sources	Name	Number of villages engaged in manufacture	Name of colour	Number of villages engaged in manufacture
Bronze Icons	...	Many designs are traditional. The traditional designs of murties are adopted in self-designed compositions by Sthapathis.				...	All traditional moorties Siva —His 18 variations or rupas Vishnu —Different poses and incarnations Lakshmi Saraswathi Kali, Durga Mariamman Ayyanaar Murugan, Etc.	Five	No colour is used.	...

TABLE V

CONSUMPTION AND SALE

Name of Article	Number of villages which entirely produce for use		Number of villages which produce for both personal use and sale	Number of villages which produce for sale in open markets		Number of villages where there are cooperative sales societies
	Domestic	Ceremonial		On order of middlemen	others	
Bronze Icon	...	...	Produced for sale; either for worship or for artistic decorations.	All produce for orders of middlemen and rarely for sale in open market.	...	Swamimalai

TABLE VI

COST OF PRODUCTION

Name of Article	Number of villages surveyed	Cost per lb. per village of raw materials	Cost per lb. of finished product	Average sale price of finished goods	Average earning per worker
Bronze Icons	Swamimalai	Rs. 1.27 per seer of metal alloy (Brass, copper white lead)	Rs. 1. 70 per seer of finished product (Excluding labour charges)	The goods are made on contract basis and not for sale	The Sthapathi realises Rs. 3/- to Rs. 4.27 per seer of finished product.. The workman's wages however is restricted to Rs. 3/- per day whenever employed.

TABLE VII

LIST OF VERY SKILLED CRAFTSMEN OF EACH COMMUNITY

Name of village	Name of craft	Name of comunity	Name of skilled craftsmen
Swamimalai	Icon-casting in Bronze	Visvakarma	1. Ramaswamy Sthapathi
			2. Devasenapathi ,,
			3. Moorti ,,
			4. Govindaswamy ,,
			5. Purushottama ,,
			6. Ramalinga ,,
			7. Subramania ,,
			8. Karunanidhi ,,
			9. Manicka ,,
			10. Sivananda ,,
			11. Swaminatha ,,
			12. Shanmukha ,,
			13. Doraiswamy ,,
			14. Sambasiva ,,
			15. Subramania ,,
			16. Muthusamy ,,
			17. Sambandan ,,
Thiruvalenchuli	,,	,,	18. Annaswamy ,,
Thanjavur	,,	,,	19. Ekambara ,,
Karaikudi	,,	,,	20. Sankaranarayana ,,

LIST OF STHAPATHIS

1. Govindaswami Sthapathi, Mettu Street, Swamimalai.
2. Purushothama Sthapathi, Vadampokki Street, Swamimalai.
3. Moorti Sthapathi, Raja Veedhi, Swamimalai.
4. Devasenapathi Sthapathi, Raja Veedhi, Swamimalai.
5. Ramaswamy Sthapathi, Raja Veedhi, Swamimalai.
6. Ramalinga Sthapathi, Mettu Street, Swamimalai.
7. Annaswamy Sthapathi, Madavilakem, Thiruvalanchuli.
8. Sambasiva Sthapathi, Thiruvidamarudhur.
9. Subramania Sthapathi, Raja Veedhi, Swamimalai.
10. Karunanidhi Sthapathi, Raja Veedhi, Swamimalai.
11. Manicka Sthapathi, Perumal Kovil Street, Swamimalai.
12. Sivananda Sthapathi, Raja Veedhi, Swamimalai.
13. Swaminatha Sthapathi, Vadempokki Street, Swamimalai.
14. Shanmukha Sthapathi, Vadempokki Street, Swamimalai.
15. Duraiswamy Sthapathi, Vadempokki Street, Swamimalai.
16. Sambasiva Sthapathi, Vadempokki Street, Swamimalai.
17. S. Subramania Sthapathi, Vadempokki Street, Swamimalai.
18. Muthuswamy Sthapathi, Vadempokki Street, Swamimalai.
19. Sambaden Sthapathi, Vadempokki Street. Swamimalai.
20. Ekambara Sthapathi, Third Flower Street, Thanjavur.
21. Shankaranarayana Sthapathi.

APPENDIX II A

Iconometric prescriptions compiled from the Agamas and Silpasastras

The Agamas and the Silpasastras have prescribed various sets of proportions for the making of the images of the gods and goddesses. The basic unit of measurement in all these is called the Tala. Tala literally means the palm of the hand and by implication it is equal to the measure of length equal to that between the tip of the middle finger and the end of the palm near the wrist. This length is in all instances taken to be equal to the length of the face from the scalp to the chin. It is, therefore, usual to measure the total length in terms of the length of the face rather than in terms of the palm of the hand. One should however not be led to believe that the phrases Dasatala, Panchatala and Ekatala mean lengths equal to ten, five and one tala respectively; for such a belief does not agree with the actual measurements. The total length of the image made according to Uttama dasa tala is 124 angulams and the tala of this image measure $13\frac{1}{2}$ angulams; dividing the total length by the length of the tala one finds that there are only nine talas in it. There is thus no clear etymological significance visible in the names given to these sets of proportions in the Silpasastras.

There are about 30 different proportions mentioned in the Silpasastras. These are grouped into ten classes of three each. Of three in each, the first is called the uttama (or the superior), the second is called the madhyama (or the middle) and the third the adhama (or the inferior). The following is the list of classes and sub-divisions of the proportions given in Kashyapam, Brahmeeyam and Saraswatheyam :

Name of the Tala measure	Division of the Tala measure	Total length (Angulams)	Length of the face (Angulams)	C:D
A	B	C	D	
1 Dasa Tala	Uttama	124	$13\frac{1}{2}$	9
	Madhyama	120	13	$9\frac{1}{4}$
	Adhama	116	$12\frac{1}{2}$	$9\frac{1}{3}$
2 Nava Tala	Uttama	112	12	$9\frac{1}{3}$
	Madhyama	108	$11\frac{5}{8}$	
	Adhama	104	$11\frac{1}{4}$	
3 Ashta Tala	Uttama	100	$10\frac{3}{4}$	$9\frac{1}{3}$
	Madhyama	96		
	Adhama	92		
4 Sapta Tala	Uttama	88		
	Madhyama	84		
	Adhama	68		
5 Shat Tala	Uttama	76		
	Madhyama	72		
	Adhama	68		
6 Pancha Tala	Uttama	64		
	Madhyama	60		
	Adhama	56		
7 Chatus Tala	Uttama	52		
	Madhyama	48		
	Adhama	44		
8 Tritala	Uttama	40		
	Madhyama	36		
	Adhama	32		
9 Dwitala	Uttama	28		
	Madhyama	24		
	Adhama	20		
10 Ekatala	Uttama	16		
	Madhyama	12		
	Adhama	8		

Uttama is more than the Madhyama by 4 angulams and adhama is less than Madhyama by 4 angulams. In the making of images the Silpasastras and the agamas allow an error of $\frac{3}{4}$ angulam either way allowing the sculptor some scope to mould the images according to his own artistic instinct. In practice, it is found that these proportions more or less yield artistic images; they are a means to dwarfing and enlarging the different images to show power, stature and status and must have been arrived at after an elaborate study of the proportions of the various members of the human body of different types.

There are two kinds of units in the Indian measure of length, the absolute and the relative, though both are called "the angula". The absolute unit (the absolute angula) is based upon the length of certain natural objects. It is defined in the Silpasastras as follows :

The moat in a beam of sunlight which is so microscopic as to be invisible to any but the yogin is called

the Anu or Paramanu. There is no smaller unit of measure than this Anu in nature.

8 such Paramanus make one Renu
8 Renus make one Romagra
8 Romagras make one Liksha
8 Likshas make one Yuka
8 Yukas make one Yava
8 Yavas make one Uttama manangulam
7 Yavas make one Madhyama manangulam
6 Yavas make one Adhama manangulam

The relative unit of the measure of length is obtained from the length of the particular part of limb of the person whose measurement is under consideration. Matrangulam is equal to the length or the breadth of the midphalange of the mid-finger of the person. If the height of the image is divided into 120, 124 and 116 parts each part is called a delra leptangula. One eighth of this is called the Yava.

Besides these, there are other larger units of length each having many synonyms. Thus Angulam is also known by the terms Indu, Ambaram, Vishnu, Uktam and Moksham.

A measure of two angulas is known by the words Kalai, Kolakem, Paksham, Akshi, Vihakam, Brahmanam, Aswini, Yugnam, Adyuktam, and Vayu. A measure of three angulas is known by the words VARKAM, AGNI GUNAM, RUDRAKSHAMADHYA and KALA. A measure of four angulas is known by the words BAGAM, VEDAM, CHATURAM, AMBAM, YUGAM, TURIYAM, ABJAJANANAM, PRATHISHTA, KARANAM, JATHI, and VARNAM.

A measure of five angulas is known as PRITHVI, SUPRATHISHTA, BHUTAM, ISHU, VISHAYAM, INDRIYAM AND RUDRANANAM.

A measure of six angulas is known by such words as KARMA, ANGAM, SAMAYANANAM, KAUSIKARTU, KUMARAN, RASAM, GAYATRI and KRITHIKAI.

A measure of seven angulas is known by PATALAM, MUNIVAR, DATU, LOKAM, USHNIK, ROHINI, DWEEPAM, NAGAM and AMBONIDHI.

A measure of eight angulas is known as LOKABALAR, DWIPAM, URAGAM, VASU, ANUSHTUP and BANDHAM.

A measure of nine angulas is known as GRAHAS, RANDRAM, BRAHATI, RATNAM and NANDAR.

DASAM, PRATHURBHAVAM, NADI and BANKTI denote a measure of 10 angulas. DRISHTUP and RUDRAN denote a measure of eleven angulas.

VIDASTI, MUKHAM, TALAM, RASI, JAGATI and SURYAN stand for a measure of 12 angulas.

ATIJAGATI is a measure of 13 angulas. MANU and SAKVARI are for a measure of 14 angulas.

THITHI and ATISAKVARI for 15 angulas. KRIYA, ASHTI, INDU and KALA stand for a measure of 16 angulas.

ADYASTI denotes a measure of 17 angulas

SMRITI AND TRITI denote a measure of 18 angulas.

ATITRITI denotes a measure of 19 angulas
KRITI denotes a measure of 20 angulas
PRAKRITI denotes a measure of 21 angulas
AKRITI denotes a measure of 22 angulas
VIKRITI denotes a measure of 23 angulas
SANKRITI denotes a measure of 24 angulas
ABIKRITI denotes a measure of 25 angulas
UTKRITI denotes a measure of 26 angulas
NAKSHATRAM denotes a measure of 27 angulas
DEVANGULAM denotes a measure of 30 angulas

There are six types of measurements prescribed by the Silpasastras for every image. These are known by the terms Mana, Pramana, Unmana, Parimana, Upamana, and Lambamana. Of them, Mana, which is also known by such other terms as AYAMAM, AYADHAM, and DHEERGAM is the measurement of the length of the body; Pramana which is also known by such synonyms as VISTARAM, TARAM, VISTRITAM, VISTIRTI, TATI, VICHRITI, VYASAM, VISARI, VIPULAM, TATAM, VISKAMBAM, and VISALAM is breadth i.e., a linear measurement taken at right angles to and in the same place as mana; measurement taken at right angles to the plane in which mana and pramana measures have been noted is called Unmana which is synonymous with such terms as UCRAYAM, TUNGAM, UNNATAM, UDAYAM, UTCETAM, and UCCAM. Pramana is the measurement of the girths or the periphery of the images also known by such terms as PRAVESAM, NATAM, PARINAHAM, NAHAM, VRITI and AVRITI. UPAMANA refers to the measurements of the interspaces between members of the body. This is also known as NEEVRAM, VIVARAM and ANTARAM.

And finally Lambamanam refers to the measurement of the image taken along plumb-lines.

Besides the smaller unit known as Dehangula there are other larger units of length (relative units) which are called PRADESA, TALA, VITASTI, and GO-KARNA: the distance between the tips of the thumb and the forefinger when they are stretched out to the utmost is called a Pradesa; that between the tips of the thumb and the middle finger when stretched out is called the Tala: that between the tips of the stretched out thumb and ringfinger is known as the Vitastu: and that between the stretched out thumb and little finger is called the Gokarna.

The different measurements are to be measured with instruments known as Karkedam, Vastram and a stretch of palm leaf and prelambappalakai. Length and breadth are measured with the first, girth with the second, lambamana with the prelambapalakai and small measures such as those of the digits with the palm leaf. Karkedam is a stick with painted edge, thick base and the surface smooth all over. Prelambapalakai is a plank 68 angulas in length and 24 angulas breadth. It is about 2 angulas in thickness. It should be smooth and finely ornamented. All around the plank a margin of 3 angulas is left. The different sutras are suspended through holes bored in the Prelambapalakai at places shown below.

The sutras suspended are are as follows:

A. Madhya Sutra
B. Prishta Sutra
C. Puta Paryanta Sutra
D. Netra Paryanta Sutra
E. Mukha Paryanta Sutra
F. Kaksha Paryanta Sutra
G. Bahu Paryanta Sutra
H. Karna Paryanta Sutra
I. Parabhunjavadhi Sutra

The sutras derive their name from the organs they touch or encompass. Thus the sutra imagined as passing vertically through the centre of the body is the madhya sutra; the same looked at from the back is Prishta sutra and from the front is Purva sutra. There are besides certain other horizontal lines which are imagined to be passing across the body of the image horizontally at different points. These vertical and horizontal sutras are illustrated in the figures attached.

The Silpasastras prescribe various proportions to the images of various gods and goddesses and other beings belonging to the Hindu pantheon. The unit of measurements chosen for these various proportions is the Tala. The different tala measurements prescribed for the various images are given in the following table.

The Tala	Angulas	Murtis to be made in the particular Tala
Uttama dasa Tala	124	Brahma, Vishnu, Siva
Madhyama dasa Tala	120	Uma, Saraswathi, Usha, Bhuma, Durga, Lakshmi, The Saptamatas, Jyeshta-devi.
Adhama dasa Tala	116	Chandran, Suryan, the Aswini devas, the Maha-rishis, the nine grahas, Ayyanar, Shanmuga, Chandikesa, Kshetrabalar, Bairav.
Uttama Nava Tala	112	The Ashta (or eight) Vasus. the Vidyadipas, the Loka-balas, and other Devas.
Madhyama Nava Tala	108	The Yakshas, the Apsaras, the Ashtamurtis, the Marut Ganas
Adhama Nava Tala	104	The Asuras, the Siddhas, Gandharvas, the Pitrus.
Ashta Tala	100	The human beings
Sapta Tala	84	The Pisasas
Shat Tala	72	The Gupjas (Hunch backs Dwarfs etc.)
Pancha Tala	64	Vigneswar or Ganapati
Chatus Tala	48	Images of children
Tritala	36	Kinnaras
Dvitala	24	Kimpurushas
Ekatala	12	Kurmam

In the tables below are collected and presented the six types of measurements for every particular tala given in the Kashyapam, Brahmeeyam and Saraswatheeyam.

Every icon has the following four major parts:

1. Mahangam
2. Angam
3. Upangam
4. Pratyangam

Mahangam comprises of face and the torso; Angam of the limbs i.e. arms and legs; upangam of hair, nail, teeth etc., Pretyangam of weapons ornaments and dresses.

Angam: Both the legs are planted firm in the Sanapade attitude. In the Atibange or abange attitudes

one leg may be planted firm and the other held with a slight bend (KUNJITA). In the dance postures, either of the legs may be raised; when seated on the pedastal the left is suspended free and the right folded over the pita.

The arms generally carry the emblems and flowers. When free and sometimes even when holding such emblems they are required to be imaged in particular poses and with certain mudras. These poses and mudras are as follows:

Abhaya	...	Suggesting protection
Varadha	...	Suggesting bestowal
Ahuya Varadha	...	Suggesting beckoning to come and receive
Vyakhyana and Upadesa	...	Suggesting supposition
Thana	...	Suggesting knowledge
Chin	...	Suggesting realisation of the absolute
Yoga	...	Suggesting meditation
Tarjini	...	Suggesting threatening
Suchi	...	Suggesting pointing
Vismaya	...	Suggesting wonder or ecstasy
Kataka	...	Usually suggesting holding
Ardha Chandra	...	Half-moon or crescent
Anjali Hasta	...	Supplication
Katyavalambith Hasta	...	Head or beside the lip
Lola Hasta	...	Arm loosely extended
Lamba Hasta	...	Arm loosely hanging
Danda Hasta	...	Arm straight like a stick
Gajahasta	...	Elephant trunk arm.

Pratyangam.

1. Head-dress: This may be either a makuta (or a crown) or simply bandha which is a knot of hair. Makutas can be of two kinds viz., Kirita makuta or conical crown and Karanda makuta so called because of its resemblance to a pile of inverted pots. Gods generally wear the Kirita makuta and goddesses Karanda makuta. In the case of Siva he wears what is called a Jata makuta that is he has his matted locks themselves plaited so as to form a spiral more or less similar in shape to a makuta.

Bandha or simply a knot of hair may be of two kinds. If it is made of hair carefully combed and plaited, it is called the KESA — BANDHA. If it is made simply of matted locks it is called a Jata-Bandha. In the case of Krishna he wears a Kondai which is hair wrapped round a circular ring of rushes.

2. Ear wears: All the images have something or other in the ears. The ear wear is called Kundala. They can be either makara kundalas i.e. Kundalas in the form of a Makara or a dragon (not very unlike a crocodile) or Patra Kundalas i.e, Kundalas in form of curled leaf. Simha Kundalas are Kundalas in the form of a lion head and patra Kundalas are in the form of buds.

KEYURAS are worn on the upper part of the arm and VALAYAS on the wrist.

Upon the chest and around the neck are worn such ornaments as Kanda haram, Upagrivam and Chanveviam.

Yajnopavita is worn both by gods and goddesses.

Female images (particularly the images of Parvati Lakshmi and Saraswathi) wear breast bands called Kucha Bandha.

Udara Bhanda is a waist band worn just above the waist by the male images.

Kati Bandha is the girdle that holds the cloth in position. This is generally a broad, multiple bend across the hips with an ornamental clasp resembling the fall of a lion.

Padasaras are worn on the feet. These rest on the feet encircling the ankles behind.

Weapons etc., are as follows:

1. Axe	Siva
2. Trident	Siva Kali
3. Pasam	Siva Yama
4. Sword	
5. Knife	
6. Plough	
7. Disc	Vishnu
8. Conch	Vishnu
6. Gadha	Vishnu
10. Bow	
11. Spear	

Postures and Attitudes.

Idols may be in any one of the following postures:

1. Standing or STHANAKAM
2. Sitting or ASANAM
3. Reclining or SAYANAM

This posture is particularly for idols of Vishnu as images of Siva shall not be found reclining.

4. Dancing or NRITYAM

Dance postures are only for Siva as Vishnu images are not found to be dancing except in the case of the image of Navanita Krishna where Balakrishna is found to be dancing with a roll of butter in his hand.

Sthanakam: Standing figures may be in anyone of the following attitudes;

1. Samabhanga or Samapadha
2. Abhange
3. Tribhange, and
4. Atibhanga

In Samabhanga or Samapada the right and the left halves of the figure are shown in symmetrical patterns. The figure is raised perpendicular to the pedestal without inclining to the right or left. In other words the Purva sutram shall fall through the middle of the forehead, the tip of the nose, the middle of the neck and the chest, through the naval, and the middle of the madhra shall fall between the two feet.

In Abhanga attitude the upper half of the figure is inclined slightly to the right and left without changing very much the Samapade position of the larger half of the body.

In Tribhanga attitude the lower limbs upto the hips are inclined to the right, the trunk and the shoulder to the left and the neck and the shoulder to the right again or vice versa.

In the Atibhanga attitude, the tribhanga attitude shall be very much emphasised. The upper half of the body from the hips is bent in a sweeping curve to the left or the right backwards or forwards. The lower limbs are also bent or stretched sideways or backwards or forwards to show dynamic movement as in the cosmic dance of Nataraja or in that of the Navanitakrishna.

Asanam: If the pedestal on which the image is seated (or standing) is plain it is called the Badhrasan; if it is shaped like a lotus blossom it is called the Padmasanam.

Idols may be found seated in the Sukhasana posture i. e. one leg folded over the pita and the other hanging loose or with both knees folded and feet placed together over the pita. The latter is called the Gajahastasana when the hands are straight the wrists on knees and the palms hanging loose.

Abhanga: In such a figure the plumb-line or the centre line from the crown of the head to a point midway between the heels passes slightly to the right of the naval. In other words, the upper half of the figure is made to incline slightly towards its right side, that is, to the left side of the artist on the reverse. The hips of the abhanga figure are displaced from their normal position about one angulam towards the right side of the artist or the reverse.

Tribhanga: In these figures the centre line passes through the left (or right) pupil, the middle of the chest, the left (or right) of navel down to the heels. Thus the figure is inclined in a zig-zagged or curve like the stems of a lotus or like an ascending flame. The lower limbs from the hips to the feet are displaced to the right (or left) of the figure, the trunk between the hips and the neck to the left (or right) while the head leans towards the right (or left). Images of gods belonging to the Tribanga type have their heads inclined to the right while gods always keep theirs to the left.

Atibhanga: This is an emphasised form of Tribhanga the sweep of the Tribhanga curve being considerably enhanced.

APPENDIX II B

Traditional designs, the connected legends and Iconographic prescriptions compiled from the Silpasastras.

The Icon products of Swamimali are made to individual order placed by individuals as well as for a common market. One can choose any design from the many collection of gods and goddesses and the craftsmen at Swamimalai will copy the design in metal. We have listed in the following pages some of the important traditional designs as well as the legends and myths and the iconographic descriptions and measurements wherever these are possible. Descriptions and measurements of these images are given in the various agamas and silpasastras of which a few have been published, a few lost and a few others survive in manuscript form though badly mutilated and soiled.

I. Image of Gods and Goddesses— The cult deities—Siva

Siva is the deity of the Saivaites. He is worshipped generally in his lingarupa or phallic mode. Even when he is worshipped in such form images of him are made for purposes of Utsava. The images of Siva may be in three forms. 1. Saumya or depicting Him in peaceful aspects. 2. Rudra depicting Him in his furious aspects and 3. Nritya depicting him in one of his manifold dance postures.

A. Saumya murtis of Siva

1. Sukhasana murti

This is the murti to be commonly found in every Siva temple as the Utsavamoorti. This has to be made in Uttama dasa tala measurement. This image shall be in the seated posture and is of the Rajasik type. The pedastal shall be Bhadrapida. The Sukhasanamoorty should be seated erect, be of coral complexion, must have three eyes and a beautiful face, must be expressive of Rajasik Guna and be clad in tiger-skin and silken garments.

The palms of the outer arms may be inturned or outturned. In the right outer is the parasu (or axe) and in the left the deer. The two lower arms are the Abhaya and Kadaka hastas. The left ear should particularly have sankhapatra. The right is either makara kundalam or sarpa kundalam.

Sukhasanamurty shall be wearing a makuta having a lalata pattam. This makuta shall have on four sides leaf-like ornamentations. In the right side there shall be the serpent and the Umattam flower and in the left the crescent.

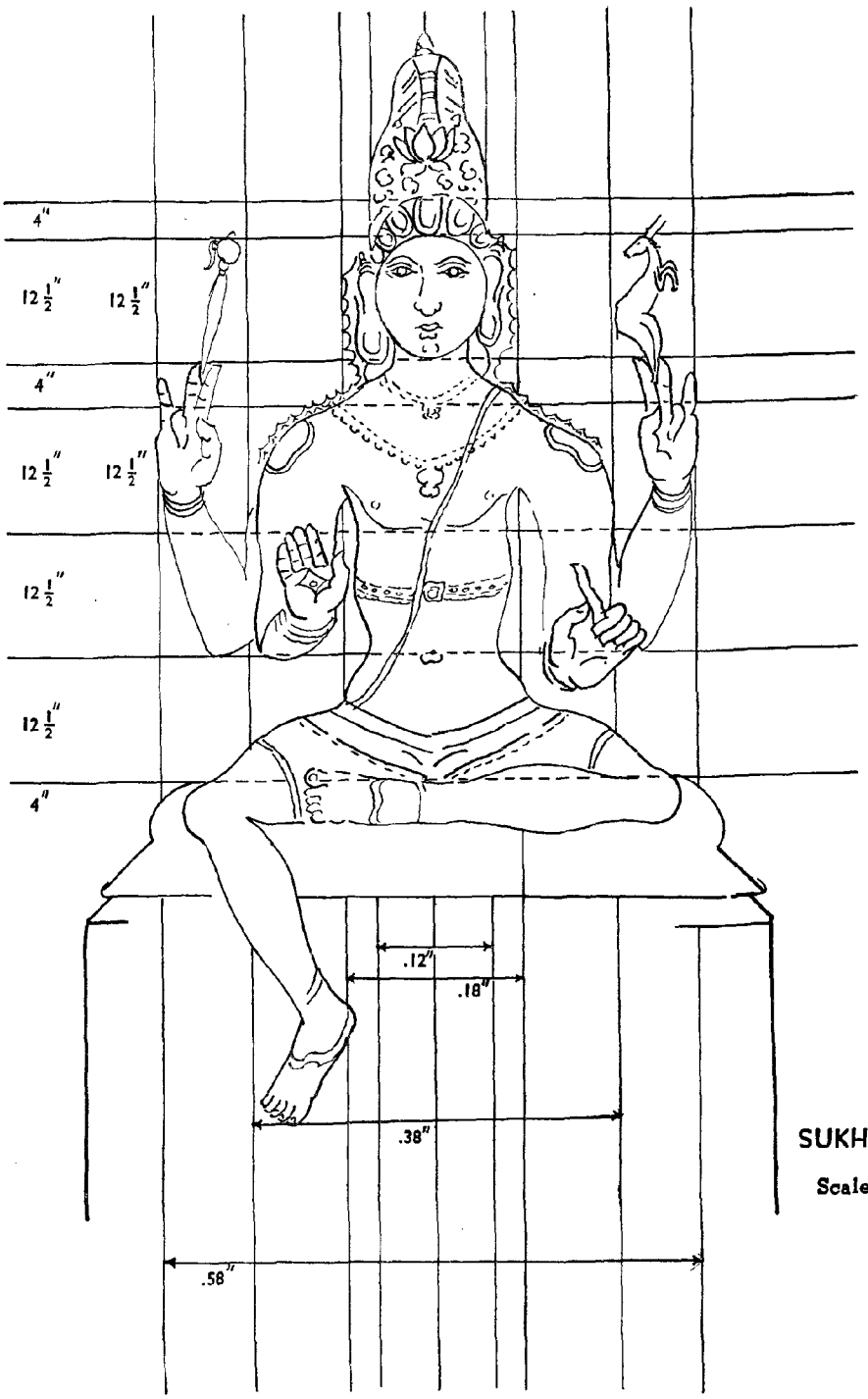
Sukhasanamoorty shall wear the upagrivam, kandaharam, charnaviram. Yajnopavitam, Keyuras, Kadakavalayas, angulis, Skandamala, udarabandanam, Katisutram, Urudama and padasaram.

According to the Kashyapa Silpasastram the madhya sutram should pass through the middle of the brows, the middle of the chest, the navel, the middle of the bony projection at the ankle. In the asana posture the left leg is folded over the pita and the right hangs below. The upper part of the body is $4\frac{1}{2}$ angulas more in height than the lower part.

Kashyapam prescribes the following additional measurements in addition to the uttamadasa tala measures.

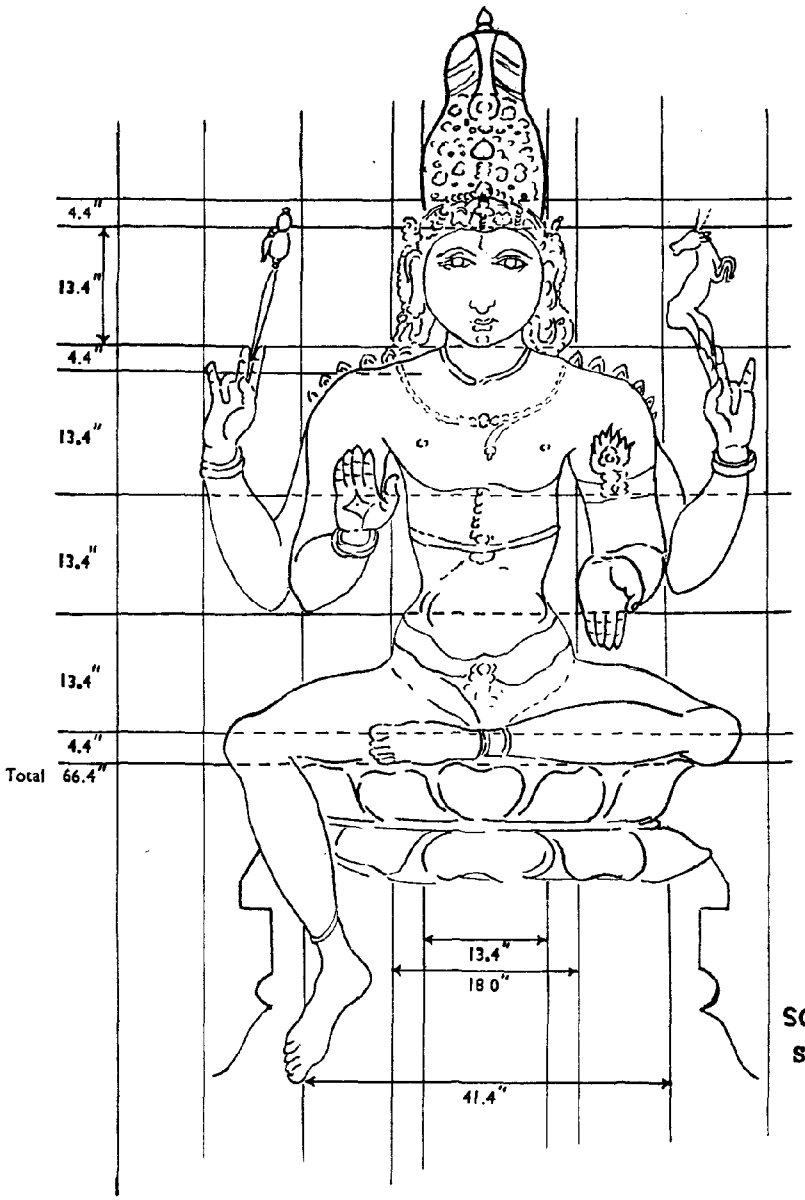
	Angulas
The distance of the right from madhya sutra	31, 30 or 29
The distance of the right ankle from madhya sutra	13, 12 or 10
The distance of the left heel from the madhya sutra where it touches the pita	2 or 3
The distance of the middle of the abhaya hasta from the madhya sutram	14
The wrist of the abhaya hasta shall be on a line with the navel	
Distance of the kadaka hasta from the Madhya sutra	15
Distance of the left wrist from the left thigh	2 or 3

The left hand should be either Kadaka hasta or Simha karna hasta. If the fingers of the palm are a little bent inwards it is called the Kadaka hasta. In the simha hasta the middle finger is bent inwards to touch the centre of the palm, the ring finger is half-bent and the other fiingers bent a little inward. The tips of the

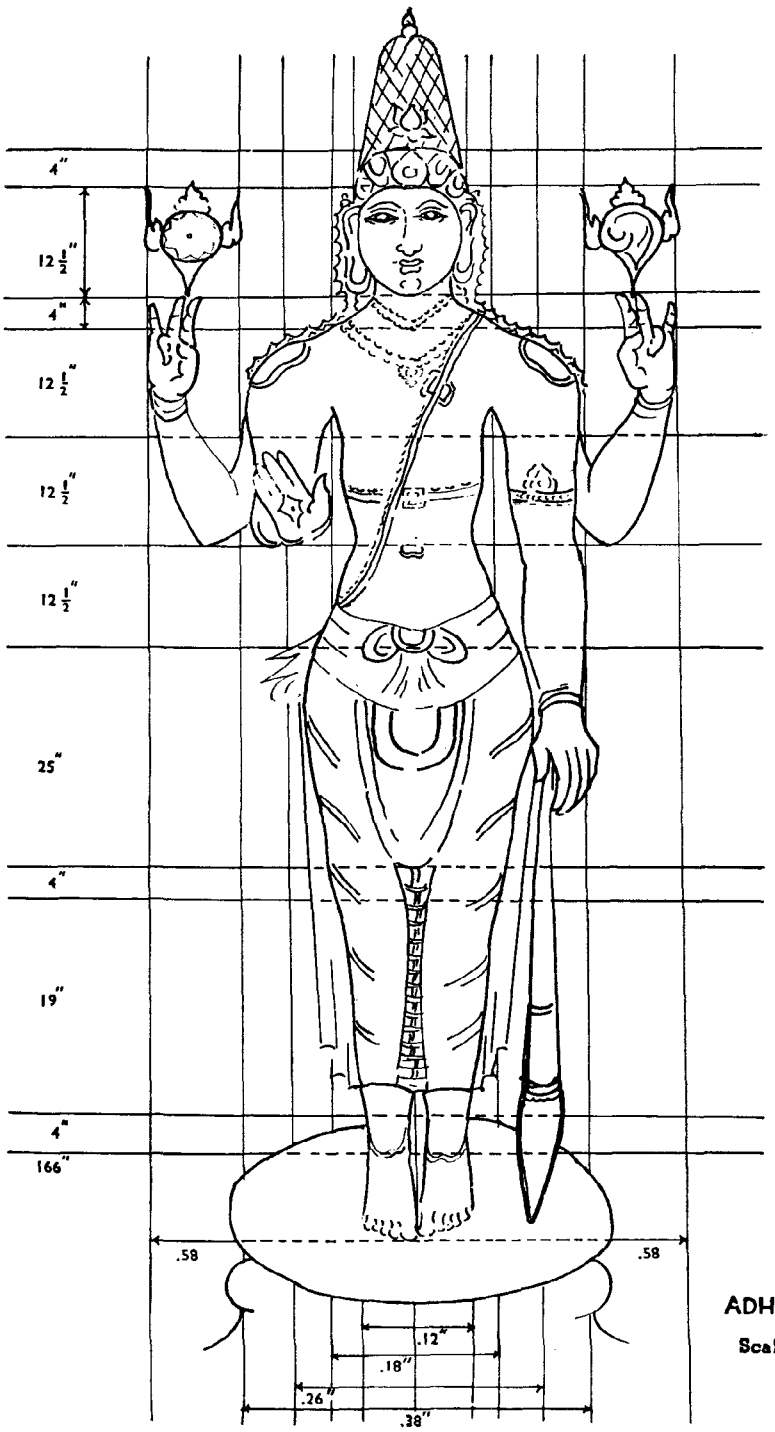


SUKHASANA

Scale 1" = 1/16"

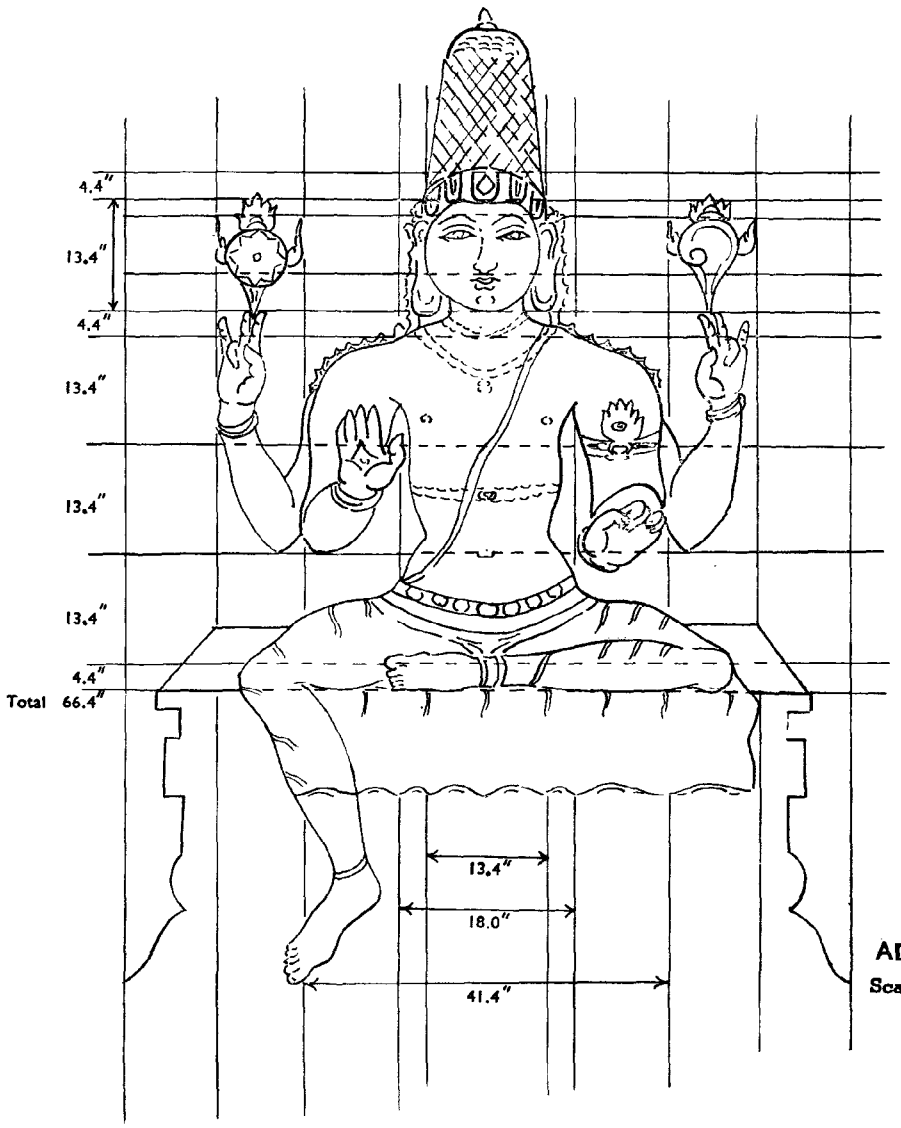


SOMASKANDA
Scale 3" = 4.4"

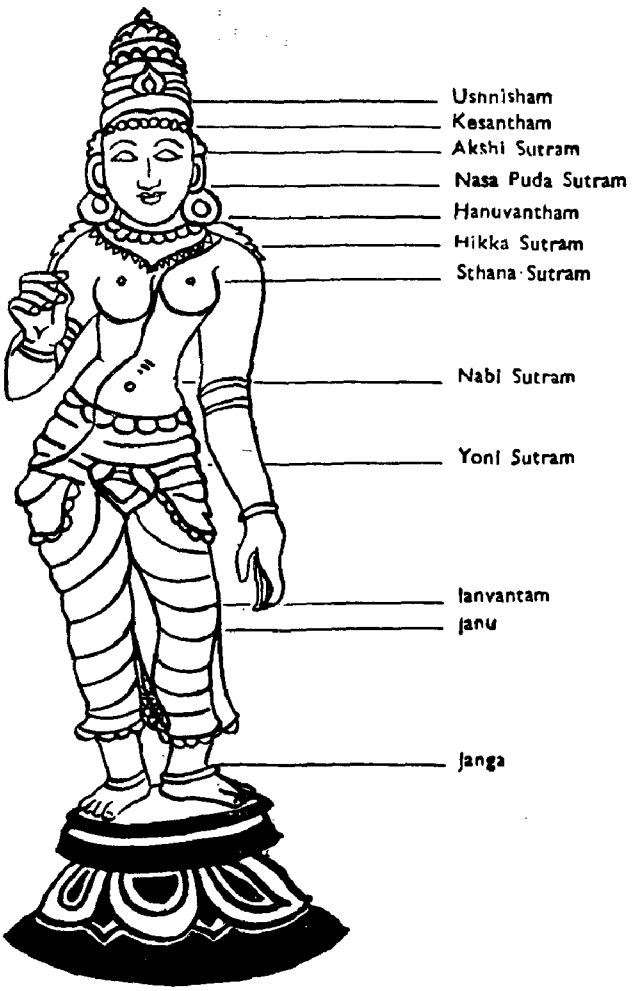


ADHIMURTI

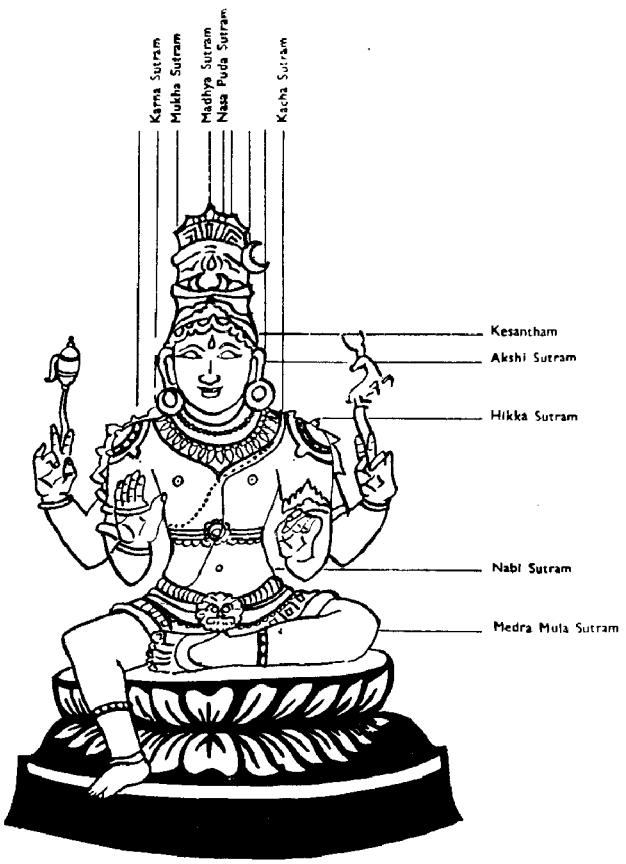
Scale 1" = 1/16"



ADHIMURTI
Scale 3" = 4.4"


Ushnisham
Kesantham
Akshi Sutram
Nasa Puda Sutram
Hanuvantham
Hikka Sutram
Sthana Sutram
Nabi Sutram
Yoni Sutram
Janvantam
Janu
Janga

DEVI


Karna Sutram
Mukha Sutram
Madhya Sutram
Nasa Puda Sutram
Kacha Sutram
Kesantham
Akshi Sutram
Hikka Sutram
Nabi Sutram
Medra Mula Sutram

GOWRI

Kartari mudras of the outer hands shall be on level with the Hikka Sutram. The ring and thumb fingers should be pressed on the palm and the little finger shall be bent a little. The other two fingers shall be erect and stretched.

	Angulas
The distance between the elbow and the Sroni (Hip)	5 or 6 or 7
Distance between the medra and the left ankle	5 or 6 or 7
Distance between the navel and the left nalaka	12 or 13 or 14
The height of the makutam	18 or 21 or 24

The width of the makuta should correspond to the width of the face. At top the width is less by 1/7 or 1/8 of the width at the bottom.

The height of the axe and the deer is 12 angulas.

2. **Somaskanda**

This is also a common image to be found in every Siva temple. Here Siva is found to be seated with Uma on his left with Skanda in between them. Siva shall be imaged according to the lakshanas laid down for sukhasana moorti. Gauri is at the left of Siva, in the seated posture, her right leg folded over the pita and the left hanging below.

Soma's head shall be a little bent towards Devi and so shall the head of Devi be a little inclined towards Siva.

Devi shall be imaged according to the Madhyama Dasa Tala - Gaurimanam. Her left hand shall be varadahasta and in her right shall be the Nilotpala flower. The left hand may be placed on the lap (in varada hasta). The right holding the flower shall be in Simhakarna mudra.

Devi's complexion is leaf-green. She shall wear all ornaments and shall be clad in red silk garments.

In another way of imaging, Devi's left palm shall rest on the pita outside the left thigh.

Space between Soma and Gauri on the pita shall be 6 or 7 or 8 angulas.

The image of Skanda shall be placed between the Deva and the Devi. The height of the Skanda image may be upto the level of Devi's neck; which is uttama or it may be upto the Sthanaksha sutra of the Devi in which case it is adhama. The distance between Hikka sutram and the Sthana sutram of the Devi shall be made into nine parts and corresponding to each of them a skanda image can be made. Of these nine, three are uttamas, three madhyamas and the three others adhamas.

The height of the Skanda image should be made into 64 parts and each part is an angula. One eighth of an angula is a yava. Of these

	Angulas
The height of ushnisha	1
From Ushnisha to Kesanta	1
From Kesanta to Netranta	2
From Netranta to the end of the nose	2
From the end of the nose to the chin	3
Height of the neck	3
From the hikka sutra to the middle of the chest	9
From the middle of the chest to the navel	8
From the navel to the root of the medra	7
Length of the thigh	12
Length of the knee	3
Length of the foreleg	12
From the ankle to the foreground	2
Length of the foot	10
Length of the upper arm	14
Length of the forearm	10
Length of the palm	4
Length of the middle finger	3
Length of the index finger and ring finger	3 4
Length of the thumb and the small finger	3
Width of the palm	4
Width of the forearm at the wrist	3
Width of the forearm at the elbow	4
Width of the back arm near the armpit	5
Width of the face	8
Width of the neck	7
Width between the armpits	13
Width of the chest	12
Width of the Sroni desa	12
Width of the hip	13
Width of the knee	6
Width of the thigh at the root	8
Width of the foream	4
Width of the ankle	3
Width of the heel	3
Width of the foot	3

The Skanda shall wear on his head Karanda makutam. He holds flowers in both hands or his left hand shall be varada hasta and the right either in the abhaya or simhakarna mudra holding either a flower or a mango fruit.

Skanda's image shall be made wearing only the Katisutra (Araignan) and other ornaments worn by a child.

The image of Skanda can be either standing or seated or dancing. Seated, it must have both legs

folded over the pita; standing, it must be samabhanga. If dancing the two legs must be a little bent and the space between the two knees must be shaped beautifully and imaginatively.

3. Chandra Sekhara

The legend is that when Siva was passing by the slopes of the Meru without any garment, the wives of the rishis fell in love with him and lost their chastity. The rishis wild with rage performed incantations and from their ceremonial grounds there came snakes, a krishnamriga, an Apasmara Purusha, a parasu, a tiger, a bull and several other things. These were set against to destroy Him by the Rishis. Siva took into his hands the black deer, the snakes and the parasu. The apasmara purusha was trampled under his foot, the skins of the tiger and lion he has worn as garments.

The above legend is given in many puranas and agamas.

Chandrasekhara moorthy, the image of Siva depicting him as emerging victorious from the above incident, is also to be found in almost all Siva temples. It is of three types :

1	Kevalamoorty	... without Gauri
2	Gauri Sahita	.. with Gauri
3	Alingana moorty	... in mutual embrace

Kevalamurty bestows mukti. Umasahita is abhayapradha.

Kevalamurty shall be in the Sthanaka posture. Umasahita shall be in the Asana posture; Alinganamoorthy shall be in the abhanga or atibhanga attitudes.

The moorty shall have to be imaged in the uttama dasatala measurements as in the case of sukhasanamoorty.

The kevala chandrasekhara shall be made in erect posture. The outer arms carry the axe and the deer. The palm shall be either outward facing or inward facing. The front arms are abhayahasta and Varada hasta.

Chandrasekhara shall have no makuta but wears jadamudi. At the right side of the mudi is the crescent moon.

Purva sutram for this samapada Kevala chandrasekhara moorty shall pass through the middle of the head, the lalata, the tip of the nose, the middle of the chin, the middle of the neck, of the chest and navel, the medra and the distance between the feet.

Prista sutram passes through the middle of the Krita, the midneck, the middle of the back and of the hips and the middle of the legs and feet.

Umasahita or Gaurisamyukta moorty shall be with Uma in the Samasana or Binnasana.

In the alinganamoorty, which is also called Gaurisamyukta, Siva and Gauri shall be in mutual alingana. Siva shall be embracing Gauri at the waist with his Varadahasta. And Gauri must be embracing Siva at the waist with her right hand; in her left she holds a lotus.

4. Vrishvahana moorty

Siva with or on his Vahana, the Bull.

Standing with the Vahana this idol may be made either in Samabhanga or Tribhanga attitude. In the Tribhanga attitude the right leg is planted firm and the left is in Kunjitabhava. In the asana posture Siva is seated on a pita over the bull or Nandi. One leg is folded and placed over the pita and the other hangs down below. The knee of the firmly planted leg shall come up to the level of Hikka sutram. Vrishavahana shall have either jadamakuda or Jadabandam or hanging jada. He shall wear garments in red and should be fully adorned. Uma shall be seated at the left of Siva (or in special cases at the right too). Devi's right leg is planted firmly on the asana and the left hangs below. She holds a lily in her right hand and her left is freely suspended (Lola hasta)

5. Gangadhara

Siva with Ganga on his head. This is another of the Sivamurtis to be commonly found in Siva temples in the south.

Gangadhara shall be in the Sthanaka posture. His hair is untied and loose and his head is bent a little towards Gauri. The image should be a personification of Ahankara. The outer left hand holds the deer and is raised upto the ushnisha. The right outer embraces the Ganga at his head. The left lower embraces Devi round her waist or is on her breasts. Uma's left leg is planted firm and the right is in Kunjita Bhava. Her left hand holds a flower and her right placed on the waist such that the three fingers are on the Sroni desa.

The image depicts the story of Bhagirata in Ramayana wherein Siva helps Bhagiratha in bringing the heavenly Ganga to earth so that the ancestors of Bhagiratha might attain salvation. The unwilling Ganga comes down with such fire that Bhagiratha invokes the help of Siva to intercede and save the earth

from destruction. Siva locks her up in his jada and is at once pacifying the wrath of the jealous Uma. The image should particularly bring out this expression.

6. **Ardhanari :**

A combination of Shiva and Sakti, the right half being Siva and the left being Uma. As to why Siva presented himself in this rupa, the legend runs that Rishi Bhringi was such an exclusive Siva-Bhakta that he would not worship any other god or goddess (even Sakthi) except Siva. At the time when all the rishis went to worship Siva at his abode in Kailasa, Bringhi alone would not worship Sakti and would only worship Siva. The angered Gauri cursed that all sakti would be drained out of Bringhi who accordingly became a skeleton covered by skin devoid of all flesh. Unable to support himself properly he was about to tumble down when the sympathetic Siva gave him a third leg to support himself. This attitude of Siva infuriated Uma who thereupon went to do penance to become one with Siva. The result of this penance and the grant of her wish by Siva is the Ardhanari form. The legend continues that Bhringi was not persuaded even after this to worship Shiva and Gauri together. He took the form of a bee, pierced through the figure of Ardhanari and came round only Siva.

Ardhanari, apart from its legendary significance is only an anthropoetic representation of the conception of Godhead as the principle of fertility manifest in the union of man and woman and worshipped otherwise in the form of Linga.

Ardhanari image can be of three types having either six arms or four arms or two arms.

The image shall be in Samabhanga attitude with the right leg firm and the left in Kunjita Bhava. The left half of the body is Parvathi and the right half is Siva.

In the two-armed image the left hand holds a flower and the right is Kadakahasta.

In the four armed murty the outer left and right hands hold a flower and the trident respectively, the front right is varada hasta and the front left is placed on the bull. In the six-armed murthy the three right hands have the flames, the axe and the varada mudra respectively and the two left have a flower and the kadakamudra. The third left is placed on the bull.

The left half is bedecked with ornaments belonging to Gauri and the right with those belonging to Siva. The right eye shall be fierce and the left calm and graceful. The dress at the waist shall descend in the right upto the middle of the thigh end, in the left upto the ankle.

7. **Hariharartha:**

An image of Siva in which the left half is Vishnu and the right Siva.

This moorty shall be in the samapada attitude standing erect. The right half of the body shall have Rudramsa and the left half shall have Vishnuamsa. The front right hand shall have abhayamudra and the front left shall have Kadakamudra and shall be touching the lap. In the outer right hand shall be the deer and in the outer left the disc. On the left side of the head shall be the Krita and on the right jada and the crescent. The right eye has a ferocious look and the left shall be calm and graceful.

8. **Kalyana Sundara :**

This image depicts Siva wedding Parvati, daughter of Himavan.

Siva's left leg is planted firm and the right is in Kunjitabhava. His lower right hand holds Gauri's right hand and lower left is Varadahasta. In the outer arms he holds the axe and the deer. He wears the jadamakudam and is bedecked with all jewels. At his right stands Gauri holding a nilotpalam in her left hand and her right held lightly by Siva. Gauri is arrayed in marriage attire and her head is a little averted in shyness.

In front of them Brahma may be imaged as doing homa. He has four arms and four heads. In his outer arms he holds the pitcher and the rosary. In his front arms he holds the utensils with which to perform the homa.

Vishnu may be imaged to the north of the homakundha. In his outer arms he carries the disc and the conch. In his front hands he carries a pitcher of water in readyness to give away the bride to Siva (Kannikadanam).

9. **Pasupada :**

The image of Siva as Pasupada is of two types; the saumya and the rudra.

The Saumya Pasupada shall be either in the asana or sthanaka posture. He shall have three eyes, four arms and a stout torso. The left outer hand holds the Rosary and the left front is varada hasta; the right outer shall have the trident and the right front shall be the abhayahasta. In other respects he shall be like the Chandrasekhara.

Images of the Rudra Pasupada should not be made in stone or metal. The descriptions are meant only for meditation.

10. Dakshinamurty:

Image of Siva as a teacher of Yoga, of Vina, of Jnana and as an expounder of the Shastras. The first is called the Yoga Dakshinamurthy, the second is called the Vinadhara and the last as Vyakyanamurti.

The image of Dakshinamurty shall be made in the asana posture, The left leg shall be folded over the pita such that the nalaka shall be below the front portion of the right thigh. The right thigh shall be over the pita and the right foreleg hangs down below.

The front right hand shall have jnana mudra and the back right shall have the rosary. The front left shall be either Varada hasta or shall carry a Danda. The left forearm shall be placed over the left knee. The back left hand shall carry either fire or serpent.

The locks of hair shall either be loose or tied up into a jadabanda. At the left side of the jada shall be the serpent and the umattam flower. At the right shall be the crescent. The murty shall have a smiling face, shall wear white clothes, white Yajnaopavitam. He shall wear makara kundala in the right ear and shankapatra in the left.

The right foot may be placed on Abasmara who shall be playing with the serpent.

The same murty if with the left knee a little raised up holds in the two front hands a vina shall be called the vinadhara.

11. Bhikshadana:

It is said that in the forest of Taraka even children and women took to austerities forgetting the worldly ways of living. To make them feel the need of the worldly ways, Siva started out to beg in their quarters. For this purpose he became a black ugly looking being and naked he went into their midst. This appearance immediately drew the attention of all the inhabitants and through his maya the residents of this forest took to all sorts of bad ways of this world. Siva depicted in the form of a beggar is known as Bhikshadana.

This murty shall have padukas on his feet. The left leg is planted firm and the right is stepped a little forward as in walking. Either the locks of hair are loose or tied up in a bunch. There shall be in the head the chandrakala (the crescent) and the skull.

In the two outer hands shall be the damaru and the peacock feather. The lower left hand shall have the varadamudra and the lower left shall carry the deer.

The image has serpents at the head, the neck, the arms and at the waist.

12. Kankalamurti:

Kashyapa gives the following account of the origin of Kankalamurty.

To save the world from the tyranny of Thrivikrama, Siva went as a beggar to beg for the flesh and the blood of Trivikrama. When the latter offered it he immediately became a corpse. To give him moksha, Siva has worn the corpse as an ornament.

According to another puranic legend, however, Siva removed the fifth head of Brahma in a moment of anger and thence was pursued by Brahmahatti dosh. To expiate the greatest sin on earth, the sin of one Brahmin killing another Brahmin learned in Vedas and Sastras (Dhruna) he begged his way to the abode of Vishnu to seek the latter's advice. At the entrance he was forbidden entry by Visvakshena and in a fit of rage Siva killed him too. Now one Brahmahatti dosha joined another and the sin became the greater. Vishnu advised Siva to carry the corpse and proceed to the holy theertha at Kasi. When Siva proceeded thither, his pursuers left him, being afraid to enter the abode of virtue and bathing in the ever holy Ganga, Siva found himself rid of all sins.

In appearance this murty shall be like Bhikshadana. The left leg is firm and the right is stepped out as in walking. There shall be padukas on the feet. It shall have the beggar's bowl in the hand (front). In the outer left Kankala holds the trident and the peacock feather. To the front of the trident the corpse (Kankala) lies suspended. Kankala wears in the right ear Sankhapathra and in the left ear makarakundalam. The locks of hair either hang loose or are tied up into a jadamandala. At the right of his hair he wears the crescent and at the left the serpent. He wears a garland of skulls around his neck. Serpents are to be found at the waist around the wrist and the elbow. He shall wear a sword at the waist.

13. Chandesanugraha:

An anugrahamurty of Siva depicting him as bestowing grace on Chandikesa.

This image is like that of Somaskanda except that the lower right hand is not in abhayamudra. It is instead varada hasta and the left is Kadakahasta.



BRONZE ICON OF SIVA AS BIKSHADANAMURTI

Gauri is at the left side of Siva and both Siva and Uma are seated on padmapita without Skanda in the middle. Below them Chandikesa stands with palms joined in the Anjali pose over the chest.

Besides Chandesanugrahamurty, there are other anugrahamurtis mentioned in the agamas and silpa-sastras such as Nandisanugraha, Vignesanugraha and Ravananugraha.

B. Rudramurthis of Siva:

Tripurantaka:

According to the lore, the three asura brothers Tarakakshan, Kamalkshan and Viddhuin Mali obtained as a result of hard penance the gift of indestructible flying fortresses from Brahma. The three fortresses made of gold, silver and iron respectively could not be destroyed by the power of any single god. Thus endowed they became a menace to the Devas and caused the latter endless troubles. The devas finally had to approach Siva to get rid of this asura threat and surrendered half their power to Siva to make him more powerful than he was. Armed with this power, Siva set out to destroy the demon kings. Meru became his bow, Vishnu the arrow, earth became his chariot and the four vedas became the wheels of the chariot. Brahma was the charioteer. But when the enemy was sighted Vishnu in a freak of ahankara thought himself to be all important in this war. Perceiving this the immortal God laughed and in his laughter the three fortresses were reduced to ashes much to the humiliation of Vishnu.

Tripurantakamurti depicts Siva set out to destroy Tripura.

Tripurantaka image can be made either in the Abhanga or Samabhanga or Atibhanga attitude. Tripurantaka made in the Abhanga attitude is according to Kashyapam, uttama; that in Samabhanga is madhyama and the atibhanga Tripurantaka is adhama.

Siva's left leg is held in Kunjita bhava and the right is firmly planted. The right lower hand is at the nabi level with the Simhakarna mudra holding the middle of the arrow. The length of the arrow is 21 angulas. Its thickness shall be the thickness of the small finger.

The hand holding the bow is raised upto the level of the armpit. It is slightly bent because of its grip of the bow.

The length of the bow shall be 100 angulas.

The outer arms hold the deer and the axe and are raised upto the Hikkasutram.

Such Tirupurantakamurtis can be of seven types.

In the first, Siva as Tripurantaka is with jadamudi, bedecked with all jewels and Gauri is at his left side.

In the second type, Siva's left leg is planted firm over Abasmarapurusha.

In the third the left leg is planted firm and the right is held in Kunjitabhava.

The same murty with the left leg planted firmly over Abasmarapurusha constitutes the fourth type of Tripurantaka murty.

In the fifth type the murty has four arms and the left leg is not placed over Abhasmaram.

In the sixth type, Tripurantaka shall have eight arms. In his right hands he holds the arrow, the axe, the sword and the Vajra respectively and his left hands have the bow, the shield and the Vismaya mudra.

Siva with ten arms constitute the seventh type of Tripurantaka. The right hands have the arrow, the disc, the trident, the axe, and the Vajra and the left ones have the bow, the sword and the shield. The remaining two hands are in Sooci and Vismaya pose. This murty shall be in the Atibhanga attitude.

2. **Gajasamhara**

A form of Siva depicting him as emerging victorious from his battle with the Gajasura.

Gajasamharamurti can be of two types having either four arms or eight arms.

The four armed murty has in his right hands the pasam (rope) and the elephant skin and in his left the tusk and the elephant skin.

The eight armed murty has in the left four hands the tusk of the elephant, the skull, the elephant skin and Vismayamudra. In the four right he has the trident the damaru, the rope and the elephant skin.

Siva's left leg is over the head of the elephant and should be shown over his makuda. On both sides the legs of the elephant are shown with imagination.

The body of the elephant is made to look like a prabhamandala.

Siva's left foot presses on the head of the elephant, his right leg is folded back as if about to kick.

Parvati stands at his left, her face reflecting fear.

3. **Kalasamhara**

The story of Markandeya is well known. The childless Mrikundu prayed for a son and Siva gave him the

choice of having either one intelligent and devoted son with only sixteen years of life or many stupid sons with long life. Mrikandu with his characteristic insight preferred the former and so came Markandeya to be born. With congenital devotion and intelligence fortified by his father's knowledge of the vedas and shastras Markandeya's love for Siva knew no bounds. And at the hour of Yama's approach when he was sixteen, Markandeya took refuge in none other than Siva, and embraced the linga that he was worshipping. Siva, the the legend runs, sprang up from the linga and by keeping Yama at bay saved his devotee, and Kala blessed Markandeya to be ever sixteen.

The moorty's right foot shall be on the padma pita and the right leg firm and erect. The left is lifted in front.

The murty should have a beautiful face, three eyes and four or eight arms. In the four - armed type, the right front shall hold the trident, raised up to the level of the neck. The left front holds the axe or is the varadahasta. The back left has the vismayamudra.

In the eight - armed type the right hands hold the the trident, the axe, the vajrayudha and the sword and the left hands have the shield, the damaru, the suci and Varadhamudras.

And in front of Siva shall be Yama with two legs, two arms, protruding teeth, rope in palms which are folded in Anjali pose over the chest and his face reflecting sudden fright.

Other terrible aspects mentioned in the agamas and silpasastras and to be found, not very commonly in some temples are:

4. The Aghoramurty
5. The Bhairavamurty
6. The Veerabhadramurty
7. The Sarabhamurty, and
8. The Kamantakamurti

C. Nritta Murtis of Siva:

It is said that in the forest of Taraka dwelt multitudes of heretical rishis, the followers of the Mimamsa. Thither proceeded Siva to confute them, accompanied by Vishnu, disguised as a beautiful woman, and Adisesha. The rishis were at first led to violent dispute among themselves, but their anger was soon directed against Siva and they endeavoured to destroy him by means of incantations. A fierce tiger was created in sacrificial fires which rushed upon him, but Siva seized it gently and wrapped its skin over his body like a silken cloth. The sages then produced a monstrous serpent which Siva seized and wore it about his neck like a garland. Then he began to dance, but there pounced upon him at last a monster in the shape of a malignant dwarf, Muyalaksa. The God pressed the tip of his toe and broke the creature's back. Upon him Siva resumed his dance.

So runs the lore as to why Siva danced. But the philosophers esoterically explain the dance of Siva as symbolising the five acts of the Lord, viz.

1.	Creation	Srishti
2.	Maintenance	Sthithi
3.	Destruction	Samhara
4.	Keeping in ignorance and bondage	Tirobhava
5.	Blessing for release from bondage	Anugraha

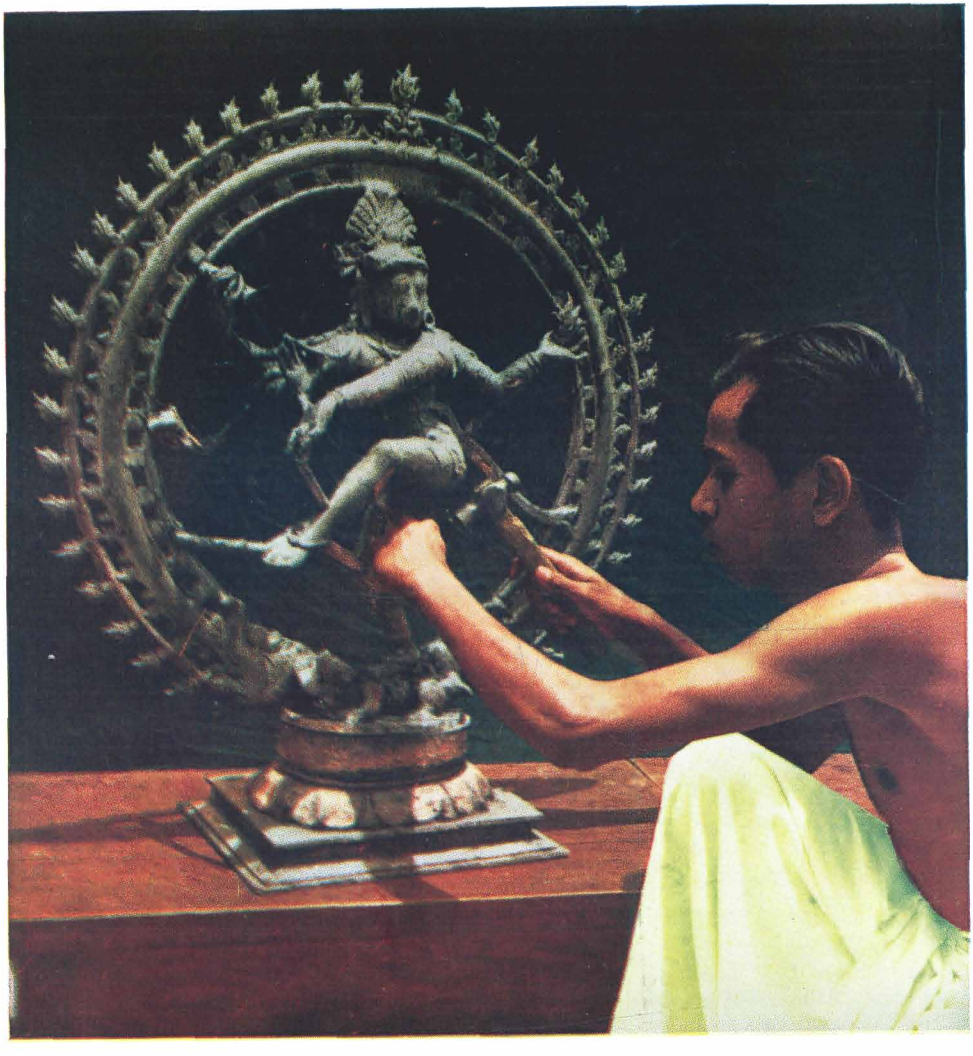
In the Nataraja image, the arm holding the Damaru is said to suggest creation. The arm showing an upraised flat palm (abhaya hasta) symbolises protection. The arm with the flame stands for destruction. The foot planted on Abasmara stands for binding the soul in ignorance and bondage. And the upraised foot suggests deliverance.

Siva is said to have danced seven dances at seven times and at seven different places. * These are:

1. The Ananda Nadanam venerated by the saints at the Kanakasabhai
2. The sandhya Nadanam executed in the evening at the Racata sabha
3. The Gauri Tandavam to satisfy his spouse Gauri at the Sirsabha
4. The Tripura Nadanam, full of poetic beauty, at the Chitra Sabha
5. The Kali Tandavam with Kali at the Ratna Sabha
6. The Muni Tandavam at the Tambra Sabha
7. The sankara Tandavam executed in the centre of the Universe at the time of the deluge

Kashyapam writes that the dance of Siva is of 18 types and gives descriptions of nine types reproduced below.

Natarajamurti should be made in uttamadasa tala and the height of the murty is 120 angulas. It shall be in the atibhanga attitude.



A STHAPATHI GIVING THE FINISHING TOUCHES TO A BRONZE ICON OF NATARAJA

The Purva Sutram should pass to the right of the middle of ushnisha to the right of the middle of the Laladapatta, through the extreme corner of the right eye through the outer tip of the right nostril to the right of the chin through the middle of the neck, the middle of the navel, through the middle of the left thigh and the centre of the projection of the ankle of the firm foot.

The following plumb line measurements are set forth in the Kashyapam about the making of the Nataraja image.

	Angulas
Space between Purva Sutram and forehead	4½
Space between long projection at the ankle and Purva Sutram	12
Space between middle of neck and Purvasutram	7½ or 9½
The Purvasutram shall be touching the upper part of the belly	
The distance between the Purva Sutram and the tip of the right hand in dance posture	16½
Between Purva Sautram and the tip of the left hand	4
Between Purva Sutram and the hand holding the agni	38 or 41

The tip of the middle finger of the hand holding the agni should be raised up to the level of the Hikka Sutram. The agni should either be in the centre of the palm or at the top of the finger. There should be 3, 5 or 7 flames in the agni.

The distance between the purvasutra and the outside of the wrist of the outer right hand is 28 or 30 angulas.

The wrist of this hand should be raised upto the level of the neck. The fingers must clutch the middle of the damaru and be raised up to the level of the ear. The little finger of this hand must be bent in. And the index finger must be held erect.

Or the leather strap that is attached to the middle of the damaru should be shown over the middle finger and the ring finger may be over the damaru.

	Angulas
Length of the damaru	8
Width at the end	5
Width at the middle	3

It must have two rings to which should be attached a leather strap.

Distance between the small finger of this hand and the ear is 40 angulas.

The right lower hand must have the abhayamudra. The distance between the purvasutra and the middle of this palm is 24 angulas.

The tip of the middle finger of this hand should be upto the hikkasutram. The mid-finger of the abhaya-hasta should show the serpent ring. The length of the serpent is one and a quarter times the circumference of the middle of the forearm. And the hood must be raised 12 angulas over the length. The width of this hood is 7 angluas. Its thickness is 1 angula.

It must be looking at the front with a long held-out tongue.

Distance between the purvasutram and the end of the hip at the left is 9 angulas.

Distance between the purva sutram and the knee of the raised leg is 10 or 9 or 8 angulas.

The reduction in the length of the Kunjita pada due to the bend is 12 or 11 or 10 angulas.

Distance between the knee of the raised leg and the knee of the planted leg is 3 or 5 or 14 angulas.

Distance between the knee of the planted leg and the heel of the raised leg is 34 or 35 angulas.

The top of the raised knee should be horizontal to the navel.

The distance between the wrist of the dola hasta to the knee of the raised leg is 10 or 9 angulas.

The distance between the dola hasta and the abhaya hasta is 10 angulas.

If the jada is left hanging it must have 5 or 6 or 7 or 9 or 11 locks. Its length can be between 32 and 61 angulas.

The Nataraja image must particularly have on the jada pushpaharas (flower garlands), serpents, skull etc.

The image of Nataraja must be besmeared with ashes, must have a smiling face and must be with haram and yagnopabitam. The tiger-skin garment must descend upto the middle of the thigh. Both feet have on them the padasara and the image must be bedecked with all the jewels.

The right leg slightly bent and placed on the back of the Apasmaram, the left leg lifted up turned towards the right and kept across it.

At the left of the dancing Siva is Uma who must be imaged according to the Madhyamadasatala Streemana.

II Type

Nataraja moorty of the second type is called the Janhaviyudham. i.e. having Ganga at his jada. She should be imaged according to the attributes laid down in the Streemana. Her two hands must be folded over her chest in the anjali pose. Her height shall be 16 angulas.

III Type

In this type the left leg is planted over Abasamaram and the right is raised in dance posture.

IV Type

In the fourth type the jada is not bound. But the locks are loose and spread out as in the whirling motion.

V Type

In this type the right toe is raised upto the ears and the left is slightly bent. Siva in this type has eight arms. In the four left hands are the skull, the agni, the serpent and the bell respectively. In the three top right hands are the trident, the damaru and the serpent. The other right is abhaya hasta.

VI Type

In this type, Siva has sixteen arms and Gauri is at his left. The raised leg is lifted by two hands placed around the neck. In the eight right hands are 1. Abhayamudra 2. Trident 3. Serpent 4. Parasu or axe 5. Damaru 6. Dwajam or flag 7. Vedalam and 8. Suchimudra. In the eight left hands are : 1. Agni 2. Gajahasta 3. Shield 4. Vismayamudra 5. Bell 6. Skull 7. Small knife 8. Suchimudra. In other respects, this is like the previous type.

VII Type

In this type Siva has three eyes and eight hands. His locks are spread out. His slightly bent left leg is pressed over Abasmaram. Abasmara's head is at the left of Siva. In his three right hands Siva holds the Trident, the Serpent and the Damaru. The other right is Abhaya hasta. Two of his left hands have the skull and the agni. One left is Gajahastam and the other is in Vismaya Mudra. Gauri is at his left.

VIII Type

In this type the image has six arms. In two of the right are the damaru and the trident. The third right is abhaya hasta. In one left hand is the skull. The second left is in Vismayamudra and the third left is Gajahastam.

In other respects, it is like the previous type.

IX Type

In this Nataraja has four hands and three eyes. In the two back hands are the agni and the damaru. The front right is abhaya hasta and the front left Gajahasta His right leg is on the pita (without abasmara) and his left is raised in a dance posture.

The nine types of images of dancing Siva described above do not however represent Siva in various dance postures. They all picture him as rendering the same piece which Bharata's Natya Satra would identify as Bhujangatrasa. There are other images of dancing Siva to be found in metal or stone in temples here and there in other dance postures, viz. the bronze figure at Nallur of Siva in the Chaturam pose. Other forms of dancing Siva known are Katisama, Lalita, Lalata Tilaka, Chaturam and Talasamphotita.

Ganapathi

Ganapathi is the eldest son of Siva. He is considered by some as the supreme God. He has an elephant's head over human body. His image, according to the silpasastras should be made in Uttama Pancha Tala. His Vahana is rat. In the ordinary form he has two pairs of arms, the upper holding the gada and the noose and the lower his broken tusk and a rice cake on right and left respectively. The elephant trunk is either turned to the right, in which case the image is called Valanchuli Vinayagar or to the left when it is referred to as Idanchuli Vinayagar. In one of his forms known as Mahaganapati he has five pairs of arms carrying various saivite emblems. Though said to be unmarried one of his forms in which he is represented as seated with his consort on his left knee is known as Saktiganapathi.

Subrahmanya

He is the second son of Siva. As a child he is represented with one pair of arms, either standing with lotuses or dancing. As Dandapani he is represented with a VEL in his hand bestowing abhaya. In this form, he is portrayed as wearing nothing but a loin cloth. He is also known as Shanmuga in which form he is portrayed as sitting on his vahana, the pea-cock with six heads and twelve hands and with his consorts. —Valli and Deivasena, standing on either side.

Images of Cult Deities - Vishnu

Adi murti

We have seen already that Sayana, Asana and Stanaka are the three postures in which Adimurthi,



BRONZE ICONS OF HANUMAN, SITA, RAMA & LAKSHMANA

the image of Vishnu can be made. In the Sayana posture, he reclines over a serpent couch. In the Yoga Sayana posture, he shall have only two arms and be without his spouses. In all other Sayana postures, he is with Bhudevi and Sri Devi and Brahma.

The Asana and Sthanaka murtis of Vishnu are innumerable. In each temple, he is called by a different name and is differently imaged. Generally, he has a Discus in the right outer arm and Conch in his left outer. He wears a Kirita on his head and Kundalas in his ears. He shall be wearing all other ornaments. such as the Keyura, Kadakavalaya, Udara Bandhana, Katisutra and Kadi Bandana, Hara Channa Vira, Vanamala, Yajnospavita, Padasaras and Angulis. The garment at the waist descends upto the ankle. He may or may not be having Gadha in his left front hand. Asana and Sthanaka pratimas of Vishnu shall be in the Samapada attitude. Lakshmi and Bhudevi shall be generally at his two sides.

In the Varadaraja image of Vishnu, the lower right hand is in the Abhayamudra and the left either holds a mace (Gadha) or is in Katyavalam bitamudra.

In the Srinivasa form, the lower right hand is Varadahasta and the lower left is placed against the thigh to show that "the ocean of Samsara is only knee deep to his devotees."

In the Panduranga form he has only two arms. The hands either rest on the hip or hang beside his hips.

In the Lakshmi Narayana form, Lakshmi is seated on Vishnu's left lap, supported by his left arm.

In the Vaikunta Natha form Vishnu is seated on a serpent couch.

The Avataras of Vishnu

Matsyavathar

The part of the body above the waist is human and below the waist it is fish-like. Vishnu shall have four arms with Discus and Conch in the upper ones. The other two are Abhaya and Varada hastas.

Kurmavathar

Brahmeeyam lays drawn the following measurements for imaging Kurmavatar.

	Angulas
Head	2
Ears	4
From face to the middle of the chest	2
From the middle of the chest to the navel	2
From the navel to the medramoola	3
The height of the legs	1

Varahavathar — The boar incarnation

The head shall be the head of the boar.

Brahmeeyam prescribes the following measures :

	Angulas
Total height of the image	102
From the middle of head to Mastaka	4
From the mastaka to the Netra eyes	4
From Netra to nose end	11
From the end of the nose to the end of the chin	4
Height of the neck	4
From the neck to the middle of the chest	12
From the middle of the chest to the navel	12
From the navel to the Medramoolom	12
The height the thighs	26
The height of the knee	4
The height of the foreleg	26
From the ankle to the ground	4
The length of the foot	17
From the middle of the eye to the middle of the brow	2
Distance between the two eyes	3
Length of the eye	3
Distance between the eye and the ear	7
From the root of the ear to the chin	7
The width of the ear	$2\frac{1}{8}$
The length of the ear	$4\frac{1}{4}$
Thickness of the ear	$\frac{1}{8}$
Width of the face	11
Width of the eye	1
Width of the nose at the bottom	7
Width of the nose at the middle	6
Width of the nose at the root	$4\frac{1}{2}$
Width of the nostril	1
Width of the neck	9
Width of the armpit	9
Length of the backarm	26
Length of the elbow	2
Length of the forearm	20
Length of the palm	7
Length of the middle finger	6
Length of Index and ring fingers	5
Length of the small finger and the thumb	4
Width of the palm	6
Width of the wrist	3
Width of the elbow	$6\frac{3}{4}$
Width of the forearm	$5\frac{1}{2}$
Width of the backarm	8
Width between the shoulders	39
Width between the armpits	21
Width at the waist	$15\frac{1}{2}$
Width at the hips	$19\frac{1}{2}$
Width at the thigh	13
Width at the knee	9
Width at the foreleg	7

Width at the Nalaka	(Angulas)	4⅜
Width of the feet in the middle	,,	5¼
Width of the feet at the front	,,	6½

Varahamoorty has four arms in three of which he shall hold Sankha (conch) Chakra (Disc) and Gadha. The other hand is abhaya hasta. He wears Makara kundalas in the ears, Keyura and Angathem and Udara-bhandana. He has three Kadaka Valayas on the forearm and Channavira across the torso.

With Sri Devi, he shall be in the Asana posture; alone or with Sri Devi, and Bhu Devi he shall be in the the Sampade Sthanaka posture.

Narasimha

Lion incarnation of Vishnu. Brahmeeyam lays down the following measurements:

	Angulas
Total height	120
Height of Ushnisha	3
From Kesanta to Netra Sutra	6
From the netra sutra to the end of nose	4
From the end of the nose to the mouth	3
Hips	2
From the Akshi sutra to the brows	3
The width of the forehead	9
Distance between the eyes	2¼
Width of the face at the netra sutram	12
Width of the mouth	10
Width of the opening of the mouth	4
Width of the nose	2½

This murty shall have four sharp teeth jutting outside. Their tips shall be bent like the crescent of the moon.

Length of the tongue	(Angulas)	6
Length of the ear	,,	3½
Width of the ear	,,	2½

The torso and the limbs shall be imaged according to the measurements laid down for Uttama Dasatala-murtis.

Narasimhamurty has a fierce face and eyes radiating fury. He has four arms, the back hands holding the conch and the disc. The front arms have the Gadha and the Padma (Lotus). He wears Udara bandhana Katakas, Keyuras, Haras, Channaviras, Yagnopavitha Kejja and Padasara.

With Lakshmi on his lap Narasimha is in the Asana posture seated on a throne. Without Lakshmi he is in the Hastasana or Urdwajanu postures or in the sampadsthanaka.

Vamana

The dwarf incarnation of Vishnu. He is represented with an umbrella, carrying a copy of the Vedas in his right hand and Kamandala in his left.

According to Brahmeeyam

The total height shall be 64 angulas of	*Angulas*
which the length from Ushnisha to Kesanta	1⅛
From Kesanta to Akshisutram	3⅞
From the Akshisutram to the end of nose	4
From the end of the nose to the chin	3⅞
Height of the neck	4⅛
From the Hikka Sutram to the middle of the chest	7
From the middle of the chest to navel	7
From the navel to the Medramoolam	7
The length of the thigh	12
The length of the knee	2
The length of the foreleg	12
From the ankle to the ground	2
Length of the foot	10

Dasarata Rama

Vishnu as Rama is imaged as a man holding an arrow in his right hand and the bow in his left. He is generally imaged with Lakshmana who stands at HIS right and Sita, at HIS left.

The measurements laid down in Brahmeeyam are:

	Angulas
Hight of Ushnisha	1¼
From Ushnisha to Kesanta	3
From Kesanta to Akshi Sutram	4¼
From Akshi Sutram to the end of the nose	4¼
Height of the neck	4¼
From the Hikka Sutram to the middle of the chest	11¾
From the middle of the chest to the navel	13
The length of the thigh	25¾
The length of the knee	4½
The length of foreleg	25¾
The height of the ankle from the ground:	4¼
Length of the back arm	26
Length of the elbow	2
Length of the forearm	20
Length of the palm	7
Length of the middle finger	6

Rama wears Kirita on his head, Makara Kundalas in his ears, necklace called Srivatsam and Indra-chandam over his chest, an ornament called Angatham over his back arm, three katakas over his forearm near the wrist and Channa vira and Udarabandanam. He has rings on his fingers and Padasaras on his feet.



A BRONZE ICON OF DURGA

Lakshmana's image is made in Adama Dasa Tala. Sita's in Navarta Tala.

Krishna

The measurements depend upon the age of Krishna. Upto three years, Krishna is imaged in Pancha Tala (64 angulas) between three and six, in shat Tala (72 angulas), between six and nine years in Sapta Tala (84 angulas), between nine and twelve in Ashta Tala (96 angulas) and between 12 and 15 Krishna is imaged according to Nava Tala measurements.

Measurements of Uttama Pancha Talam:

	Angulas
Total height	64
Height of Ushnisha	2
From Kesanta to Akshisutram	$2\frac{7}{8}$
From Akshi sutram to the end of nose	$2\frac{7}{8}$
From the end of the nose to the chin	$2\frac{7}{8}$
Height of the neck	2
From the hikka sutram to the middle of the chest	7
From the middle of the chest to the navel	7
From the navel to the medra	6
Length of the thigh	13
Height of the ankle from the ground	4
Length of the knee	$2\frac{1}{2}$
Length of the foreleg	13

Uttama Shatthalam

Total height in Shat Talam	76

Uttama Sapta talam

Total height in Saptatalam	88

The following are various forms of *Krishna*:

Vatapatra Sayi Krishnan as a baby lying on a banian leaf and holding his toe in his mouth.

Santanagopal — the same but without the leaf.

Yasoda Krishnan — Krishna as a child on the hip or lap of his mother Yasoda.

Balakrishna—Krishna as a child crawling and dancing.

Navaneetha Nrityam: In this Krishna is conceived of as a child with a ball of butter in one palm and one arm extended at the side as in a circular movement.

Kaliya Krishna — Krishna as a five year old boy subduing the serpent king Kaliya.

Venugopal — Krishna in his teens playing flute.

Gopalakrishna — As a youth his right hand holding a shepherd's smock and his left elbow projecting to rest on his consort's shoulder.

Images of cult Deities: Shakthi

Mahalakshmi—As Mahalakshmi, Sri Devi is worshipped independent of Vishnu. Her image is then made according to Madhyama Dasa Tala Lakshanas. She has two pairs of arms. She is imaged as being in the Sthanaka or Asana Posture. Her lower right hand is in Abhaya pose and lower left in the Varadha pose. Mahalakshmi holds a mace in her upper right hand and a bael fruit in her upper left.

Gajalakshmi

Lakshmi is in the asana posture flanked on either side by an elephant holding in its trunk a garland of flowers. Gajalakshmi has two pairs of arms. The lower right is abhaya hasta and the lower left is in Varada pose. In the Upper hands she holds lotus flowers.

Saraswathi

Saraswathi is the goddess of learning and is often worshipped independently of her spouse Brahma. She is imaged as sitting on a lotus pedestal (Padma pita) with two pairs of hands of which the upper right and the lower left hold respectively a rosary and a book, the other two holding a Veena.

Parvathi: Gauri & Uma

Just as Lakshmi is often worshipped independently of Vishnu, Gauri is also often worshipped independently of Siva. When worshipped alone, she has two pairs of arms of which the upper holds the axe and the pasam (noose) and the lower ones are in the abhaya and Varada poses.

Rajarajeswari

Rajarajeswari is a special form of Gauri in which she holds in the lower right a quiver containing five flowers and in the lower left a sugarcane.

Maheswari

In this form Gauri carries in her upper hands the axe and the antelope.

Durga

Devi as Durga the fighter has Kirita Makuta, two pairs of arms and a breast band. She holds in the upper pair of hands the Vishnu emblems of conch and discus. Her Vahana is lion.

Mahisasuramardani

Devi as a destroyer of the Buffaloe-demon, Mahisasura. She is imaged with more than two pairs of arms and as leaping upon the demon with her trident.

Kali

Devi as Kali has many forms. In the common form in which she has four arms she carries any of Siva's emblems except the antelope. In other forms where she is imaged as having more than two pairs of arms, these carry weapons such as pasam, trident, sword, knife, etc.

Grama Devatas

These are innumerable; while they do not come strictly into the fold of orthodox Hinduism they are worshipped by a large number of rural folk.

Ayyanar is the chief among the Grama Devatas. He is generally the guardian deity of villages and is said to be the son of Siva and Mohini. He is represented with his hair spread out and holding in his hands an elephant goad and whip. He generally rides a horse and sometimes he is portrayed as riding an elephant.

Apart from Ayyanar there are other Grama Devatas known such as Viran, Karupannan, Kulla Karuppa etc. These are generally not imaged but represented by a block of stone or a tree. Where imaged, these are imaged as standing with sword and shield, or with bill hook, or with chain and vessel.

Similarly, there are several village goddesses like Mari-amman, Pidariamman, Ponniamman, Draupadiamman, Kanniamman etc. They are represented by a stone or three bricks or a head or a full figure. Where the deity is only a head, a five hooded serpent covers it as an umbrella. Most of these goddesses are under a Margosa tree.



A BRONZE ICON OF DEVI

APPENDIX III

Statements of prominent Sthapathis

I

Sri V. Ekambara Sthapathiar residing at Pookara III Street in Tanjore is a full time worker manufacturing Icons. He is also proficient in temple-designing. He belongs to the Viswa-Karma Community and the members of his family are by tradition sculptors. He learned this craft from his ancestors. By practising this craft, he earns an income of Rs. 1,000 per month. His workshop and household is the same. He employs five adult workmen in his household for manufacturing pedestals for the Icons. The wages paid to the workers are not stated. Icons are manufactured of good quality granite stone which is obtained from Mylam and Nagalapuram at Rs. 4 per cubic foot. The designs are made by the sculptor himself; important among them being idols of Eswara, Vishnu and Devi. Hammer and chisel are the instruments used by him and these are made by others in their workshops. The literature relating to sculpture is written on palmyra leaves. Copies of three such sastras viz., Viswakarmeeyam, Myamatham and Amsamankasyabam, and leaves of Roopathyanam are available in his possession.

He undertakes renovation work of temples. He has to his credit the renovation of the following temples and works:

(1) Eswarankoil, Kadambarkoil and Ammankoil of Kulittalai taluk.

(2) Sura Nagudi Sivankoil at Karaikudi.

(3) In collaboration with Sri Saminatha Sthapathiyar, he has supervised the temple work of Lord Siva at Attangudi, seven miles north of Karaikudi.

(4) He decorated the Anivetti Mahal and Karna-Mahal in the Kalyana Mandapam of the Siva temple at Keelasevalpatti in Ramanathapuram district.

(5) He contributed his services to the cement and mortar work on the seven-tower temple of Maharajagopuram canopy above the sanctum sanctorum of the Siva temple at Pillayampatti, three miles from Kunrakudi. He completed the Urchava mandapam, and the big idols on the pillars and participated in the consecration ceremonies.

(6) He worked at the north entrance half of the Dakshinamurti temple in Pattamangalam, of Tiruppattur taluk, Ramanathapuram district.

(7) He worked at the Perumal temple at Ilaiyathakudi.

(8) He took part in the renovation of Marudiswarar temple and Siva temple in Koothapppar village near Tiruverumbur in Tiruchirapalli district.

His cousins have participated in the renovation work of Adi Annamalai Eswaran temple.

According to this Sthapathi, it is not possible in actual practice, to strictly adhere to the sastras and work on this art.

II

Sri M. Somanatha Sthapathiyar of Ilayathakudi, Tanjore is a full-time worker in his workshop which is the same as his household. He belongs to the Viswakarma Community. There are three adult workmen in the household. Persons are also employed for preliminary chiselling of the stones. They are paid Rs. 4 per day. Icons are manufactured of granite stone obtained from the nearby hilly areas at Rs. 3.51 per cubic foot. Charcoal and "Kavi" thread which are subsidiary materials used for this work are available for local purchase.

Designs are made by the Sthapathi himself, of the Idols of Vinayagar, Subrahmanyar, Valli, Deivayanai, Mariamman, Sastha and Poona Pushkalai. For the manufacture of these idols, varieties of scales, including instruments to denote the degrees of level, and varieties of chisels are used. All these are made by himself. Varieties of emery paper are used for polishing purposes.

His ancestors were famous Sthapathis, viz., Periyanayaka Sthapathi and Pathampathi Sthapathi who were associated with the work of Thirupunnavasalkalaiyar temple renovation and other important works. He learnt the craft from his father. He has no regular fixed income. When orders are received, his income will be Rs. 150 per month.

He has taken part in the construction work of the Siva shrine at Thekanur, Dandapani shrine at Araliathi, Pidari temple at Thirukolakudi, Pillayar shrine at Ilayathakudi, Siva shrine at Thirukattupalli and other Jeernotharana works. He also undertakes construction of gopurams, vimanams, other brick construction and plastering with cement.

III

Silpakalanidhi Sri S.M. Gowri Sankar, Viswabrahmin, residing at 9, Devi street, South Srirangam, Tiruchirapalli-8 is another full-time worker specialising in the manufacture of metal and stone icons along with their accessories like pedestals etc.

He does not have a workshop in his household nor does he have a fixed place of work. He goes over to Devasthanams where temporary workshops are erected to do the work entrusted. When work at one place is completed, he moves to the next place where he has work. Workers are employed on wages ranging from Rs. 2.50 to Rs. 4 as occasion demands. There will always be an apprentice with him, who learns the work by attending to preliminary items such as moulding,filling the idols etc. The materials required for his work are copper, zinc, lead, brass, silver, gold, copper plates and brass plates. Subsidiary materials required are pure gold, wax, plumbago, soft soil, clay sand, jute, iron bars, charcoal and kerosene oil. These are purchased from business men at Madras. The prices of these commodities fluctuate.

The Sthapathi is well-versed in the Sirpakala sastras, and is proficient in designing. Designs are made according to orders. They very much depend upon the source of the orders, and the purpose for which the icons are intended.

Instruments used are made out of steel, the main items being cutting pliers, scissors, hammer, file knife, anvil, bellows, grinding stone, crow-bar, spade, scale, level finding instrument, balance weights, and chiselling nails. Chiselling nails are made by the Sthapathis, while others are purchased from shops outside.

The value of his earnings differs from month to month. Last year a silver-plated "Annavagana" was done by him at Tiruporur for which he got a net profit of Rs. 1,000.

Since the art is a hereditary one, it was learnt even while he was young. He drew pictures and did sculpture work even while very young. His forefather of the fifth generation is said to have come to Tanjore Big temple to do some work connected with the temple. Ramaswamy Sthapathi of Swamimalai, grandfather of this individual who has written a book on this art, and who was associated with the publication of other valuable books also on this ancient art, was offered the post of Principal of the School of Arts at Madras by the then government.

This Sthapathi seems to be one of the great sculptors of our time. He is well-versed in Kasyapam, Manasaram, and Karanam. He has received several titles one of which is Sirpa Kala Nidhi, awarded by the Commissioner of the Madras Hindu Religious and Charitable Endowments. Andhra Pradesh Goverment awarded him the title of Sirpakala Ratnam, and the society conferred on him the title of Sirpa Pravina. He was associated with the renovation work of temples at Sri Rangam, Samayapuram, Tiruchy Malai Kottai, Triplicane, Tiruvottiyur, Thiruneermalai, Sri Mushnam, and a few Hindu temples at Singapore and Rangoon. The golden Bali Peedam at the Ranganathaswami temple, Sri Rangam, the Swarna Sthupi of Kapaleeswarar temple at Mylapore, and the Ananda Vimana of Parthasarathiswami temple of Triplicane were done by him. His works of art in ivory and bell-metal have been procured by many a curio-buyer. The British Museum exhibits some of the articles made by his forefathers. He has written a very informative pamphlet entitled "The Temple in India — a gift of the divine Silpasastra". The following extracts from this publication are interesting.

The birth, the use and the sanctity of the temple: In the beautifull "Thamizhagam" or the land of Tamils in the South, the temple arose as the abode of humanity, beauty and love. It is the home of beauty and grace of design to one capable of driving away the darkness of ignorance and kindling the light of knowledge and wisdom. Built by the side of sacred rivers or holy waters, it is a place of purification both literally and figuratively, the proper place to wash away the dirt and sin of man both symbolically and spiritually. The fine art of creating idols and constructing temples to house them is, therefore, the basis and origin of temples. It cannot be said with even a shadow of accuracy when the first "Silpa Sastra" or the art of idol-making and the science of temple architecture made their appearance. It takes us to a period long before History began to record facts and dates and to a period about which archaeological researches made their surmises.

It is said that some of the ancient cities and kingdoms with their stately buildings and fine works of architecture in South India were washed away by the sea. We come to know of this from references made in ancient

works of Tamil literature. We learn that all ranks of people appreciated the beautiful works of the 'Silpis' and praised the dextrous hands that made them and that their work had a salutary and beneficial influence on the civilization and culture of the people. As far as my knowledge and experience go, the books on Silpa Sastra are all in the 'Grantha' language. The intricate and delicate touches of the art are handed down from generation to generation. It is therefore a traditional art, whose knowledge is confined mainly to the hereditary members of the Sthapathi families. The Silpa Sastras in the Grantha language are not yet translated into other languages.

Different branches of the Silpa Sastras: There are 32 branches of Silpa Sastras. (1) Vrutham, (2) Viswabootham, (3) Viswakasyapam, (4) Visalam, (5) Viswadharmam, (6) Viswesam, (7) Viswacharam, (8) Vajjiram, (9) Vidhyapathi, (10) Manasaram, (11) Manuman, (12) Manabotham, (13) Mayindramal, (14) Mayamanabotham, (15) Mayannratham, (16) Mayaneethi, (17) Migudavattam, (18) Kalayupam, (19) Kapilam, (20) Karparyam, (21) Kalandhiram, (22) Nalam, (23) Banu, (24) Parachariyam, (25) Srushtam, (26) Chaithyakam, (27) Namasamhithai, (28) Sathvikam, (29) Adicharam, (30) Aridagam, (31) Sowmyam, (32) Chithram.

The illimitable ocean of Silpa Sastra is not confined to these alone. Viswakarma, Vidhyaprakasikai, Silpasaram, Silpatheepikai, Vasthuraiavallabam, Vasthurathnavali, Vasthusaram, Srithathvanidhi, Viswakarma prakasikai, Kumarathanthram etc., are other works on "Silpa Sastra". Some of them have come out in print. The others are preserved in volumes of palm leaves.

"Jyothisha Granthas" or Books on Astronomy: To determine the time factor in undertaking and executing works of Silpakala the first place is assigned to Jyothisha Sastra. Here mention may be made of a few useful books of Astronomy. (1) Kalamirtham, (2) Kalaprakasikai, (3) Kalavidhanam, (4) Kumarasamiyam, (5) Marichi, (6) Athri, (7) Vasistasamhithai, (8) Bruhuthsamhithai, (9) Mulasthambam, (10) Suryasidhantham, (11) Muhurthamarthandam etc. "Vasthu Sastra" inaugurates the first step in "Silpa Sastra" in as much as the Sthapathi has to obtain a thorough knowledge of Vasthu Purusha before he plans a capital, a city, a village and a temple. The temple becomes the centre of that circle. The temple becomes the centre of moral, social and spiritual activities of the organisation. It is the retreat after a hard day's labour. The deity within it becomes the source of inspiration and hope. To those that have ears to hear, the dear voice says with its irresistable charm, "come, unto me, all ye that are heavy laden, and I shall give you rest". The wise old poetess Auvvai has said "கோயிலில்லா ஊரில் குடி இருக்க வேண்டாம்" i.e., a place without a temple to resort to, is no worthy dwelling place to live in. The ancient Maharishis have said "சிற்பம் ஜெகஜீவனம்" for Silpa provides work to the unemployed : it engages the mind and provides food for thought, it becomes the meeting place for all kinds and all ranks of people; properly used, it becomes the centre of arts, culture and civilization of a people; it becomes the abode of God or love and a sanctified haven of peace.

Realising this the foreigners have taken away with them many of the ancient Granthas or holy books on Silpa sastras. They have studied them and praised them; and the land that produced them shared the praise. But the people who produced them are thrown into oblivion. On the granite walls and pillars of ancient temples we can find the names of kings in whose time the temples were built; but we may gaze and gaze long with searching eyes for the names of Silpis or the architects who had done those mighty works of wonder, but only to meet with a sad disappointment; for their names do not find a place there.

Origin of Silpa Sastra, The Silpa Sastra is mostly a traditional art and traditional science, handed down from father to son and from generation to generation. Based on heavenly folklore the origin is traced back to the Lord of the Universe who made Virat Viswakarma the divine architect, the sole custodian of this ancient lore. Viswakarma in his turn taught this sastra to the great rishis Manu, Maya, Thwashta, Silpi and Viswagna, who in their turn taught Parasara. Brighu, Marichi, Kasyapa and other rishis. There are also a few books that throw light on this point.

The birth-place of all arts, The Silpa Sastra is a comprehensive science, embracing within its fold Geology, Astronomy, Astrology, Mantra (Magic), Yantra (Talisman), Dharma Neethi (Law of duty and conduct). To put it briefly it embraces the six sastras, sixty-four arts and ninety-six tatwas or dogmas. Here the Agamas take thair origin, and are followed in succession by Music, Painting, Sculpture and all other arts that are conducive to human happiness, morality, civilization and culture. Kriya or the creative art, and Bavada or the creative Imagination are only two aspects of the comprehensive art of Silpa Sastra. It is capable of lifting the artist to the region of intuition, transcending the limits of perception, conception, appreciation and imagination. Perceiving

in that plane of his mental effort the Primeval Force or Energy called the Adi Sakthi and Para Sakthi, the artist with the help of his Ichcha Sakthi and Gnana Sakthi, and Kriya Sakthi, that is, with the help of his will power, with the help of his intellectual superiority and with his talent of creative capacity, gives a form and shape to the formless and shapeless divinity. He brings to the vision of the ordinary man in a concrete form the fundamentals of life which Pandits and Professors acquire with lucubration and the transcendental insight of the goal of life perceived by the sages and seers after long meditation and concentration. The humanity is, therefore, indebted to the Silpis and Sthapathis. But what is their lot in life to-day? Will the people's Government direct its benign attention to this benighted community of Silpis and Sthapathis, whose number is slowly diminishing, whose talent is slowly decaying with their ardour and zeal ebbing, as a result of their long struggle with poverty and want, with the indifference of the public and lack of their appreciation and support?

The temple and the house: As life and body are inseparable parts of a living unit, so to the Silpi the house and the temple are inseparable amsas or part of a social unit, whether it is a village, a city or a capital. The one is a spiritual factor; the other is its physical counterpart i.e., the social, economic, political and cultural counterpart of the unit. So in the planning of a city or a village the Silpi takes a comprehensive view of the whole, lays out the streets, the plots for construction of dwelling places, water-reservoirs, grazing yards for common pasturage and all things conducive to a happy, healthy and civilized life. But he always assigns the first and foremost place, to the temple for the temple is to the social unit, what life is to the body that contains it. For much more to the worldly man than to the ascetic, the temple is the constant rememberancer of permanent values of life, of the indivisible, infinite, indestructible and eternal. My grand-uncle Swamimalai Silpa Sastra Brahmasri Sadhasiva Sthapathi has composed many poems in Tamil, many of the ideas enshrined in the Grantha language. There he has sung of the planning of cities, palaces, mansions, temples with their stately gopuras or towers, of the swords and other weapons of war, of the plough and other weapons of Agriculture, of the throne and the dhurbar hall, of the weights and measures and other accessories of trade, of the coins in currency etc. He has also sung of tools to detect the animal matter, the mineral and liquid and other matters lying buried deep under the surface of the earth.

The qualities of Panchaloha or Five Metals : It is said that if five become one, then the temple work will reach its culmination. The earth is constituted of the five elements or the "Pancha Boodhas" (Prithvi, Appu, Theyu, Vayu, Akasa). The Jivathma sees its Jyothi after it subdues its Panchendhriyas (feeling, tasting, seeing, smelling and hearing). The chief crafts are five. In the same way the idols to be installed in temples are made of five metals, melted and shaped by the Silpis into one divine idol. Before making the Panchaloha idols for Moolasthana or the Sanctum Sanctorum the practice in ancient temples was to make "Suthai Bimbhas" or idols made of a rare combination of chalk, lime, etc., known as "Kadu Chakkara".

"Suthai Bimbha":-This idol is made of a mixture of all kinds of minerals, the salt of the nine varieties of precious stones and all medicinal materials. When the stone idol is installed on the pedestal, in the same way a rare mixture of medicinal materials called "Ashta Bandana" is coated all round. A rare knowledge of medicines can be gained from this portion of the Silpa Sastra.

Navapashana Moorthy or the Idol made of the mixture of the nine kinds of Poison :-The idol of Lord Muruga on the Palani hills is made of nine kinds of poison purified, melted and moulded into shape. In this manner we find the Silpa Sastra an inexhaustible fund and repository of all the beneficient arts and sciences.

Six sects of religion :-"Silpa" or the architectural and idol-making art is an impartial dispenser of service to all the six sects or creeds of religion, viz., the Saiva, the Vaishnava, the Saktheya, the Ganapathya, the Kabalika and the Saura sects. With a tolerance characteristic of their profession they had built temples for all their deities. We learn from Tamil literary works that many of them have been washed away by the sea. But all is not lost. The devotees of our land have been wise. On the tops of hills and mountains there is no such danger. So stately edifices of temples and forts arose on tops of hills defying the ravages of elements and gaining the reverence of age with the steady march of time. The great Saivite Saint Sri Arunagirinathar in his devotional songs has made mention of no less than 1008 temples and the Vaishnavite alwars or saints have made reference to more than 108 temples. Of the large temples, mention may be made of the stately ones with their majestic halls, each supported by thousand granite columns, everyone of which is an exquisite work of art commanding our admiration. Here the Silpa sastri gives an elaborate account of the linear measures used to determine the dimensions, of the praharas, Vimanas etc., and their characteristic features. To

satisfy one-self one has to visit the grand temples in Thiruvarangam, Chidambaram, Tiruvarur, Thiruvannamalai, Kanchipuram, Madurai, Sucheendhram and a few other places.

Details of Pramana: 96 are the doctrines, 64 arts, 6 fundamentals, 9 dwaras or holes, 5 boodhas or elements, 4 vedas, 6 sastras, 3 gunas or characteristics, 2 castes, 1 Brahma or the Lord Supreme. All these 196 items should find their places in a temple.

About Vimana :-To the Mother of the Universe the special Vimana designed is Meru Vimana, Pranava Vimana to Mahavishnu, Gajaprashta Vimana to Maheswara, Chathurmugha Vimana to Brahma and Sundara Vimana, Chandra Vimana, Ananda Vimana, Kailasa Vimana etc., to other Gods and Goddesses.

Bimbathalam :-The height of the Vigrahas or Idols of Brahma, Vishnu, Rudhra and Uma can range from five to ten thalas for the childhood stage, six thalas for the boyhood stage, seven thalas for the youth stage and ten thalas for the fully developed mature stage.

Measurement of Yugatharma thalam :-10 thalams for Krithayuga, 9 thalams for Threthayuga, 8 thalams for Dhwaparayuga and 7 thalams for Kaliyuga.

Measurement for Asuras :-The height of the Bimba or idol for Asuras like Iranya Kasipu, Iranyaksha, Vruthra, Ravana, Sumba, Nisumba, Mahishasura, Rakthabija, and Surapadma can range to 16 thalams.

Instruction is also given on the heights of the Vahanas. The Vahana may be of equal height with the Vigraha or it my be $1\frac{1}{2}$ or 2 times its height. In the Krithayuga, it was proper to select the white stone, in Threthayuga, the yellow stone of golden colour, in the Dhwaparayuga, the red stone and in the Kaliyuga the black stone. Details are given about making vigrahas or idols of wood, panchaloga or five metal combination, of copper, or silver and of gold.

The idol of the presiding deity in the temple should command a view of its Vahana and the altar. The hall in front should be so constructed as to enable the devotees to get a clear vision of the idol.

Characteristics of the Gopura or Towers : Gopuras are of five kinds. They are Dhwarasoba, Dhwarasala, Dwaraprasada, Dhwaraharmya and Dhwara Gopura. In constructing Vigrahas, Vimanas, Temples, Choultries, houses and digging wells and temple tanks of divine nature, care should be taken that Viswakarmas with a sound knowledge of the arts and sciences of architecture are employed for the purpose. The 29th Chapter of the Silpa Ratna declares that members of other communities should not be employed and warns of the loss that may await the violation of this injunction. I therefore appeal to the Commissioners, Executive Officers of the Religious and Charitable Endowment Administration, the Dharmakarthas of temples, and the Madathipathis not to call for tenders and entrust this sacred work in the hands of all kinds of people, but to patronise the Sthapathis and silpis who are the traditional custodians of this noble art and science. It is in the interest of the people and in the interest of the temple. It is also in the interest of the Sthapathis who for want of proper encouragement and support, seek other avocations of life.

The Silpi sits in meditation and concentrates his attention on the elusive idea of the divine and in a moment of intuition catches a glimpse of the transcendental ideal of all our human struggles. He broods and muses over it day and night, paints it with his brush and fashions it with the dexterity of his skilful hands and preserves it for the benefit of the devotees. (Should this art and science decay and disappear for want of encouragement and support?) The temple on the hill with its tall tower and kalasas at the top, like a mighty monarch with its tower on the anointed head still demands the tribute of our veneration. The thirtha and Vigraha still wash away our dirt and sin and show us the way and guide us with its divine light to the goal of life. Should this art and science decay and disappear for want of encouragement and support?"

IV

Sri M. Singaravelan Sthapathi, son of M. Chellakannu Sthapathi, Main Road, Mathiri Mangalam, Elangudi Post, Tanjavur district, belonging to the Viswa-Brahmin Community, is another full-time sculptor. He has no fixed place of work and moves from temple to temple, along with his workers, whenever there is demand. He was employing 40 workers in 1958-1960, and 37 in 1960-1961 in connection with the renovation of the Sri Sundareswarar temple at Paramakudi costing Rs. 4.5 lakhs. Out of the 37 employed in 1960-1961, 25 were connected with stone-work and the rest in the craftsmanship of Vimana-making. He is experienced in the construction and designing of temple pagodas (Vimanas), Sanctum Sanctorum (Karpa Graham) and ornamentation of the various parts of the temple. The Sthapathi himself does all the "Vani Varga" works relating to temple construction. Instruments used by him are purchased in the market. His monthly income is reported to be Rs. 150/-.

For the last ten generations, the fore-fathers of this Sthapathi have been engaged in this art. He got trained under his father from whom he is still learning the sastras and the technicalities of the art. The important literature connected with the art and available with him are the following ;

(1) Manasaram (writings in Grantham lipi).

(2) Manusaram (writings in Grantham lipi).

(3) Viswakarmiyam (Palmyra leaf writing both in Grantham and Tamil)

(4) Mayamatham (Printed copy in Nagara lipi)

(5) Kasyabam Silpam (Printed copy in Nagara lipi)

(6) Saraswatheeya Chithrakarma Sasthiram (printed copy in Grantham and Tamil)

(7) Sirpa Rethnagaram (Printed copy in Tamil).

After passing the S. S. L. C. Examination in 1949-1950, he went to Ceylon on an assignment of building five temples at a cost of Rs. 2 lakhs. After that when Government of India employed his father as the Chief Sthapathi for designing and constructing the artistic entrance to the Hirakud Project at Orissa, he too was employed as Assistant Sthapathi. He has also assisted his father in the renovation work of Sri Ramanathaswamy Devasthanam at Rameswaram where the second pragaram and the Anivotti mandapam were constructed by them. His father is the chief sthapathi at Sri Dandayuthaswami Devasthanam, Palni. He is also entrusted with the work of buliding a five-storeyed Rajagopuram and Anivotti mantapam costing Rs. 4 lakhs at Sri Kuzandai Velnathaswami temple at Thiruvanankudi. His cousin Sri V. Ganapathi, B.A., B.T. is the Superintendent-cum-master at the Government School of Sculptural works at Mahabalipuram. His uncle held this post in the same institution during 1957-1960.

The forefathers of this Sthapathi were associated with the construction of the Tanjore temple. One of them was the Chief Sthapathi in this construction. The nine-storeyed Rajagopuram of Kalayarkoil of Ramanathapuram district was built by his forefathers. They were also associated with the construction of the Vriddhapuriswarar temple at Thiruppunnavayil, Embal Agastheeswarar temple, Kurvi Kandampatti Nagara Siva temple, Keelsevalpatti Siva temple, Pudupatti Kandaramanicka Siva temple, Mathur Sri Iruttreeswar temple, Sri Brahma Vithiyambigai temple of Tiruvenkadu, Tanjore district, Kochi kadai Siva temple of Colombo, etc.

The Sthapathi is of opinion that the Goverment should take concrete steps to revive this art from decay.

V

Silpam V. M Vallinayaka Sthapathi : He belongs to the Viswa Brahmin Community, resides at Melakarivalankulam, Kilakarivalankulam, via Kalakadu in Tirunelveli district and is a full time worker. His workshop is separate from his household, and he employs 3 workmen on daily wages ranging from Rs. 3/- to Rs. 5/-. One of the three is given special work on metal. He specialises in the manufacture of stone and metal icons with their accessories like pedastals. He also undertakes ornamentation of pagodas and painting of clay models. The raw materials used by him are, as usual, stone, copper, bellmetal, silver, gold, a type of stone-powder called "Chukkangal" and Karungungilium. Stone is obtained from the Ambur Hills at Rs. 5/- per cubic foot and the others from Tirunelveli and Ambasamudram at the prevailing market rates. The subsidiary materials used are Kungiliam, Then mezhugu, Castor oil, Delta sand, canes, iron-bars, Seemai-kugai, and "Urukku". These materials are also purchased from Tirunelveli.

The idols are designed by the sculptor himself. Idols of Ganapathi, Subrahmanya, Nataraja, Somaskanda, Vishnu, and varieties of Murthies are the important idols designed and produced by him. In addition, he designs vimanams, gopurams, and temples. The tools used are hammer, pliers, files, chisels, Nagasthimagam, Stone-chisel, sledgehammer etc. which are made by himself.

This Sthapathi learnt the art from his father. His monthly income is about Rs. 500/- per mensem. During the previous year, he produced articles worth Rs. 5,000/-. The literature to which he refers is Viswakarmiyam, Kasyabam, Iyndramatham, Vasthusasthram, Mayamatham, Manasaram, Thalakramam, Ashtalachanams (found in Bharatham) and Poojavithi. All these are in manuscripts. At the time of the enquiry he was engaged in the Jeernotharanam of Disaiyam Vinai Adaikkalam Kaththa Vinayagar temple.

It is said that the ancestors of this Sthapathi went from place to place and made beautiful images of Lord Siva. They distinguished themselves by producing the idol of Ananda Nataraja at Chidambaram. Afterwards they made similar ones at Sepparai, Karisuzhanda Mangalam, and Kattari Mangalam of Tirunelveli district, and finally at Karivaiyur. It is mentioned in the Gothra Parambarai plate that this Sthapathi's grandfather of the 8th generation, Namasivaya Sthapthi, by name and his brother Subrahmanya

Sthapathi undertook on orders from the Maharaja of Travancore, the work of Kanni Ambalam at Kanyakumari as well as mantapams of Suchindram and Seevili in 650 Malayalam era, and received many rewards. Their successors worked in temples at Tirunelveli, Tiruchendur, Papavinasam, Ambasamudram, Kuttalam, Tirukkurungudi, Nanguneri, Azwar Tirunagari, etc. During his father's time, this Sthapathi worked in Chettinad Kovilur Devasthanam, Ariyakudi Siva temple at Vinayachilai, made Somaskander varieties of murthies, and Sankarankoil murtis at Tenkasi, the idols of Shanmugha and Nataraja at Ambasamudram, Sri Vadapathra Sayanam and Padachchadanam in Srivilliputhur, and the idol of Perumal Nachiyar, about 5 feet in height placed in Dwaraka of North India.

This Sthapathi, by himself, has attended to small items like making of a small conch, as well as big items like constuction of temples like Koilpatti Subrahmanyaswami temple for Kumbabhishekam. He has executed an order from Malaya for a 3½ feet idol of Nataraja to be placed in the Mariamman temple there. He has undertaken the production of stone idols of Dakshinamurti, Saneeswarar, Bhairavar and Nandi, as also the work in metal and wood for the flag mast and Balipitam of Tiruchendur.

VI

Sri S. Swaminatha Achari, residing at Kalanivasal, Karaikadi, Ramanathapuram district is another Sthapathi undertaking full-time work of temple construction and renovation. He belongs to the Viswakarma Community. He has no fixed place of work. Whenever there is demand, he employs skilled workers to assist him on daily wages, ranging from Rs. 5/- to Rs. 6/- and un-skilled workers on daily wages of Rs. 1.50. Materials used by him such as bricks, mortar, Cement, iron-bars and copper bars are supplied by the employers. He designs pagodas like Egathanar Vimana, Irithana Vimana, Sandhiga Vimana Pelavu Shattigar Vimana, Jayatha Vimana, Chathurasra Vimana, Vritha Sikharam, Shamisharamskanda Vimana Ashmaram, Rajasekharam etc. The tools used such as Karanai, Thukkundu, Plumb line, Mercury level, and scale varieties are made by himself. He learnt the art from his ancestors. He earns on an average Rs. 100/- to Rs. 150/- per month; and has no income during certain months. He refers to the Mayan Nul and Kasyabam Nul which are written in palm leaf in Sanskrit. He has taken up the work of Gopurams at Kottur Udayavar temple and Mariamman temple at Tiruvidaivayal, Tanjore Vellai Vinayagar temple, Pundi Pushpavaneswarar temple etc. The Commissioner, Hindu Religious and Charitable Endowments, awarded him a gold medal and a certificate of merit in appreciation of his work on Vimanas and his miniature-plastering upon Gopurams. He is registered in the Government's list of recognised Sthapathis.

His grandfather Muthukaruppa Achari, his father Chinnaswami Achari, and uncle Somasundara Achari, were Sthapathis associated with the work of Kovilur temple near Karaikudi.

VII

Sri V. E. S. Devashanmuganatha Achari, Sri Venkatesa Sculpture Centre, T. T. Devasthanam, Tirupathi is a Sthapathi engaged in the manufacture of stone icons and vahanas. He is a member of the Andhra Pradesh Lalita Kala Academy. His workshop is different from his household. There is an Assistant and 10 apprentices in his workshop. He works on granite stone, metal, timber and iron, which are purchased locally at the prevailing price levels. Designs are self-made, such as Chithra, Artha Chithra, Apasam, Salam, Asalam, Salasalam etc. Tools used by him viz. hammers, sledge-hammers, Chisels, scales, suthras etc. are partly made by him, and partly bought from shops. He learnt this hereditary art from his father. His monthly income is Rs. 180/-.

The literature to which he refers are Mayamatham, Kasyapam. Viswakarmiyam, Vibisthusastram, Vasthu Vidya, Vijavalli, Roobathyanam, Manasaram, Balagrandham, Kumarathandram, Mareechi Samhitha and Viswakarma Vasthusasthram.

His father Sri V. Chellayya Sthapathi with his two brothers-Magizhavanam Sthapathi and Kandaswami Sthapathi-devoted their whole life-time to this art. They have also done work at Ceylon and Malaya. They have done iconographic work at Paramakudi, Rameswaram, Kurumanakudi and Pattamangalam.

This Sthapathi worked as Assistant in temple undertakings under Sri Amirthalinga Sthapathi and Vaidyanatha Sthapathi. He has worked as the sole and chief architect at Ramanashram, and in some temples at Pollachi, Perundurai, Andhra Pradesh and other parts of India.

VIII

Sri V. Ganapathi Sthapthi, 48 East Raja Street, Mahabalipuram, Chingleput district specialises in the production of images of gods and goddesses, and ornate pillars etc. in black and green granite stones. He belongs to the Viswakarma community. He was for some time the Additional Secretary to Tamilnad

Sirpakala Sangam, Madras. He employs Assistant sculptors, the number of such employees depending upon the volume of work on hand, and pays them at rates ranging from Rs 4/-to Rs 10/-per day, the rate for an average Sthapathi being Rs. 6/-. A sculptor who can carve lifelike statues will be paid Rs. 10/-per day. The stones required for the work are obtained from Tiruvannamalai, Ambasamudram, Nagalapuram, and Pattimalaikuppam at Rs. 6/-per cubic foot. He attempts all designs seen in architectural edifices of ancient times. Tools used viz. hammers, chisels, measuring rods, trisquares, compasses etc. are purchased from shops.

The Sthapathi learnt the art from his father Sri M. Vaidyanatha Sthapathi, and his uncle Sri M. Sellakannu Sthapathi. His monthly income varies from Rs. 350/- to Rs. 500/-. He produced during the previous year images costing Rs. 12,000/-at the Mamallapuram worshop. He has in his possession literature such as Manusaram, Kasyapam, Mayamatham, Manasaram, Viswakarmiyam, Saraswatheeyam, Brahmeeyam, Silparatnam, Vimanarchanakalpam or Mareechi, Kannikagamam, Suprabhedagam, Vathulam, Sumarangana Suthradhana Aparajitha Pruchcha, Atri Samhita, Sritatvanidhi and Sukraneethi.

The ancestors of this Sthapathi were working under the patronage of the Chola Kings in Tanjavur and hence they came to be called as Tanjavur Sthapathis. They obtained gifts of wet land from the Kings, as well as gold coins and garments which were till recently, worshipped along with their family deity. Two of his forefathers were in charge of the construction of Kalayarkoil temple. His grandfather Mahilavana Sthapathi was in charge of the construction of the Kochi Kadai temple at Colombo costing more than Rs. 20 lakhs, under the patronage of Sri Ponnambala Ramanathan. His father Sri M. Vaidyanatha Sthapathi is very famous in South India. The Gandhi Mandapam at Guindy and Adikesava Perumal tower at Mylapore were the last two items of work attended to by him. He was the first Superintendent of the Government Sculpture Unit, Mahabalipuram. His life-size statue of Ramana Maharishi in granite stone won the admiration of eminent sculptors even from the west.

Sri Ganapathi Sthapathi has constructed the five-storeyed Rajagopuram at Thiruvavinangudi temple, Palni, as well as thirty vimanas of the hill-temple. He has constructed a manimandapam at Amaravathi Pudur (near Karaikudi).

IX

Sri S. Kailasa Ganapathi Achari, Sannathi Street, Mannarkoil Post Office, Ambasamudram taluk, Tirunelveli district is a Sthapathi who undertakes the construction of wooden vahanas and other similar accessories of deities. He belongs to the Viswakarma Community and proceeds from temple to temple, where he is called upon to work. His household and workshop are the same. He works with teakwood and other varieties of wood which are obtained from timber shops at rates varying from Rs. 15/- to Rs. 30/- per cubic foot. Screws, bolts, emery paper, paint and colour powders of different varieties are the subsidiary materials required which are obtained from local shops at prevailing rates. He produces Vahanas, Kedagams, Palanquins, Cars etc. The tools required by him are chisels, hammers and files which are obtained from blacksmiths and smithy shops.

He learnt the work from his father. His monthly income is reported to be Rs. 90/-. The value of articles made by him in 1961 will be Rs. 1500/- He refers to Saraswatheeyam, Chitrakarmasastram, and Kasyapasugasinam which are in manuscripts. His grandfather, Sri Vanamurti Sthapathi made the temple chariots of Sri Kannabiran temple at Sri Vaikuntam; and Athur Sivan temple of Tirunelveli district.

X

Sri M. Sambasivam Achary, Kammala Street, Tirukkogarnam, Pudukkottai, Tiruchy district is a Sthapathi doing images in granite stone and panchalogam (five metals). He belongs to the Viswabrahma Community. His household and workshop are the same. Workers will be employed depending upon the exigencies of the work. He obtains granite stone from Nagalapuram and Lambalakudi and Panchaloham from Kumbakonam, at the prevailing market rates. He designs images of Vinayagar, Subrahmanya, Sivan, and Ambal, according to orders from customers. Tools like hammers, chisels, crowbars, bellows and pliers are made by him with the assistance of smiths.

He learnt the art from other sculptors like Sundaram Achari, Kandanur Kaliappa Achari and Sayikottai Chinnaswami Achari. His monthly income will be Rs. 300/- when orders are placed on him, for idols. If there are no orders, there is no income also.

He has got with him for reference a few grandhams and extracts of Viswakarmiyam and Mayamatha grandhams written in palm-leaf; and also printed copies of Viswakarmiyam and Sirparathinam.

This Sthapathi is now mainly engaged in renovation work. At the time of this enquiry he was working in Pudukkottai Devasthanam. He had produced icons for the Maharaja of Pudukkottai. He also sends icons to Malaya and Penang.

XI

Sri V. Sivagnana Sthapathi, Melakkarivalankulam, Kilakarivalankulam, Kalakkadu Post Office, Tirunelveli district, is a full-time Sthapathi attending to stone and metal icons. His dwelling and workshop are the same, and paid workers are taken during times of need, the wages paid varying from Rs. 4/- to Rs. 6/- per day. He requires for his work granite stones, metals and coal which he obtains at prevailing market rates from Ambur in Ambasamudram taluk, Tirunelveli and Kalakkkadu respectively. Paraffin wax, Kungiliam and oil are the subsidiary materials required which are obtained from the local markets.

The Sthapathi specialises in the production of images and Vimanams and temple construction. The tools used by him — hammer, file, thinnagams. chisels, grinding stone, pliers, bellows etc. are selfmade. He learnt the art from his aneestors. His average income is Rs. 100/- per mensem. During the previous year, he produced articles worth Rs. 2,500/-. He has with him writings in palmyrah of Viswakarmiyam, Indramatham, Sadanyasagaram, Manasaram, Mymatham, Kasyabam, Swaroopathyanams, and various other small granthams. Printed copies of Maree Samhithai, and Kasyapam are also available.

The Sthapathi is stated to be the direct descendent of a sculptor, who lived during the time of Iranyavarman, the Chola King, to whom Lord Siva taught in the disguise of a Bhaktha, the art of mixing up copper with pure gold and making idols. The ancestors of this sthapathi participated in the construction of the Kanni Ambalam in the Bhagavathiamman temple at Kanyakumnri, and were awarded the "Veerachangili" by the King of Travancore. The icons of Dwarapalakas placed in the Kazhukachalamurti Sannidhi at Kazhugumalai in Tirunelveli district were made by them, and they were rewarded by the Zamindars of Ettayapuram. Some of the idols found in the Sankaranayinarkoil in Tirunelveli district were also made by them.

This Sthapathi, under the patronage of Sri M.A. Annamalai Chettiyar of Kanadukathan, attended in 1917 to the Jeernodharanam of the Pasupatheswarar Devasthanam temple at Annamalai near Chidambaram. The idols of Lords Ganapathy, Natarajar, Somaskandar, Nalwar, Piriyavadai, Subramanya with Valli and Devayani, and Arjuna were made by him. In 1920, under the patronage of the Zamindar of Devakottai, he made the icons of Kalyanasundarar and Rishabharudrar out of five metals, for the "Prathishta" in Thyagarajaswami Sannadhi, Tirukkaravasal. In 1922, he made the idols of Ganapathy, Devasenai, Subrahmanya, Nalwar, Somaskandar, Nataraja, Sundareswarar, and Dakshinamurti. They were made out of granite stone and metal. In 1925, he attended to the renovation of the Viswanatharkoil at Sathankulam. He renovated the Vishnu temple at Mangalakurichi in 1930, the Kumarapuram temple in Nanguneri taluk in 1933, Thirukokarnom temple in 1937, Bhoodathar sanctuary and Andal Sannathi in 1946 and the temple at Hikvary in Bihar State in 1947. He also attended to the renovation of the Subrahmanya Devasthanam at Kalakadu, Nanguneri taluk. He has also made and sent icons to Ceylon.

XII

Sri S. K. Swami Achari, son of Sundara Achari, South Street, Tirukkadalur, Mayuram taluk of Tanjavur district, is a Sthapathi producing Flagmast, Palanquin, Vimana, Chariots and other allied things of the temple establishments. He attends to the repairs on gopurams and other miscellaneous yagasala items relating to Kumbabhishekams. Whenever there is need, he employs unskilled workers on daily wages, to assist him.

He learnt the work as a hereditary art. When there is work, his income is Rs. 75/- to Rs. 80/- per month. He has taken part in the wooden work relating to the construction of Sri Amirdhagadeeswaraswami temple at Thirukkadalore in 1957, when it was consecrated. He has also taken up similar work at Mayuram, Poraiyar and Thiruvenkadu.

XIII

Sri S. Veerayya Sthapathi, North Street, Tiruvarur, Tanjavur district attends to temple renovation including plastering, painting of frescoes, and wood-carving. He belongs to the Agambadiyar Community. He has no separate workshop. He learnt the work initially as a hereditary art, and then from the School of Arts, Kumbakonam, and from Sri Govindaraja Mudaliar, Sthapathi at Chidambaram. He possesses copies of Kangeyasirpa nool and Sirpa Agarathi. His monthly income is Rs. 90/-. He did not produce anything worth while during the previous year.

In 1933, this Sthapathi did carving work over the Tiruvarur Gopuram and its Vimanam. In 1942, he painted the Thiruvenkadu temple. During 1951-1959, he undertook the painting of the Sthalapuranam at Tirupathi; and Korkkaithiruppani at Dharmapuram Adheenam. In 1950, he painted scenes depicting the kingdom and rule of Manuneethi Chola of Thanjavur. He painted the "float" of Tiruvarur temple, and was

conferred the title of Oriya Rathnam. A certificate of merit and a brocade cloth also were given to him in appreciation of this work. In 1961, he was engaged in painting the frescoes of the Madurai temple.

Eight years ago, the Sthapathi's father painted the Gopurams of the temples at Tiruvarur, Nagapattinam, Kumarankoil, Karaikal Perumal Kovil, Mayuram, Thirukkalur and Chettinadu.

XIV

Sri S. Karuppayya Achari, Sri Guru Dakshinamurtigal Madapuram, Tiruvarur. P.O., Thanjavur district, is a Sthapathi belonging to the Viswabrahma Community. He produces stone icons. He has no fixed place of work. He purchases granite stone at Rs. 5/- to Rs. 8/- per c. ft from Trichy and coal from the local market. Other subsidiary articles such as iron bars, paints and thread are purchased from local shops. His tools viz., chisels, hammer, plumbline etc., are made by an "Ulithatti" in his own workshop.

The Sthapathi learnt this hereditary art from his elders, and also from Sri M. Vaidyanatha Sthapathi, his father-in-law. He has no fixed and regular income. He possesses copies of Viswakarmeeyam, Mayamatham, Manusaram, Narayaneeyam, Roopathyanam, Sirpa nikandu, and Kasyapam. The first six are in grandha lipi and the seventh in Devanagari.

This sculptor assisted Sri Vaidyanatha Sthapathi in the construction of Gandhi Mantap at Madras. He was the chief Sthapathi while building the Adikesava Perumal gopuram at Mylapore. The building of the mantapam with Garbagriham (Sanctum Sanctorum) in Thiruvenkadu temple was also taken up by him. He supervised the construction of the Ramana Maharshi Mantap. He has produced the lifelike statue of Swami Vivekananda for the memorial at Kanyakumari.

The Sthapathi's father Sri M. S. Swaminatha Achary was the Chief Sthapathi in the construction of Sri Pataleswarar Kovil at Tirupapuliyur, In 1916 Prof. G. Jouveau-Dubreuil, a French man witnessed in person the above temple when it was under construction and he has written about it in his book on "Dravidian Architecture". Following is a list of temple construction undertaken by his family from the time of his great grand-father to his own time:—

a. Muthazhagu Sthapathi: Temple works at Illuppakku, Mathur, Devakottai and Iragusari of Ramnad District.

b. (1) Vayyapuri Sthapathi
(2) Chinnayya Sthapathi
(3) Vairava Sthapathi
(Sons of Muthazhagu Sthapathi.)

They took part in the construction of the temples of Kandadevi, Thiruvalangadu, Kancheepuram, Devakkottai, Vairavanpatti, Kulitalai, Tirupapuliyur, Thiruthira Kosamangai, Virkudi, and Tiruvadanai (all Siva Temples).

c. (1) V. Periasamy Sthapathi
(2) V. Ramanatha Sthapathi
(3) V. Subbiah Sthapathi
(Sons of Vayyapuri Sthapathi.)

Participated as assistants in the construction of temples at Kalasti, Kancheepuram (Mavadi), Mayuram (Ambal swamy temples), Madurai (Kudalazhakar Temple), Tiruvalangadu, Kancheepuram (Kumarakottam) Andankovil (Sivan) etc.

d. Swaminatha Sthapathi:
(Son of Chinnayya Sthapathi.)

Participated in the construction of Pataleswaran Koil at Tiruppapuliyur, Ambal Kovil at Tiruvaiyaru, Sivan Temple at Aathangudi and other places like Kanadukathan, Pillayarpatti, Kanakkudi and Billamangalam.

e. (1) Rathina Sthapathi
(2) Chinnaswamy Sthapathi
(Sons of Vairava Sthapathi.)

Took part in the construction of temples at Royapuram of Ramnad district and Virkudi of Thanjavur disrict.

f. P. Swamikkannu Sthapathi
(Son of Periaswamy Sthapathi.)

This Sthapathi has participated in the building of Temples at Mayavaram (as chief Sthapathi), Alangudi of Thanjavur District, Bamani, Ponnur, Andhra (Sri Bavanarayana Swamy Devasthanam), Tirukkulacheri, Chithambur (Samanar's temple) in Chingleput District.

g. R. Neelamega Sthapathi: Son of Ramanatha Sthapathi.

He has been an assistant Sthapathi in the temple works at Mayuram.

h. S. Karuppayya Sthapathi (Son of Swaminatha Sthapathi.)

This Sthapathi was an assistant to Sri M. Chellakkannu Sthapathi and Sri M. Vaidyanatha Sthapathi at Mathur, Ramnad District. He had been under their training for nearly 10 years. With Sri M. Chellak-

kannu and others he was engaged in the temple establishments at Ceylon for nearly 4 years. Of the works done by him there, the Rajagopuram at Thambalakamman, Ceylon, is note-worthy.

XV

Sri S. M. Arumugha Achary, Main Road, Sikkil Post, Tanjavur district is a Sthapathi belonging to the Viswakarma (Kammalar) community. He is engaged in portrait sculpture, and manufacture of icons, Vahanas and allied products. He works in the premises of temples where he is given work. Workers are employed, according to demand, to assist him on daily wages ranging from Rs. 3·50 to Rs. 6/-.

Iron and Copper bars, cement mortar and timber, Sukkan (a type of stone) paint and varieties of glass and golden thimbles are purchased from local markets at prevailing market rates. Designs of Vimanas, Gopurams. images, portraits, statues and chariots are made by him. His tools—scale varieties, plumbline, Karanaigal, brush, chisel and hammer—are selfmade. But bigger items are bought from blacksmiths. His ancestors were engaged in wood-carving; but this sthapathi has learnt also icon-making from Sarvasri Karuppayya Achari, Murugaiya Pathar, Natesa Pillai, M. Chennakannu Achari, and M. S. Vaithyanatha Sthapathi. He earns on an average Rs. 80/- per month. During the previous year, he produced materials worth Rs. 4,500/-. He has with him manuscripts written by some eminent sthapathis in addition to the publications on the art brought out by the Sarabojimahal Library.

His ancestors were associated with the production of Vahanas of Sikkil temple. He has taken part in the construction and renovation of this temple, as well as those at Manjukkollai, Nagapattinam, Alangudi, Tiruchendur, Thiruppuvanam, Virachilai, Kumbakonam, Kuttalam, Serunallur, Pondicherry, Thiruppur, Avanashi, Thirumuruganpoondi, Elappulli, Kadambara Vazhkai, Madalilagam and Palayangudi.

XVI

Sri S. Kumaraswamy Achari, 6, Arundale Street Mylapore, Madras-4 is a Sthapathi belonging to the Viswakarma Community producing Vahanams, Vimanams, chariots, floats and cars required by Devasthanams. He is a member of the Tamilnad Sculptors Cooperative Society. He has a separate workshop. For want of work, he is idle for most of the days and when orders are placed with him, he employs a few carpenters on daily wages of Rs. 4.50. Teakwood and iron required for his work are purchased from the local markets at prevailing rates. The designs of Chariots, Vahanas, Vimanas and floats are made by him. Tools like chisels, levelling chisels, saws and files are either made by him or bought from shops.

He learnt the art from a Guru. He has no fixed income. During the previous year, he produced articles worth Rs. 1.5 lakhs for which he got a remuneration of Rs. 1500/- He possesses a copy of Radhalatchanam for reference.

Even though sculpture in wood is also as important as sculpture on stone and metal, workmen of this type are very rare since temples use mainly stone sculptures in building and renovating temples.

XVII

Sri S. Chinnaswami Naidu, 86, Salai Road, Uraiyur P. O. Tiruchirapalli is a Sthapathi belonging to the Kavara Naidu community. He attends to miniature plastering of gopurams. His work is usually executed at the temple sites. If there is need, he employs workers on daily wages of Rs. 3.50 to Rs. 7/-. The materials required by him viz mortar, bricks, cement iron-bars, varieties of paints and brushes are obtained locally.

He learnt the art from his ancestors. He earns about Rs. 200/- per month. He executed contract work costing Rs. 4500/- during the previous year. Kasyapam written on palmyrah leaves is his main book of reference. At the time of the enquiry, he was engaged in the renovation of the Tiruppanjillai Sri Neelavanneswarar Devasthanam in Tiruchy district.

XVIII

Sri T. Gopalakrishna Pillai, South Street, Thiru Uthirakosai Mangai, Ramanathapuram district is a Sthapathi belonging to the Vellalar community undertaking production of stone icons. His workshop and household are the same. He works on black and granite stones which are obtained at Rs. 3/- per c. ft, from Perayur, Araimanjana and Madurai. He makes designs according to orders. The tools required by him are bought from the shops.

He learnt the hereditary art from great Sanskrit scholars on Chithra Sastrams by working as an apprentice under them. He has worked in several temples. This is however a secondary occupation for him.

XIX

Sri M. Nagaratna Achari, No. 2, Sri Narayanapuram Ashramam, Kollam, Kerala State, is a Sthapathi belonging to the Viswabrahmana community, engaged

in temple construction. He has no fixed place of work. At the time of the enquiry 50 persons were working under him, in connection with the construction of Sri Subrahmanya, Bhagavathi Ambal and Siva temples at Kollam; and they were paid daily rates from Rs. 7/- to Rs. 10/-. Articles and tools required by him are purchased locally. He designs sanctum sanctorum, Arthamantapam, Mathangamandapam etc.

He learnt the art from Sri Vaidyanatha Sthapathi. His average income is Rs. 400/- per month. He produced materials worth Rs. 18,000/- during the previous year. He has got manuscript copies of Viswakarmiyam, Mayamatham and Kasyapam, for reference. He was associated with the construction of Devakottai town Pidariyamman temple, Thiruvadanai Theerthandadhanam, Adikesavaperumal temple at Madras and Gandhi Mandapam at Guindy.

XX

Sri S. Muthuswami Sthapathi, Silpam, Melakkari Velangulam, Keelakkari Velangulam P. O., Tirunelveli district., produces stone and metal icons. His workshop and dwelling are the same. At times he employs workers and pays them at Rs. 2/- to Rs. 6/- per day. He buys granite stone from Ambur in Ambasamudram taluk at Rs. 5/- per c. ft. and metals from local market at the ruling rates. Subsidiary materials such as Kungiliam and Paraffin wax are also purchased locally.

He designs 16 types of Ganapathi, Subrahmanya and Siva. All tools required by him are made by himself. He learnt the art from his father Sri V. Sivagnana Sthapathi, and was also trained at the School of Arts, Mahabalipuram. He was also an apprentice at the Swamimalai Institute which imparts training in icon making. His monthly income is about Rs. 100/-.

He possesses copies of (1) Mayamatham, (2) Kasyabam, (3) Sorubathyanam (4) Viswakarmiyam (5) Indramatham (6) Sowmyasagaram (7) Manasaram, (8) Mareesamhithaikasyabam, and a few other granthams.

XXI

Sri S. Nallasiva Sthapathi, Melakkarivalankulam, Post Office, Nanguneri taluk, Tirunelveli district is a sthapathi belonging to Visvabrahma community engaged in the production of metal icons and their accessories. His household and workshop are in the same premises. All designs are made by him and when there is need, he employs workers on daily wages.

The materials required for his work are gold, silver, copper, brass and lead which he purchases from the markets at Tirunelveli, Tuticorin, Ambasamudram and Nagercoil at the prevailing rates. Subsidiary materials required are kungiliam, paraffin wax, oil and coal which are also locally purchased. He specialises in the production of 16 varieties of Ganapathi, 16 varieties of Subrahmanya, Siva, Devi and other moorthis. The tools required are hammer, pliers, Thinnagam, files, varieties of chisel, Nagasathinnagams, and other auxiliary tools for polishing, bellows, seemai kugai, etc. All these except bellows and seemai kugai are made by him.

He learnt this hereditary art from his father. He is engaged in this work for the last fifteen years. He will have work for two or three months in the year, when his usual income is Rs. 100 per month. His productions during the previous year would cost only Rs. 1,500/-. He has for reference Viswakarmiyam and other manuscripts.

The father of this sthapathi, by name Silpam Chidambara Sthapathi, is a famous sculptor in the Thanjavur district, who has also a good knowledge of medicine and mantram. Nallasiva Sthapathi has participated in the Jeernotharanam and Punarutharanam of several temples in Nanguneri taluk.

XXII

Sri T. Govindaswamy Sthapathi, now employed for the production of moulds in the Government Institute of Arts, Mahabalipuram belongs to the Kammalar community. He produces icons in clay and plaster. Materials required for his work are china clay, plaster and paints which are locally purchased. He designs Yellakkarukku, Magarakkarukku, Kodipen, Karpagraham and chariots. Tools required for the work are all selfmade.

He learnt this hereditary art from his ancestors. He draws a salary of Rs. 170/- from the Institute. His main reference books are Kumarathandavam and Silpakkadambam which are manuscripts written on palmyra leaves.

He has painted portraits at Thiruvaduthurai Adheenam. He has painted pictures depicting the story of Thiruppanthuruthi Apparswamy.

XXIII

Sri Mahalinga Achari, Sandarpudur, Myladi, Kanyakumari district, belongs to the Visvakarma community. He makes statues, icons of Hindu and Christian deities, and does sculpture on pillars, and

cemetery tablets. He is a member of the Myladi Cottage Industry Co-perative Society for stone work. His workshop and dwelling are the same. He employs workers for chiselling stones on daily wages of Rs. 3/-. Granite stone—black and green—and marble required for his work are obtained from nearby hills, Valliyur, and Trivandrum at local rates. Subsidiary materials like moulding brass and charcoal are locally purchased.

This sculptor designs the Karpagriham, Arthamandapam, Magamantapam, images, prabha and other vahanas. Tools required for his work—hammer, chisels etc.— are partly made by him and partly purchased. For him this is a hereditary art. His average income is Rs. 150/- per month. He has in his possession some writings in palm leaf taken from important works on silpasastras. His grandfather and father participated in the renovation of the Madurambal temple in Ambasamudram taluk.

This sthapathi has attended to the construction of Varkalai Sivan temple, Musilamvilai, Balavinayagar temple, and the renovation of Idayagudi Dwarathipathi Vinayagar koil.

XXIV

Sri S. Vaithialinga Sthapathi, Kovil Thirumangalam, Poonthottam Post Office, Nannilam taluk, Tanjavur district produces icons in metal, stone and clay. He belongs to the Viswabrahma community. His workshop and dwelling are the same. He employs workers to take moulds of images, on daily wages of Rs. 4/- to Rs. 6/-. The main articles required for his work are stone, mud, metal and cement. Black, white and green stones are obtained from Pattimankuppam, Chenal and Tirukkovilur at rates ranging from Rs. 5/- to Rs. 20/- per sq. feet. Subsidiary materials such as kavi threads, charcoal, sprayer, Kodimattam etc are purchased locally. Tools required are mostly manufactured by him.

He designs icons of Ganapathy, Subrahmanyam, Valli, Devayani etc.

He learnt the art from Sri R. M. Thillai Sthapathi. His income is Rs. 200/- per month. He has in his possession copies of Viswakarmiyam, Kasyabam, Saraswatheeyam, and Chitrakarmasastram. He has attended to the construction of temples at Karur, Virkkudi, Kovilur, Thambikottai, and Chettipoondur.

XXV

Sri Ganapathi Achari, son of Chokkalinga Achari, Sendanputhur, Myladi, Kanyakumari district, produces icons and attends to other works relating to temple construction. He belongs to the Viswakarma community. He is a member of the Myladi Cottage Industry Co-operative society for stone-workers. Black granite stone and marble required for his work are obtained from Myladi Pothaiyadi, and Valliyur, Trivandrum at market prices. Moulds and charcoal are purchased locally.

The sthapathi himself designs temples, cemetries, churches, balipeedas, Altar etc. All tools required are made by himself. He learnt this as a hereditary art. His monthly income is Rs. 100/-. The temples at Devikulam Peelamedu, (Krishnaswami tample) and Siva temple at Singanallur were constructed by this sthapathi.

XXVI

Sri Subbayyer Achari, son of Santhanam Achari, Sendampudur. Myladi, Kanyakumari district, produces stone icons, and attends to other works relating to temple construction. He belongs to the Viswakarma community and is a member of the Myladi Cottage Industry Co-operative Society for stone-workers. He procures black granite, marble and green granite which are required for his work from the Kanyakumari and Thanjavur districts. All designs and tools are made by himself.

He learnt this hereditary art from his father. His ancestors had participated in the construction of the temple at Suchindram. This sthapathi has been associated with some of the iconographic works in Kanyakumari, and Tirunelveli districts and also in Kerala State. His monthly income is Rs. 100/-.

XXVII

Sri M. R. Ganapathi Achari, Sendampudur, Myladi, Kanyakumari district is engaged in the production of stone icons and toys. He belongs to the Viswakarma Community, and is a member of the Myladi Cottage Industry Co-operative Society for stone workers. Black granite and marbles required for his work are obtained from the nearby hilly areas at prevailing rates.

He designs all items relating to temple construction. All tools are selfmade He learnt the art from his ancestors. His monthly income is Rs. 100/- to Rs. 150/-.

XXVIII

Sri T. Vaikunta Azhagappa Sthapathi, Mela Muthar Amman Koil Street, Thenkasi, Tiruchirapalli district, produces stone icons and sculptural works on metal including moulded products. His household and workshop are the same. He employs workers on daily wages whenever there is need. Granite stone,

copper and other materials required for his work are purchased locally.

He designs Vinyaga, Ambal, Subrahmanya and other Hindu deities. All tools are selfmade. He learnt this as a hereditary art. He has with him literature relating to the production of 51 varieties of icons, and other allied writings on this art.

His father Sri Thirumalai Kumara Sthapathi has participated in the construction of gopurams of temples at several places. This sthapathi has attended to the work relating to renovation and prathishta of several temples.

XXIX

Sri N. Neelamegha Achari, Thaikkal street, Mayuram Post, Tanjore district, is a Sthapathi who designs and executes models of plants, animals, Devas, Asuras, Kings of ancient times and living persons. He obtains for this purpose granite stone from Tiruvannamalai and iron and other materials locally. Tools required for the work are made by persons specially employed for the purpose.

He learnt the art from his father. He has no fixed income. He has copies of Manusaram, Manasaram, Kumara Thanthiram, Kasyabam, and Viswakarmiyam for his reference. His ancestors were associated with the construction works at Mayuranathaswami temple at Mayuram, Avvayambal Sannadhi, Kumara Kattali and other temples. He has participated in the construction works of Parvathiappar temple at Tanjore, Ambal Sannadhi's Vimanam at Valamarkottai, and its Rajagopuram of five storeys.

XXX

Sri A. Kasi Achari, Vagana Works, Karaikudi, Ramanathapuram district is a Sthapathi attending to the construction of Vahanas, Chariots, Vimanas etc. for temples. He belongs to the Viswabrahma Community. His workshop and residence are in the same premises. He employs when there is need, workers on weekly wage for doing wood-carving, painting and chiselling silver images. The materials required for his work viz. wood, paint and silver are purchased locally. He designs and executes Vahanas of Horse, Rishabam, Peacock, Kamathenu, Sivan, Lion, Karpakavriksham, and small as well as big chariots. Tools required are chisels, saws, files, grinding stones, hammer, adayal, Karanaigal, etc. Some of these are made by him and others are purchased.

This Sthapathi learnt his work as a hereditary art. He has with him for reference, writings on palmyrah leaf and translations of some great works. He has no regular and fixed income. His ancestors were associated with the construction of some temples at Tiruvannamalai, Kanchipuram, Chidambaram, Rameswaram and Tirupathi. Some of them had designed and constructed temples at Burma, Malaya and Ceylon.

XXXI

Sri S. Chokkar Sthapathi, 39 Periya Maravar Street, Madurai, attends to the production of statues and other products related to temples, in cement mortar of a special type, and bricks. He belongs to the Marava Community. He has no separate work-shop. He designs gopurams, Vimanams, and statues. His tools such as scales and varieties of "Karanaigal" are made by blacksmiths employed by him.

The Sthapathi learnt this hereditary art from his father. His monthly income is Rs. 200/- Sometimes he does not have even this income. He has got for reference a note on Gopura construction. His grandfather Sri Chokkalinga Kothanar participated in temple works at Benares, Madurai and Colombo, and his father was associated with the construction of temples at Thiruvedakam, Tirupalathurai, Pattamangalam and Tirunelveli.

Sri Chokkar Sthapathi was associated with the construction of Madurai Kudalazagar Perumal koil Gopuram, Cholavandan Mariamman koil Gopuram and Dindigul Abirami Amman Kovil Gopuram. At the time of the enquiry he was engaged in temple construction at Dharmapuram Math, and Mullipallam Perumal koil.

XXXII

Sri K. Ramaswami Sthapathi, Midulaipatti; Kulittalai, Tiruchirapalli district produces stone icons and designs temples. His workshop and dwelling are the same. He employs workers on daily wages of Rs. 3.5 for preliminary chiselling on big granite stones. He obtains granite stones from hills nearby at Rs 35/-per cubic feet. Designs are made by himself of Vinayagar, Subrahmanya, Deivayanai, Shanmugha, Swami, Ambal, Durgai, Navagrahas, Mariamman, Dandayuthapani etc. All tools required for the work—Scales, bellows, pliers, iron-bars, hammers, plumbline, level-finding instrument, chisels and grinding stones—are made by himself.

The Sthapathi learnt this hereditary art from his father. When there is continuous work, his monthly income is Rs. 600/-. He has with him for reference Kannikagamam, Viswa Karmiyam, Kasyapam, Mayamatham, Rubathyanam and Angulasangaimanopakarana.

His father Sri S. Karuppayya Sthapathi was associated with the construction of Nageswaran temple at Banares, Vinayagar temple at Tengur Road, Sevvur Siva temple and another Siva temple at Singapore. Sri Ramaswami Sthapathi has attended to the temple works of Sivan koil at Midulaipatti and Subrahmanyar temple and Pillayar koil at Sevvur.

XXXIII

Sri V. Swaminatha Mudaliar, 6, Jinda Sayabu Street, Konditope, Madras-1 undertakes designing and construction of temples. He has no separate workshop. He works at the temple sites and employs workers on daily wages ranging from Rs. 5.5 to Rs. 6.5 whenever there is need. Cement, sand and bricks required for the construction are locally procured. Tools required are selfmade. He learnt the work from his uncle Sri M. Nataraja Mudaliar, who was associated with some of the famous temple works. His monthly income varies from Rs. 150/- to Rs. 200/-. He has for reference the Kakkayar sirpam and the Sarvartha Sindham. He has participated in the construction of temples at Puduvayal (Ponneri taluk) and Egmore (Madras).

XXXIV

Sri V. Duraiswami Sthapathiyar, Sthariham, Kaliamman Koil Street, Periya Kammala Street, Tiruchirapalli attends to temple designing and architecture. His tools are made by blacksmiths, and a few by himself. He learnt the art by working under others. He has with him, Viswakarmiyam, Kasyapam, Mayamatham, Manasaram, Pancharattinam, Sakalatikaram, Vaishnava Grandham, Vaikanasam etc for reference. All his ancestors were well-known sculptors. He has worked in the Tirupparankunram temple and the Nataraja temple at Chidambaram.

XXXV

Sri S. Sankaranarayana Sthapathi, Ganesapuram, Karaikudi, Ramanathapuram, produces icons in metal. His workshop and residence are the same. When there is need, workers are employed on daily wages. The materials required for his work—brass, bronze, copper and lead—and subsidiary materials such as wax, coal and sand are procured locally at market rates. He designs icons of Nataraja, Rajeswari, Mahalakshmi, Saraswathi, Dandayuthapani etc. He uses selfmade tools. He learnt this work as a hereditary art. His average monthly income is Rs. 100/-. He has made idols for a temple at Kenjanahalli near Bangalore. He does not possess any literature with him.

XXXVI

Sri K. Ramaswami Sthapathi, Neyveli, Vadamadi P. O., Orthanad, Thanjavur, under-takes production of metal and stone icons, as well as plastering and painting of gopurams and statues. He has no fixed place of work. He employs, when there is need, workers on daily rates of Rs. 2. 50 to Rs.4/- for preliminary chiselling, miniature plastering and icon-making. The raw materials required such as stone, copper, brick and mortar are obtained from Pudukkottai, Kumbakonam, Karaikudi and other places; and subsidiary materials like paint, thread wax, kungilium turpentine, varnish, colour powder etc. are procured locally. Some of his tools are selfmade and others purchased. He learnt the art from his ancestors. His monthly income is Rs. 150/-. He has with him palmleaf writings of Mayamatham, Manusaram, Kasyabam, and Viswakarmiyam. He has participated in the construction of Sri Srinivasan Sannadhi at Chavadi, Raman Sannadhi at Tanjavur, Siva and Subrahmanya temples at Pudukkottai, and Vinayagar temples at various places.

XXXVII

Sri R. M. Muthalagiri Naidu, No. 151, Neerkeela Perumal Maistry Street, Madurai, produces designs found in temples. He belongs to the Balija Naidu (Vaishnava) community. He has no separate workshop. Materials required are varnish, paints, oil, gum colour powders and brushes which are locally purchased. He learnt the art from his father and grandfather. This is now only a secondary occupation for him.

About 80 years ago, his father and grandfather undertook successfully the painting of the pragaram and the 64 tiruvilayadals of the Lord on the wall of "Potramaraikulam of the Madurai Meenakshi Amman temple". This Sthapathi has been associated with the painting works at Madurai, Andarkoil, Thiruppapuliyur, Palani, Kiraliyur, Baganeri, Nattarasankottai, Kollangudi, Colombo, Papanasam Mattayan, Thidal, Thiruchendur, Kuttalam, and Srivilliputhur.

XXXVIII

C Amirthalinga Sthapathi, residing at Door No. 30-A, Karikaliammal street. Pollachi belongs to the Viswakarma Community. At the time of this survey there were four adult members in his household. Whenever there is need, he employs workers on daily wages of Rs. 5/- each and at the time of this survey, there were forty such employees, engaged in connection with the construction of an Asoka Sthambha which he had undertaken. He obtains for his work black and

red granite, from Palni at Rs. 2/- per sq. ft. He also procures marble for his sculptural works. Designs of elephants, Asoka peeta, Chains, Asokasimham, Asthamavargangal, Ashta Sanigal, and Ashtagrahangal are selfmade. He uses varieties of chisels and hammers all of which are made by blacksmiths. He learnt the art from his ancestors. His average income is Rs. 300/- per mensem. During the years 1960-61, he produced sculptures to the value of Rs. 35,000/-. He refers to literature such as Mymatham, and Kasyabam, which are printed in Devanagari script.

His father Sri Chidambara Sthapathi has participated in the construction of Kalayar kovil, Ambal Koil and some temple tanks. Sri Amirthalinga Sthapathi has been associated with the Jeernodharanam and Punarudharanam of Devakottai Thyagaraya temple, Tiruchuligai Pralayavadangar temple, Kodiakkarai Kulagar Kovil, Thiruvayaru Dharmasamvardhini Ambal Kovil which has a five storeyed gopuram, Tiruvadanai with a nine storeyed gopuram and Pollachi Mariamman temple.

XXXIX

Sri S. O. Karuppaiyar Kone, residing at 22, South Street, Thallakkulam, Madurai-2 undertakes gopuram works, renovation work of temples, and making of icons in cement and plaster. He belongs to the Yadava Community. There are eight adult workmen in his household. He has a separate workshop, and depending on the nature of work on hand, he employs daily paid workers for doing miniature plastering, preliminary chiselling and other minor assistance. The main articles required are cement mortar, iron-bars, bricks, sand, and paints, which he procures from Madras and Madurai at prevailing market rates from time to time. He undertakes designing of temples and other sculpture as customers demand. His tools are iron-vases, scale varieties, and spoons used in mortar and cement works-all of which are purchased from dealers.

The Sthapathi learnt the work as a hereditary art. His monthly income ranges from Rs. 100 to Rs. 120. During the year previous to this enquiry, he earned Rs. 12,000/- through the Punarudharana of Sri Dandayuthapaniswami kovil Rajagopuram. The literature to which he refers are Manusaram, Kasyabam, Viswakarmiyam and Narayaneeyam all of which are in Sanskrit script.

About 38 years ago, his father and grand father were associated with the construction of some gopurams in the Madurai Meenakshi Sundareswarar Kovil. They were also associated with the renovation of the garbhagriha of the Palani Dandayuthapani kovil at Tiruvadavur. This Sthapathi has participated in the Rajagopuram punarutharana of Sri Padmanabhaswami temple at Trivandrum and in the construction of temples at Vriddhachalam, Chettinad, Alagarkoil, Tiruvadavur, Palani, Tirunelveli, Tiruvannamalai, Vadakkandar, Kacharapalayam and Tuticorin.

XL

Sri K. Narayanan Sthapathi, residing at No. 22, South Street, Thallakkulam, Madurai-2, is another Sthapathi belonging to the Yadavar community. He has a separate workshop. He engages workers on daily wages, which depends on the quantum of work on hand. He undertakes the manufacture of life-size statues, icons and toys mostly with cement and bricks. These materials as well as paints, brushes, plaster of paris etc., are locally purchased. He designs Egathala Vimanam, Dwithala Vimanam, Thrithala Vimanam, Panchathala Vimanam, Thrithala gopuram, and Panchathalagopuram. He uses as tools twelve varieties of spoons and pots, iron vases, stools and level finding instruments which are purchased from Blacksmiths and Carpenters.

The Sthapathi learnt the art from his father. His monthly income is Rs. 100/-. During the year previous to this enquiry, his productions were valued at Rs. 6,250/-. He refers to literature such as Manusaram, Kasyabam, Viswakarmiyam, and Narayaneeyam, as well as four manuscripts translated into Tamil by his grand father. His father has written some books on this art.

About 85 years ago, his grandfather participated in the renovation work of Madurai Meenakshi temple, Tiruvadhavur Rajagopuram, Tirukoshtiyur and Palni. His father has worked during the Punarutharanam of Palni Rajagopuram and in the temples at Alagar koil, Vriddhachalam, Trivandrum etc.

This Sthapathi has attended to the Jeernotharanam of five gopurams at Palni Sri Dandayuthapani Devasthanam. At the time of the enquiry, he was engaged in the construction of a five-storeyed gopuram at Tuticorin.

XLI

Sri M. Chokkalinga Nayinar, residing at 17, Pidari South Street, Sirkali, Thanjavur district is a Sthapathi belonging to the Vanniyakula Kshathriyar community. At the time of the enquiry his household consisted of three adult workmen. He has no workshop. He goes and works in templesites where he is given work. Small items of work are executed in his own house. Consistent with demand, he employs workers on daily

wages, for doing sculptural and painting works, ranging from Rs. 6/- to Rs. 10/-. The main items of work undertaken by him are the manufacture of icons and the construction of gopurams. The materials required by him are stone, cement mortar, brass-bars, zinc-bars and paints which are procured locally. Tools required such as "Karanaigal" and metal are self-made.

The Sthapathi learnt this art by working under reputed Sthapathis and reading multifarious literary works and puranic writings. His monthly income ranges from Rs. 250/- to Rs. 300/- when there is work. He refers to works like Kakkayar silpam and Iyandara Mathamimurai.

The Sthapathi has executed sculptural works in temples at Tiruchopuram (Nachiarkovil), Varadampattu, Orumangalam, Poraiyur, Mylapore (Kapaleesarar Koil) Kottayur, Sorapattu, Kandaramanickam, Keelsevalpatti, Kunrakudi, Palakkad, and Calcutta.

XLII

Sri M. R. Pakkiriswami Pillai, Main Road, Mathirimangalam, Enangudi, P. O. Tanjore is a Sthapathi belonging to the Vellala (Sivamatham) community. He had at the time of this enquiry, two adult workmen in his household. He works at the temple sites; but has also a separate workshop. There are twelve employees working under him attending to the construction of Vimanams and to miniature plastering and they are paid daily wages of Rs. 6/- to Rs. 10/-. The Sthapathi specialises in the construction of Vimanams and parts of gopurams and manufacture of icons. The materials required such as bricks, mortar, cement and copper-bars are locally procured at prevailing rates. He designs temples and gopurams. The tools used by him are warped spoon, plumbline, level-finding instrument, "Thukkundu". "Vattukundu" and brushes which are manufactured by dealers.

He learnt the art by working as an apprentice under other Sthapathies and by studying the sastras. His monthly income is Rs. 300/-. He refers to literature such as Kasyapam, Mayamatham, Viswakarmiyam, Hanuman Betha Kasyapam, Iyandaramatham, Mareecha samhithai, Kannigagamam Chirpapaguthi, Suprabethagamam, Saraswatheeya Chithrakarma Sastram, Sirpa Rathnagaram, Viswakarmiya Ayathi Pantha Vilakkam, Lalitha Navaratnam, Kakkayar Pusundar Salliyam and Narayaneeyam. Some of these are printed and some others are still in the manuscript form.

His ancestors were experts in constructing temples, and their activities were confined to temples not only in India, but also in Burma and Malaya. He has been associated with the work of the following temples:—

1. Sri Chokkalingam Meenakshi temple at Kottaiyur (Chettinad)
2. Sree Meenakshi Sundareswarar temple at Sorapattu
3. Siva temple at Keelasevalpatti
4. Manickamman temple at Kandramanickam
5. Sri Periyanayagi Amman Sametha Sri Iyyancotru Eswaran temple, Mathur
6. Sri Muthukumaraswami temple at Vattamalai
7. Siva temple at Tiruppur
8. Sri Nagabhushaniammal temple at Ceylon
9. Sri Subrahmanyar Temple at Parandurai, Kaluthurai
10. Jeernotharanam of Sri Kandaswami Koil at Yazhpanam Nallur
11. Kochikadai Siva temple, Ceylon
12. Jeernotharanam of Sri Kandaswami koil at Marittapuram.
13. Sri Bava Ayshatheeswarar swami temple at Thiruthuraipoondi.

At the time of this enquiry, he was engaged in building the three-storeyed Vimanam of the sanctum sanctorum of the Sri Sundareswarar Temple, Paramakudi.

XLIII

Sri K. Ramayya, Poonthottam P.O., Nannilam taluk, is a Sthapathi specialising in the production of paper machie toys and clay models. He belongs to the Agambadiar Community. His household consists of two adult workmen. His workshop and dwelling are the same. He employs workmen for assisting him whenever there is need and pays each of them about Rs. 50/- per month. He requires clay, sawdust, paper, paints, gum and varieties of varnish which he purchases from Mayuram, Kumbakonam and Madras. He designs portraits of national dealers and models of animals. Tools used by him are "Karanaigal", knives and varieties of brushes some of which are made by him and others purchased from the market. He learnt the work from the School of Arts. His monthly income is Rs. 100/-. His production during the previous year was estimated to cost Rs. 400/-.

Some of his ancestors were engaged in making paper toys. They gave up sculpture work and painting of temples since this work was not lucrative. Sri Ramayya participated in temple works at Myla-

pore, Kumbakonam, Thiruppugazhur, Vaitheeswaran koil, Nachiarkoil, Keeranur and Perumjeri.

XLIV

Sri S. T. Muthuramalinga Sthapathiyar, Sri Rengapuram North Street, Devakottai, produces Stone Icons. He belongs to the Viswa Brahmin Community. There are two adult workmen in his household. He does the work in his house itself. During times of need, he employs casual workers who are paid wages according to the nature of work entrusted to them. He obtains black and green granite and marble from Mylam, Pattimalaikuppam and Thiruvannamalai. At present designs are made by his son. Designs of deities like Vinayagar, Subrahmanyan, Valli, Deivayanai and Mariamman, and garbhagrihams, Arthamandapams, and Rajagopurathotrams, are made. He uses as tools, scale varieties, plumbline, Kodimattam thread, Kavi, Mercury-level, hammer, chisels, forceps, pliers, bellows, Palamanai, Arappasam, spoons intended for miniature plastering work, Mattappalagai, Neen-mattam, and brushes. Some of these are made by him and the others purchased.

He learnt the art from his father. His monthly income is Rs. 150/-. He has granthams relating to sculptural art of "Manais", and other literature like Kasyapam, Viswakarmiyam, Rupathyanam Iyndramatham, and some other books. His father had participated in the construction of Kalaiyar Kovil Vazha vandé Amman shrine. He has undertaken the following works :

1. Nine-storeyed Rajagopuram at Tiruvadanai.
2. Jeernodharanam of Devakottai Pidariammen Koil.
3. ,, Saigon Muthumariamman temple.
4. Five-storeyed Rajagopuram at Thiruvaiyaru.
5. Kovilur Siva temple of Tanjore district.

XLV

Sri M. S. Vaidyalinga Sthapathi, Elamanur, Tiruchirapalli district, produces metal and stone icons. He belongs to the Viswakulam community. His two sons assist him in the household. Orders are executed either in the house itself or at temple sites. Employment of paid workers depends on the quantum and nature of work on hand. He requires granite stone, "Makkal" (a type of soft stone), Timber, Copper and China clay. Tools required by him are available in the shops, though most of his tools are made by himself. He learnt the art from his ancestors. His father was an expert in this art even in his twefth year, and this Sthapathi mastered the art by working under him. He learnt many of the silpa sastras and perfected the art by working under his father-in-law Sri M. V. Ramanatha Sthapathi, a well-known sculptor. His monthly income is Rs. 200/- His production during the previous year was worth Rs. 900/-. He has got literature such as Kasyapam, Viswakarmiyam, Manasaram, Kannigagamam, Kumarathanthiram, Sirpathibigai, and other grandhams.

Seven generations ago, Pragan Nayaga Sthapathi, an ancestor, did sculptural work at the Sivan temple in Tiruppunnavasal, Tanjore district. His son by name Pazhampathi Sthapathi took part in the construction of temples and choultries for which he got as reward 10 acres of land. Sri Vaidyalinga Sthapathi undertook in his 29th year the building of the temple in Embal in Pudukkottai taluk. He also undertook some of the mantapam works at Thirupparayathurai of Trichy district. He made some icons and carved moulded images for Thatharayar temple, in recognition of which work the title of "Shodasakala Vignani" was conferred on him.

XLVI

Sri N. M. Ramayya Pillai, Chetti Street, 8, Mayuram, Tanjavur, is a Sthapathi with a glorious record of having worked in 54 temples during his life time. Several of these were new constructions and the rest were renovations, reconstructions and extensions. Most of these are Siva, Vishnu, Vinayaka and Ambal temples and are situated in Tanjore district. His father was also associated with the construction and renovation of 16 temples in Tanjavur district.

This Sthapathi has with him the following literature for reference :

1. Kasyabam (Nagari script)
2. Kasyapa Silpa Sastram
3. Bramya Chitra Karmam
4. Saraswatheeya Chitra Karmam
5. Sirpanul Bokkisham
6. Sirpa Sindamani
7. Sirpa Sastra Kalanjium
8. Sirpa Rakasyam
9. Manaiyadi Sastram
10. Manai Sirpam
11. Iyndramatham
12. Devalaya Sirpam
13. Veedi Sekaramanai Kushi Parutham,

APPENDIX IV

The Tamil Questionnaire used in the Survey of Stone Icons Industry

மாநில சென்ஸஸ் அலுவலகம்,

சென்னை-6

அன்புடையீர்,

1961 ம் வருஷத்திய சென்ஸஸின் ஒரு சிறப்பு அம்சமாக தமிழ் நாட்டின் கலைத் தொழில் களைப் பற்றிய ஆராய்ச்சி பூர்வமான தகவல்கள் சேகரிக்கப்படுகின்றன. புராதனமான இந்தக் கலைத் தொழில்களின் தோற்றம், வளர்ச்சி தொழில் வல்லுநரின் இன்றைய நிலை போன்ற விவரங் களையும் இத் தொழில்களின் ஏற்றத் தாழ்வுக்கான காரணங்களையும் அறிவது இந்த ஆராய்ச்சித் திட்டத்தின் அடிப்படை நோக்கமாகும்.

அத்தகைய தொன்மையான கலைத்தொழில்களில் ஓர் சிறப்பிடம் பெற்றிருப்பது சிற்பத் தொழிலாகும். தமிழ் பண்பாட்டில் கோவில்களின் முக்கியத்துவம் பற்றி குறிப்பிட தேவையில்லை. தமிழர் நாகரிகத்தின் ஒரு சிறப்பு சின்னமாக விளங்குகின்றன இந்த கோயில்கள். சிறப்பு வாய்ந்த இந்த கோவில்களையும், அதிலுள்ள சிற்பங்களையும் செய்த தொழில் வல்லோரைப் பற்றி துரதிருஷ்டவசமாக ஏதும் தெரியாமலிருக்கிறது. இந்நிபுணர்களின் வழி வந்தோர் இன்னும் இத் தொழில் புரிகின்றனரா; புராதனமான இக்கலைத் தொழில் இன்று எப்படி நடத்தப் படுகிறது, எந்த முறையில் ஆதரிக்கப் படுகிறது என்பன போன்ற விவரங்களை அரசாங்கம் அறிய விரும்பு கின்றது. இதற்கு உங்கள் ஒவ்வொருவருடைய கூட்டுறவையும் நாடுகிறேம். மேற்கண்ட விவரங்களை அறிய உங்கள் ஒவ்வொருவரையும் தனித்தனியே பேட்டிகாணத்தான் விரும்பினும் வசதி குறைவால் அவ்விதம் செய்யமுடியாமல் இருப்பதால் நாங்கள் அறிய விரும்பும் விவரங்களைக் கேள்வி ரூபமாக இத்துடன் இணைத்திருக்கிறேம். தயவுசெய்து இக்கேள்விகள் கொண்ட நமூனுவை சிரமம் பாராது பூர்த்தி செய்து இத்துடன் அனுப்பியுள்ள கவரில் எங்களுக்கு அனுப்பி வைக்குமாறு வேண்டுகிறேம். கேள்விகளுக்குள் சிக்காத விஷயங்கள் எதையும் நீங்கள் கூற விரும்பினும், சித்திரங்கள் அல்லது விளக்கப் படங்கள் ஏதும் உங்களால் கொடுக்க முடியுமானால் அவைகளையும் தயவுசெய்து குறித்து அனுப்புமாறும் இதற்குத் தேவையான இடம் நமூனுவில் இல்லாமலிருப்பின் தனிக் காகிதம் ஒன்றில் அவைகளை குறிப்பிட்டு அனுப்புமாறும் வேண்டுகிறேம்.

எவ்வளவுதான் நாங்கள் விரும்பினும் இத்தொழில் வல்லுநர் அனைவரையும் எங்கள் பட்டியலில் சேர்க்கமுடியாமல் விட்டுப்போயிருக்கக் கூடுமாகையால் உங்களால் முடிந்தவரையில் இந்த நமூனுவை உங்களுக்குத் தெரிந்த தொழில் வல்லுநர்களின் கவனத்துக்கும் கொண்டு வருமாறு கோருகிறேம். இதன் மூலம் அக்கலைத் தொழிலுக்கும் அதுபற்றிய ஆராய்ச்சிக்கும் உதவிபுரிந்தவர்களாவீர்கள்.

இங்ஙனம்,

(Sd.) இராமநாதன்.

12-12-1961

உதவி மாநில சென்ஸஸ் அதிகாரி.

நமூனை

1. ஸ்தபதியின் பெயர்.

2. விலாஸம்.

3. குலம்.

4. வீட்டிலுள்ள வயது வந்த தொழிலாளி களின் எண்ணிக்கை.

5. ஸ்தபதி இந்தத் தொழிலுக்கான கூட்டு றவு சங்கம் எதிலும் அங்கத்தினரா?

6. சொந்தத் தொழிற்க்கூடத்திலேயே வேலை செய்கிறரா? தொழிற்கூடமும் வசிக்கும் இடமும் ஒன்றேதானு ; வேறு வேரு?

7. தொழிற்கூடத்தில் கூலி ஆட்கள் வேலை செய்கின்றனரா? இருப்பின் எவ்வளவு நபர்கள்? எந்த வேலைக்காக? அவர்கள் ஊதியம் என்ன?

8. தொழிற் கூடத்தில் தயாராகும் பொருள்கள் யாவை?

9. தொழிலுக்குத் தேவைம் படும் முக்கிய மூலம் பொருள்கள் யாவை?

பொருள்கள்	எங்கிருந்து கிடைக்கின்றன ?	என்ன விலையில் ?
க		
ங.		
ச.		

	எங்கிருந்து கிடைக்கின்றன ?	என்ன விலையில் ?
10. தொழிலுக்குத் தேவைப்படும் உபபொருள்கள் யாவை ?		
க.		
ங.		
ச.		

11. டிஸைன்களைத் தயாரித்துக் கொடுப்பது யார் ? ஸ்தபதியே டிஸைன்களைத் தயாரிக்கிறாரா?

12. சில ''டிஸைன்''களின் பெயர்களைக் குறிப்பிடவும்.

க.	ஞ.
ங.	ட.
ச.	ண.

13. இத்தொழிலில் தேவைப்படும் ஆயுதங்கள், உபகரணங்கள் யாவை?

14. இவைகளைத் தயாரிப்பது யார்? தானே தயாரித்துக் கொள்கிறாரா?

15. இந்தத் தொழிலை எவ்விதம் பயின்றார்?

16. இத்தொழில் மூலம் வரும் மாத வருமானம் எவ்வளவு?

17. சென்ற வருஷத்திய உற்பத்தியின் மதிப்பு சுமார் எவ்வளவு?

18. தற்போது கைவசம் இருக்கும் சிற்ப நூல்கள் யாவை?

நூல்.	சுவடி/பிரதி.
.....	.....
.....	.....
.....	.....

19. ஆலயத்திருப்பணி வேலைகள் (நிர்மாணப் அல்லது புனருத்தாரணம்) எதுவும் எடுத்து நடத்தியது உண்டா? இரும்பின் எந்த ஆலயம்? எங்கே?

20. இக் கலைத் தொழிலின் தோற்றம் பற்றி சரித்திர அல்லது புராண வரலாறு ஏதும் தெரிந்திருப்பின் தயவு செய்து தெரி விக்கவும்.

21. தங்கள் மூதாதையர்களைப் பற்றி எதுவும் குறிப்பிடமுடியுமா? கீர்த்தி வாய்ந்த கோவில்களின் நிர்மாணத்திலோ, புனருத்தாரணத்திலோ அவர்கள் சம்மந்தப் பட்டிருப்பின் தயவுசெய்து தெரிவிக்கவும். அதற்காக ஆதாரச் சான்றுகள் எதுவும் இருக்கின்றனவா?

22. இத் தொழில் பற்றிய மற்றைய விவரங்கள் எதுவும் இருக்குமானால் இங்கு குறிப் பிடவும்.