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A Study on Stone Sculpture Chisels in Tamil Nadu

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Abstract: In the course of civilisation, humans have evolved by kneading clay, carving wood, splitting stone, and forging metal to create countless fascinating works of art, thus living in harmony with art itself. Through numerous archaeological and historical evidence, we learn how humankind's creative journey is intertwined with craftsmanship. A question often arises: how many centuries must have passed for humans to acquire the knowledge and skill to create such works? When we consider the discovery that clay, once fired, becomes more durable(2), or the realisation that stone can be sculpted using tools forged from heated iron(3), we recognise that each of these developments required years of observation and experimentation. In particular, the art of stone carving demands tools of immense strength and precision tools that could only have been produced after extensive metallurgical refinement. The very process of transforming iron into delicate chisels capable of shaping stone into exquisite forms is a testament to human ingenuity and perseverance. This study aims to examine the specific tools and instruments used in the stone-sculpture traditions of Tamil Nadu.

Index Terms –: Stone Sculpture, Stone-Carving Tools, stone carving Chisels, Tamil Nadu Stone Carver

I. INTRODUCTION

Various types of stones have been utilised for sculpture across India for centuries, as confirmed by numerous studies. In regions such as Tamil Nadu and Andhra Pradesh, the stones are known for their hardness(4), whereas in places like Rajasthan(5), they tend to be comparatively softer. Similarly, the colours of stones differ from region to region(6).

In the early years of civilization, sculptors from different parts of the region, through experience and experimentation, have developed specialised tools to suit the nature of their local stones, overcoming many challenges in the process. For example, softer stones allowed for more intricate detailing, while harder stones required broader but still elegant carving techniques.

We can observe such craftsmanship in the rock-cut temples, monolithic mandapas, and stone pillars found across India. Among these, the Pallava period stands out in Tamil Nadu for its extraordinary contribution to stone sculpture.

The art of the Pallavas, especially at Mamallapuram (Mahabalipuram), serves as a distinguished example frequently cited by scholars. The site features extensive base-reliefs, rock-cut temples, and structural temples all carved with remarkable beauty and precision.

When observing these carvings, one wonders whether they were shaped with chisels alone or perhaps modelled in sand before being solidified into stone over centuries, for their finesse and detail defy belief. The mastery with which the sculptors wielded their chisels continues to inspire awe. This research, therefore, focuses on the tools and metal implements used in Tamil Nadu's stone-sculpture tradition.

Significance of the Study:

In the modern era, sculptors use a variety of electric and mechanical tools to create stone carvings. However, before the advent of electricity(7), artisans relied entirely on hand-forged and tempered iron implements, crafted to suit specific needs.

These traditional tools were refined to match the density and grain of each stone, allowing sculptors to produce elegant works of art through sheer manual skill.

This study aims not only to document these tools but also to help future generations of stone sculptors understand the types of implements their predecessors used in creating enduring works of beauty.

2. REVIEW OF LITERATURE

Stone carving requires chisels forged from tempered and hardened iron, made in various shapes and sizes to suit different stages of work. Typically, chisels measure between ½ inch to 1 ½ inches in diameter, 3 to 9 inches in length, and ¼ inch to 1 ½ inches in thickness.

Chisels are generally made in square or circular, or octagonal forms, depending on their intended purpose. Their form and edge vary according to the size and intricacy of the sculpture being produced.

Classification and Description of Tools:

1. Kottalan: Used for breaking large stones into smaller pieces. It has a hammer like design, one side flat for striking and the other slightly tapered for contact with stone. It usually weighs between 2 and 5 kilograms. Used along with a heavy sledgehammer to remove excess stone and achieve rough shaping.

Hammers of varying weights ranging from four kilograms to one kilogram are used depending on the detail and intricacy of the work.(8)

2. Thulai Vuli: Used for splitting the stones by creating holes that fit perfectly with Aappu, that are inserted into the stones. This chisel is about five inches long, with a sharply pointed tip. (10)

3. Aappu:

Typically five inches long, made in square or circular forms. Aappu chisels are inserted into the holes made by Thulai Vuli to split the stone. The wedges are hammered evenly along a marked line to produce a clean break. The closer and more uniformly they are placed, the smoother the split.

4. Udaiyaappu: Characterised by a flat and slightly slanted edge, used to trim irregular stone surfaces into roughly even shapes.(8) Usually five to seven inches long and 1 ½ inches thick, this chisel is known by various local terms Periya Udaiyappu, Kattai Udaiyappu, or Uli Udaiyappu depending on its size.(10)

5. Vettumunai Uli: These chisels are used in the early stages of carving to remove large sections of unwanted stone. They are 5–7 inches long and 1 inch thick. Depending on the size of the Uli, the name of the tool also changed to Tharai Vettumunai Uli,(8) but now it is locally known as Peria Uli.

6. Tharaipattu Uli: Similar in shape to the Vettumunai Uli but smaller (3–5 inches long). It has a slightly sharper tip and is used after rough shaping to refine and define forms before detailing. It is believed that the Vettumunai Uli, due to wear and tear, becomes Tharaipattu Uli, now commonly called Kattai Uli.(8)

7. Koochu Uli: Used after Tharaipattu Uli to refine details. These chisels are finely sharpened daily and kept ready for delicate work. They range from 3–5 inches long and ½ inch thick. Depending on the size of the Uli, the name of the tool also changed to Tharai Koochu Uli (8) and is now locally known as Theivu Uli.(11)

8. Kandathuvara Uli or Vajrayudham: Resembling an arrowhead, the only purpose of this tool is to drill deep holes in stone. Depending on the required depth, the chisels are made in different lengths, and for the width of the hole, the tip of the chisel is wider accordingly.(8) Related tools like Jumper Uli (1½ to 2½ feet long) are used for similar purposes.(10)

9. Therarayam Uli: Used to reach narrow spaces, such as behind the neck or between the limbs of a sculpture.(8) The chisel's tip is slightly curved, 5-7 inches long. When it is used, the tip of the chisel is pressed into the stone and the curved part is supported with a piece of wood, and the tip is then hammered to break the stone into small pieces allowing detailed shaping. Like this curved chisel, the Erattai Valasal Uli (10) is used to reach deeper spaces and Sapbei Uli is used for extremely small recesses.(12)

10. Palamunai Uli : Resembling the outer skin of a jackfruit, this multi-toothed chisel is further divided into six types: Perumpallu Palamunai, Naduraasipallu Palamunai, Sannapallu Palamunai, Kamaripallu Palamunai and Saivupallu Palamunai. These chisels are used to evenly transform stones that are indented. The chisels are 2 to 4 inches in length and 1 to 1 ½ inches thick. (8).

- Perumpallu Palamunai

All the teeth of these chisels are long and sharp. It is now commonly known as Periya Palamunai Uli.

- Naduraasipallu Palamunai

The length of the teeth in this chisel are medium when compared to Periya Perumpallu Palamunai

- Sannapallu Palamunai

The length of the teeth in this chisel are short/smaller when compared to Naduraasipallu Palamunai

- Kamaripallu Palamunai

These chisels are made with a large number of teeth, shaped like a grain of millet with very sharp tips.

- Uruttaipallu Palamunai

The shape of this chisel is rounded on the edge and the teeth at the tip of the round shape are sharp. This chisel is used for curved spaces of the stone.(10)

- Saivupallu Palamunai

This chisel is slightly different from other chisels in that the tip of this chisel is rectangular and inclined. This chisel has sharp teeth on the inclined part and is used to even out the inclined parts of stones.(10)

These are used to level uneven surfaces after rough carving.

11. Arappasam : Flat at the base and smooth on the surface, this tool is used after the Palamunai Uli to polish and even out stone surfaces. Sesame oil is often applied to aid in smoothing. Arappāsam tools come in four varieties Periya , Nadu , Siriya ,(13) and Pall Arappasam each suited to a specific stage of finishing(10)

Research Methodology

This study is based on secondary sources such as published books and academic articles on sculpture have been the primary evidence, as well as field interviews with sculptors who have been working with stone-carving in their workshops in Mamallapuram for over two decades.

Through these interviews and comparative analysis, this study documents traditional tools and their functional classifications.

Conclusion

Tamil sculptors have made a remarkable contribution to the field of art, as evidenced by the sculptures found in numerous temples and monuments. Scholars and researchers have documented many of these works in books, enabling young sculptors today to study and appreciate them.

However, while much has been written about the sculptures themselves, there is limited information about the tools used to create them. This absence is regrettable, for understanding the implements is key to understanding the craft.

Even though modern sculptors use mechanical tools, the creations of the pre-industrial era remain unparalleled. The lack of awareness about those traditional tools is a significant loss for younger artisans.

If government museums were to research, preserve, and exhibit these historical stone-carving tools, it would not only benefit students and sculptors but also serve as a valuable cultural and historical archive.



1. Kottalan	12. Jumper Uli
2. Hammer	13. Therarayam Uli
3. Thulai Vuli	14. Erattai Valasal Uli
4. Aappu	15. Perumpallu Munai
5. Udaiyappu	16. Naduraasipallu Munai
6. Kattai Udaiyappu	17. Sannapallu Munai
7. Uli Udaiyappu	18. Kamaripallu Munai
8. Vettumunai Uli	19. Uruttai Pal Palamunai
9. Tharaipattu Uli	20. Saivupallu Palamunai
10. Koochu Uli	21. Arappāsam
11. Kandhathuvara Uli	22. Pall Arappāsam

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