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ఎరుపు (Erupu): Reconstructing  
Red Dye of *Kalamkari* Textiles

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# ఎరుపు (Erupu): Reconstructing Red Dye of *Kalamkari* Textiles

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## Abstract

The brilliant red hues of the dyed, painted, printed and resist-dyed cottons of the coastal belt of the Deccan—historically known as *kalamkari*—have invited continuous debates and scholarly interventions into the usage of dyestuff in this region. The majority of the scholars stressed the use of one specific dyestuff, the roots of *chaya* or *oldenlandia umbellata*, though historical records suggest that several kinds of red dyes were available in the Deccan region, sourced locally and beyond. Whereas elsewhere I have argued that the artisanal processes and local water sources significantly contribute to the vibrancy of red dyes of this region, here I would like to present a praxis-oriented approach with regards to utilising three different kinds of red dyes in my workspace to reflect upon this historical matter. I have chosen to work with three dyes, which were in use in southern India: *manjistha* or *rubia cordifolia*, *aal* or *morinda citrifolia* and sappanwood or *caesalpinia sappan*. The experiments will broaden understandings around the materiality of Deccani dyes and dyeing practices. Moreover, I will emphasise the aspect of layering and over-dyeing in the celebrated Deccani cottons, which remains mostly understudied.

For the submission, I produced a photo essay as a chronicle of this practice-based research. This approach is rooted in the recent art historical scholarship that prioritises the process of *making* objects over the final outcome.

**Keywords:** Practice-based Research, Red Dyes, Textiles, Deccan, Art History

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## Introduction

As the simmering solution of *manjistha* (Indian madder, *rubia cordifolia*) reached the temperature of around eighty degrees, its fragrance encompassed my kitchen and, subsequently, the entire apartment. After waiting twenty more minutes, I dipped the mordant (fixative agent used in dyeing) painted cotton fabric pieces following the *kalamkari* dyeing process. The colour of the water turned blood red, but the fabric seemed unable to absorb the brilliance of the *manjistha* dyebath. After drying, the fabric obtained a pale brick red shade—nowhere near the coruscating red I desired. This experiment in my then residence-cum-workshop in Hyderabad in 2020 was one of the many experiments I have conducted in the last several years. While I am acutely aware of the significance of the regional water, ecology and artisanal processes in developing the brilliance of dyes in the artisanal workshops in the Deccan and northern Coromandel, hands-on explorations are essential to expand the scope of historical reconstructions.<sup>2</sup> The researcher/practitioners' sensorial engagement with material practices complemented by thorough archival research shed light into the lived experiences of the makers, whose histories are largely undocumented. Here, I would like to present a praxis-oriented approach with regards to utilising three different kinds of red dyes in my workspace to reflect upon this historical matter. Noted textile scholars have stressed the predominance of Indian madder in masterfully crafted dyed textiles, especially *manjistha* and *chaya* roots (*oldenlandia umbellata*), used to derive shades of red dye prior to the widespread usage of synthesised alizarin.<sup>3</sup> What remains to be explored, is whether different dyes were mixed to achieve certain shades; whether overdyeing—the repetitive process of dyeing a piece of fabric with the same or multiple ingredients to achieve denser tones—was employed to create subtle layers and tonality. Therefore, in this illustrated essay, I will present chronicles of my hands-on exploration of available red dyes to reflect on these historically rooted matters.

My inclination to practice-based research emerged from my training in printmaking, textile making and art history. My training also allowed me to comprehend the significance of embodiment in craft and allied practices. By embodiment, I refer to the conscious physical actions as manifest articulations of a decision-making process that is in turn informed by the practitioners' socio-cultural surroundings. The recent scholarship on South Asian textiles and craft emphasises the need for a sensorial and immersive way of approaching the

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<sup>2</sup> To expand the scope of hands-on research into historical reconstruction, I chose to focus on the material-based exploration. The impact of archival and ethnographic research to address suppressed facets of the artisanal histories is delineated in my earlier publications. See "Performing Histories: Enduring Dyes and Waterways in Artisanal Lives," *Journal of Textile Design Research and Practice*, 8, no. 3 (2020): 335-57; "From Reference to Knowledge Repositories: On Mimetic Aspects of Kalamkari Making," *South Asian Studies* 37, no.1 (2021): 51-71.

<sup>3</sup> Sarah Fee, "Creating Colour," in *Cloth That Changed the World: The Art and Fashion of Indian Chintz*, ed. Sarah Fee (Toronto: Royal Ontario Museum, distributed by Yale University Press, 2020), 6-7; Steven Cohen, "Materials and Making," in *The Fabric of India*, ed. Rosemary Crill (London: V&A Publishing, 2015), 33-4; Elena Phipps, "Global Colors: Dyes and the dye trade," in *Interwoven Globe: The Worldwide Textile Trade, 1500-1800*, ed. Amelia Peck (New York: The Metropolitan Museum of Art, distributed by Yale University Press, 2013), 133-4.

artifacts.<sup>4</sup> My hands-on approach to expanding the scope of historical enquiry is aimed towards contributing to this dynamic body of scholarship.

## Deccan and the Hues of Red

Red or ఎరుపు *erupu*, as it is termed in Telugu—the language predominantly spoken by the *kalamkari* makers—is enmeshed in the cultural lives of the Deccan. From the early historic rock paintings, Hindu ritualistic practices of marking sacredness to the celebrated Cheriya painted scrolls, the use of powder red remains integral to the Deccani visual culture. Alongside the vegetal dyes, mineral-based red oxide and tamarind-based *kumkuma*, a red powder, are integral parts of the cultural lives of the Deccanis. The hues of red are versatile, like their socio-cultural functions. A closer look at traditionally-died cottons from the Deccan region, or *kalamkaris*, exhibited in various museum collections,<sup>5</sup> reveals that not one but many kinds of red featured in the textiles: warm and earthy brick red that resonates with the iron-rich red soil of Southern India; red that is slightly dark and yet warm as human blood; red that embodies a hint of the pink hue of rose; red that is at the verge of turning into purple. As the art historical analysis on these textiles focuses on the predominance of madder, these subtle variations within the shades of red are missed. Were dyestuffs, such as *aal* or *morinda citrifolia* and sapanwood or *caesalpinia sappan*, found in Eastern and Southern India, used by the *kalamkari* makers to achieve the subtle variations in red? In early 2022, I explored the combination of these dyestuffs as groundwork for my future research and practice and attempted to exploring this question.

## The Process

At the outset, I washed and boiled unbleached handwoven cotton fabric following the techniques I have learned at the workshop of late master dyer Mukkantieswarudu Rao in

<sup>4</sup> See Sylvia Houghteling, “Sentiment in Silks: Safavid Figural Textiles in Mughal Courtly Culture,” in *Affect, Emotion, and Subjectivity in Early Modern Muslim Empires*, ed. Kishwar Rizvi, 124-47; Pedro Macahdo, Sarah Fee and Gwen Campbell eds., *Textile Trades, Consumer Cultures, and the Material Worlds of the Indian Ocean: An Ocean of Cloth* (Laddusaw: Palgrave Macmillan, 2018); Molly Emma Aitken, “Repetition and Response,” in *The Intelligence of Tradition in Rajput Court Painting* (New Haven and London: Yale University Press, 2010), 155-70.

<sup>5</sup> Leading museum collections such as Royal Ontario Museum, Toronto, Calico Museum of Art, Ahmedabad, The Metropolitan Museum of Art, New York, and Victoria and Albert Museum, London hold a rich collection of the historical *kalamkari* textiles. For example: Palampore (textile panel, <https://collections.rom.on.ca/objects/433574/palampore-textile-panel?ctx=0a9a0d85-1ea8-4d4e-b058-f5080e2e96fa&idx=66>), Palampore (textile panel, <https://collections.rom.on.ca/objects/363476/palampore-textile-panel?ctx=0a9a0d85-1ea8-4d4e-b058-f5080e2e96fa&idx=69>), Fragment of Indian Chintz (<https://www.metmuseum.org/art/collection/search/237872>) and Floorspread (<https://collections.vam.ac.uk/item/O455538/floorspread-unknown/>).

Polavaram, Andhra Pradesh, and at the Weavers Service Centre, Hyderabad.<sup>6</sup> Then, the fabric pieces were treated in myrobalan solution and, afterwards, full cream milk. The fat content in milk resists the liquid black dye from spreading onto the fabric surface. Then, I applied black dye or *kasim* with a calligraphic *kalam*, a pen with a metallic tip to create the initial drawings. The drawings show a loop of patterns and events from my immediate surroundings following a historical *kalamkari* with a “patchwork” design, thus titled *Again*.<sup>7</sup> Before applying alum mordant to the fabric, I allowed the black dye to dry thoroughly for a few days. Afterwards, I applied alum mordant solution with *kalam* to the area desired to be dyed in shades of red (Images 1 and 2).<sup>8</sup> Mordanting is a process to prepare fibers to absorb maximum amount of dye when boiled in dye solution and this process is extensively employed in making Deccani dyed textiles. The mordanted areas in the images are the geometric shapes, triangles and narrow horizontal strips, which are evenly painted; the drawings in black dye, instead, emphasise a strong linear character.



Images 1 and 2. *Again*, 16x18 inches (a set of two), fermented black dye on treated handwoven cotton, 2022.  
Image courtesy of the author.

<sup>6</sup> During my visit to the late master dyer Mukkateswarudu Rao’s workshop—now run by his son Nageswara Rao—in September 2015, June 2017 and June 2019, I learned about the techniques of dyeing specific to the context of *kalamkari*. In addition, I have pursued a course on natural dyeing at the Weavers’ Service Centre, Hyderabad, May–June 2017, which contributed to my hands-on knowledge.

<sup>7</sup> See, Ruth Barnes, “Indian Textiles for the Lands Below the Winds: The Trade with Maritime Southeast Asia,” in *Cloth That Changed the World*, 77-8.

<sup>8</sup> For mordant solution, the ratio between alum and water used here is 1:5.

Mordanting in *kalamkari* is a technique of selectively applying the mordant solution, either by painting or printing, to the fabric surface where colours are meant to be developed; in contrast, for uniform dyeing, the entire fabric is dipped into the mordant solution. After mordanting, the fabric pieces are required to be dried under the sun for at least two days. Then, those were carefully washed and dried. Before dyeing, I soaked the dyestuffs in water overnight in separate pots. For the dye preparation, soaked dyestuff needed to be simmered for around forty minutes or more. First, I dyed a fabric piece in sappanwood solution (Image 3). The broad triangles, narrow horizontal strips and some details of the fire and other ornamental motifs in this image are mordant-painted. Sappanwood yields a soothing pinkish-red hue in the mordanted areas and leaves a milder tone of pink in the un-mordanted areas of the fabric. Then, I dyed another piece of fabric in *manjistha*. Madder usually develops better in alkaline water; for that, I added a pinch of soda ash to the pot. Once dyed, the fabric pieces were thoroughly dried under the sun (Image 4). A visible difference can be noted between these two fabric pieces; though both of them obtained pale shades after drying, the madder dyed one resonated a tint of terracotta bricks.

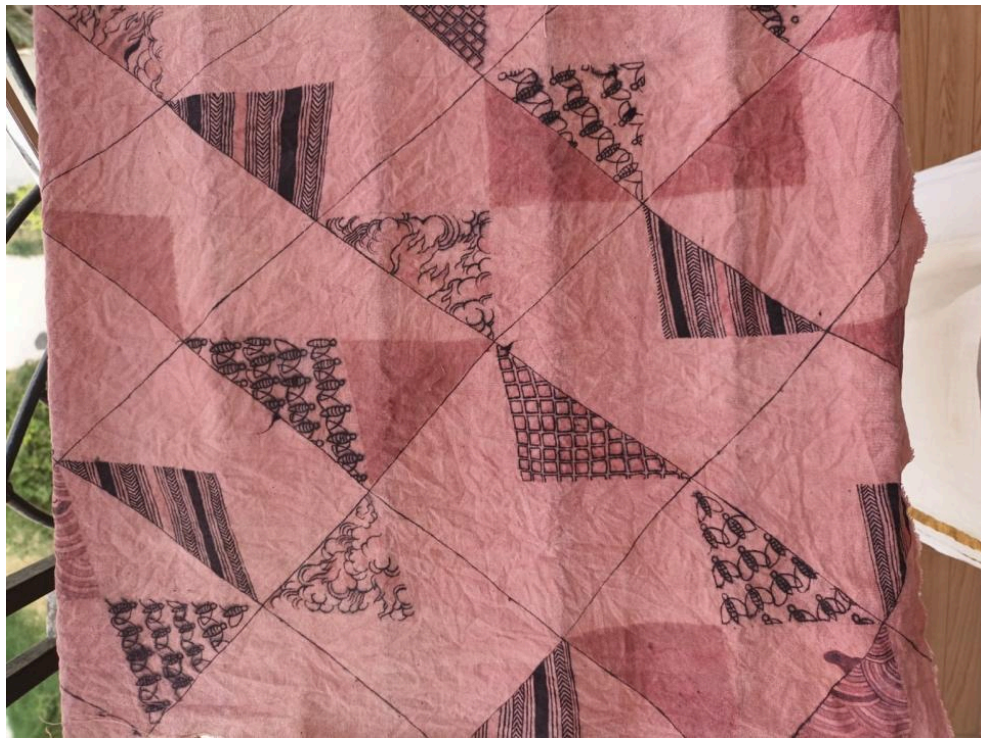


Image 3. *Again*, 16x18 inches, fermented black dye and sappanwood on treated handwoven cotton, 2022. Image courtesy of the author.



Image 4. *Again*, 16x18 inches (a set of two), fermented black dye, sappanwood and *manjistha* on treated handwoven cotton (after the first phase of dyeing), 2022. Image courtesy of the author.

Though *aal* is widely known as the key ingredient for developing shades of dense red in the woven textiles of Kotpad, Odisha, perhaps it is not suited for mordant dyeing. Dye specialist Jagada Rajappa told me that *aal* does not require a mordant to bind with fabric; instead, an elaborate oil treatment is given to the undyed yarns prior to dyeing them in *aal*.<sup>9</sup> Despite knowing this, I wanted to explore this dyestuff. I simmered the *aal* solution in a similar manner to the other two dye solutions. Then, I dipped a mordanted fabric into the dye pot; within minutes, the entire fabric assumed a brownish hue to an extent where the mordanted and un-mordanted areas were hardly distinguishable. The nature of *aal*—observed from the dyeing process—made me wonder whether this dyestuff was used in *kalamkari*, as distinction between mordanted and unmordanted pictorial areas in these textiles is striking. This also showed that if a dyestuff yields excellent results in yarn dyeing it still may not produce the desired outcome in mordant dyeing; the context in which the dyestuff is used determines its performance.

I re-drew the mordanted areas of the *manjistha* and sappanwood-dyed pieces and let them dry. This time, for over dyeing, I chose sappanwood. In the dye pot, I also added a pinch of soda ash, which immediately increased the alkalinity of the water and the solution turned purplish red. After thoroughly washing and drying the fabric pieces, I immersed them in the simmering solution (Image 5). In the dye pot, the fabric initially dyed in sappanwood seemed to absorb the purplish hue of the solution more readily, when compared to the *manjistha* dyed one. After drying, I could observe a visible difference in tonality compared to

<sup>9</sup> Personal correspondence with Jagada Rajappa in Hyderabad, December 2021.

the initial ones, and the colours of the sappanwood-dyed fabric looked prominent and brighter (Image 6). The dyers and dye specialists are divided about the relevance of overdyeing; some believe, the best result is achieved through repetitive dips, whereas others refute that Further research combined with practical experiments as the one described above can throw light on this matter.



Image 5. The boiling of sappanwood solution for the second phase of dyeing, 2022. Image courtesy of the author.



Image 6. *Again*, 16x18 inches (a set of two), fermented black dye, sappanwood and *manjistha* on concentrated handwoven cotton (after the second phase of dyeing), 2022. Image courtesy of the author.



As the final step in my experiment, I prepared the dye pot with sappanwood and alum solution. Dissolving alum in the dye solution instead of applying it beforehand ensures a uniform layer of dye over the fabric surface. I refrained from using soda ash this time to opt for a pinkish red which can be yielded from a slightly acidic dye vat, unlike the purplish tone of the previous dip. After the sappanwood-and-alum solution was heated for forty-five minutes or so, I slowly immersed the fabric pieces. Within a minute, the purplish tone from the previous dip faded away, and shades of pink and red emerged. Many prefer a pale background, which emphasises the mordant-dyed areas on textiles. My intention, on the other hand, was to develop a range of tones to observe the subtle differences between them closely (Image 7).



Image 7. *Again*, 16x18 inches (a set of two), fermented black dye, Sappanwood and Manjistha on treated handwoven cotton (after the final phase of dyeing), 2022. Image courtesy of the author.

## Contrast or Harmony?

As the process of over dyeing unfolded over days, I reflected on the difference between achieving a colour at once, and achieving it over time. Synthesised alizarin, profusely used in *kalamkari* making at present, produces red almost immediately after dipping fabrics in the dye pot. The hurried nature of this action affects the temperament of the colour—red stands out from the background. If the contrast between the red dyed areas and background is high, that directs viewers' attention away from the other visual details of the dyed *kalamkari* textiles. The early modern and early-nineteenth century *kalamkaris* I have studied as part of my research, instead, portray a harmonious balance between the range of tones and interplay of lines; the various aspects of the visuals complement each other but do not overpower. It remains ambiguous whether the dyers from the early modern period

employed overdyeing, or whether there were methods of extracting the maximum amount of dye from the dyestuffs in the first dip, or whether different mordants of varying density were used to attain tonal variation at once. However, as the experiences I shared in this paper have evidenced overdyeing allows overlapping of tonality, which enriches the pictorial arrangement. The complexity of the early modern and the 19<sup>th</sup> century *kalamkari* textiles has developed from a sustained engagement between the practitioners, dyestuff, water and surroundings over time. The complexity and harmony between the visual elements of the dyed and painted Kalamkari surface cannot result from the fast, result-oriented process used primarily today.

## Conclusion

My experiment did not yield a conclusive answer to the long-standing questions around the centrality of a singular dyestuff in the process of enhancing red hues and the significance of overdyeing in *kalamkari* textiles. However, my hands-on approach on the process drew my attention to three major issues. Firstly, even highly potent dyestuff, such as *aal*, produces brilliant hues within the context of yarn dyeing and, perhaps, fabric dyeing; however, it may not perform similarly for mordant painting. Secondly, while reconstructing the red dyes in the early modern *kalamkari* textiles, attention should be paid to the subtle differences between their tones, quality and depth. Finally, the debates around overdyeing need to be complemented by practical experiments to reflect on its possible utilisation in *kalamkari* making. During this experiment, I often ran between my desk and the kitchen, between drawing and dyeing. This stayed as a reminder for me to integrate archival research and hands-on exploration to have a comprehensive understanding of lesser-known facets of our material culture.

## Bibliography

- Aitken, Molly Emma. *The Intelligence of Tradition in Rajput Court Painting*. New Haven and London: Yale University Press, 2010.
- Barnes, Ruth. "Indian Textiles for the Lands Below the Winds: The Trade with Maritime Southeast Asia." in *The Art and Fashion of Indian Chintz*, edited by Sarah Fee, 72-81. Toronto: Royal Ontario Museum, distributed by Yale University Press, 2020.
- Cohen, Steven. "Materials and Making." In *The Fabric of India*, edited by Rosemary Crill, 16-77. London: V&A Publishing, 2015.
- Fee, Sarah. "Creating Colour." In *Cloth That Changed the World: The Art and Fashion of Indian Chintz*, edited by Sarah Fee, 6-7. Toronto: Royal Ontario Museum, distributed by Yale University Press, 2020.

Houghteling, Sylvia. "Sentiment in Silks: Safavid Figural Textiles in Mughal Courtly Culture." In *Affect, Emotion, Subjectivity in Early Modern Muslim Empires: New Studies in Ottoman, Safavid, and Mughal Art and Culture*, edited by Kishwar Rizvi, 124-47. Leiden and Boston: Brill, 2018.

Macahdo, Pedro, Sarah Fee, and Gwen Campbell, eds. *Textile Trades, Consumer Cultures, and the Material Worlds of the Indian Ocean: An Ocean of Cloth*. Laddusaw: Palgrave Macmillan, 2018.

Phipps, Elena. "Global Colors: Dyes and the dye trade." In *Interwoven Globe: The Worldwide Textile Trade, 1500-1800*, edited by Amelia Peck, 120-35. New York: The Metropolitan Museum of Art, distributed by Yale University Press, 2013.

Sengupta, Rajarshi. "Performing Histories: Enduring Dyes and Waterways in Artisanal Lives." *Journal of Textile Design Research and Practice* 8, no. 3 (2020): 335-57.