



Recipes for Re-enchantment: Natural Dyes and Dyeing

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THIS ARTICLE EXPLORES THE DIVERSE STRANDS SUSTAINING THE SELF-CONSCIOUS recovery of natural dyes and dyeing as an ethical (and ecological) craft practice in India. It charts the contested terrain of ideas and beliefs around the production and application of colour in the opening decades of the 20th century. The narrative follows the story of colour along the path of disenchantment¹ via science and industry in the late colonial period and, post-Independence, underscores its location in the national landscape of craft and beyond (figure 1).

I begin by examining the colonial discourse on the ascension of synthetic dyes and its ambiguous reception. Through the voices of some interlocutors, I enquire as to how the call for a “true” swadeshi² sought to re-enchant the practice of natural dyeing for independent India. The images that are included sketch the afterlife of these enquiries. What is the inspiration behind some of the many spaces for natural dyes and dyeing that dot the craftscape of India? Many of these experiments, as we shall see,



have found purchase in the accelerated circulation of vegetable-dyed cloth through niche markets and global fashion, inviting us to reflect upon the lineage of swadeshi in the making and using of naturally dyed cloth.

Colour, Science and Industry

The early 20th century discourse on colour is shadowed with ideas of reproduction and rationalization through the science of chemistry on the one hand, and the economics (and ethics) of industrial production on the other. We know that the artificial synthesis of alizarin and indigo in Europe replicated, replaced and displaced the reds and blues derived from madder and indigo plants, respectively. The science-industry-market nexus ruptured not only small cottage-based dyers across Europe and its colonies but also dealt a blow to the factory-style manufacture of natural dyes supported by imperial capital. The commercial extraction of natural indigo was rendered obsolete³ and the burden of losses borne by peasants and dyers in indigo estates. When Gandhi led the Champaran protest of 1917 in colonial Bihar, the colour indigo was condemned as the permanent “stain” of confinement for bonded plantation labour. The tinkathia system coerced the tenant farmer to plant three out of every twenty parts of his land with indigo for his landlord. The Champaran protest enabled Gandhi to move the government to abolish the system and release indigo farmers from their oppression: “The ryots, who had all along remained crushed, now somewhat came to their own, and the superstition that the stain of indigo could never be washed out was exploded.”⁴

The problem of colour was not simply hinged on the opposition between natural dyes and aniline dyes. The issue was confounded by the threat of alienating artisans

1
Indigo vat at Dastkar Andhra's Dye House, located outside Hyderabad.
Photograph: Pankaj Sekhsaria.
Courtesy Dastkar Andhra.

2 a and b
Natural-dyed scarves by Weavers Studio, Kolkata. The resurgence of the handloom sector in West Bengal is attributed to niche markets created by urban artisanal fashion houses like Weavers Studio (est. 1993) catering to Japanese consumer taste for handwoven, vegetable-dyed textiles.
Courtesy Weavers Studio.

3

Rukmini Devi,
leading guest of honour
and her guru,
Mysore Vasudevachariar,
at the inauguration of the new
weaving and dyeing centre
at Thiruvanimiyur in 1954.
Courtesy Kalakshetra Archives.



from their hereditary occupations on the one hand, and swadeshi petitions for the promotion of an Indian science and industry, on the other. The Industrial Commission Report of 1918 offers a lens into the complexities of the debate around the modernization of traditional crafts. The resurrection of the handwoven carpet industry with the introduction of modern dye houses in jails and missions⁵ was offered as an example of the merits of synthetic dyes. Silk handloom weaving was also cited as having gained a new lease of life in the hands of Saurashtra weavers, leaders among who took to adopting modern methods for the creation of the famed “Madura red” sari in the inter-War years. Tulsiram, a prominent member of the Saurashtra community is known to have learnt the method of dyeing cotton yarn on a large scale with alizarine in the laboratory of the firm Badische in Bombay. The brownish red dyed yarn came to be in high demand and was being produced by a large number of individual dyers in Madurai for requirements of handloom weaving.

Even so, the application of scientific rationality to craft processes was disputable in British India and was received with reservations. Many among the protagonists of the debate acknowledged the obvious estrangement of the Western lab-trained scientist from the Indian artisan hearth. They envisioned “a peripatetic school of visiting experts and exhibitions” instead, and planned to apply science in the service of artisanal production, without destroying the “individuality” and “diversity” of local crafts.⁶ Others like Alfred Chatterton, industrial advisor to the Madras government, disregarded local dyers and their techniques and emphasized the need for a new breed of colour specialists (scientists and engineers trained in chemistry) who could innovate and manage industrial-scale dye-houses handling artificial dye-stuffs.⁷ In 1912, he notes in his monograph, *Industrial Evolution of India*, that the synthetic dye industry in Ma-



4 Kamaladevi initially set up the kalamkari unit in her own premises, with a small grant from the Social Welfare Board. The training was imparted by master-dyer and hand-printer Venkata Rangaiah Naidu in 1978. The unit is now known as the Craft Education and Research Centre (CERC), Chennai. Courtesy Kalakshetra Archives.

durai was “an excellent example of indigenous industry adapted to modern conditions. The dyers are by no means experts in their trade, but they know how to produce the particular shade required by the market”.⁸ Chatterton proposed the setting up of a tinctorial lab and school “where those engaged in the trade can obtain expert advice and instruction” specifically in new methods of synthetic colour application.⁹

The colonial vision of modernizing traditional Indian crafts was also not without contradiction. Whereas the knowledge of colour among artisan dyers was dismissed as obsolete by Indian and British industrial reformers, it was quite apparent that it had also been exploited by Europe for the development of her own industries. E.B. Havell recounts how he was contacted by the Dutch during his tenure as Principal of the Arts and Crafts College at Madras (now Chennai) from 1884, “who desired information regarding the Indian processes of dye-painting on silk and cotton cloth.... Subsequently, I learnt that a Dutch expert was sent out to India and Java to collect information on the spot. Recently, while on a visit to Holland, I observed the results of all this activity in the development of a new Dutch industry at Haarlem and elsewhere: very artistic hand-painted handkerchiefs, neckties, screen-cloths, etc., were being made by the old Indian and Javanese processes, which were followed in every detail...”¹⁰ The denial and planned obsolescence of the custodians of natural dyeing and printing was therefore inconsistent with the value accorded to natural-dyed products in the West.

Proponents of modern chemistry were in fact very aware of the expertise of Indian dyers, even in handling synthetic dyes. Their ability to create new colours, often in conjunction with natural dye-stuffs using family-honed techniques and sensory skills, is documented in colonial records. “In Shikarpur [Maharashtra] for instance, a greenish shade was produced by mixing a green coal-tar derivative with alum; while



a *pista* green combined aniline with pomegranate peel, ferrous sulphate and cotton flowers.”¹¹ F.M. Marsden, chemist and dyeing expert for the government of Madras, believed that dyeing was, in fact, already in the hands of “experts”. According to him, science could at best improve the economics of vegetable dyeing but not the Indian dyer’s mastery and agency over his craft: “The western dyer knows he cannot improve upon the manufacturer’s methods, which are based on the investigation of highly trained specialists, but many if not most Indian dyers...proceed to make alterations and improvements and evolve what they term a secret process of their own....”¹²

Such perceptions of colour as “secret” knowledge, safeguarded among artisan dyers, were however not isolated. They were drawn from wider intellectual currents that rejected the systemic iniquities of capitalist expansion under the empire through the deployment of craft as an ethical practice.¹³

“True” Swadeshi and its Afterlives

Cultural interlocutor Ananda Coomaraswamy, like his contemporaries Gandhi and Tagore, contrasted craft with the “factory hand” and positioned it to confront the materialism of the West and its attendant cultural degeneration. Coomaraswamy’s call for swadeshi in colour via a critique of aniline dyes in the opening decade of the 20th century was, in fact, an inquest upon the industrial uses of scientific research. His disavowal of the industrial application of scientific research was on the basis of human progress—defined, not in terms of technological advancement or financial dividends, but as one governed by ethical choices: “The choice of good and evil has to be presented in order that good might in the end be consciously chosen.”¹⁴

The practice of “true” swadeshi meant a deliberate de-centring of the for-profit science laboratory and recasting of cloth dyeing and printing clusters as the new humanistic repositories and spaces for discovery and innovation in colour. The discourse on craft production as a critique of, and resistance to, science and industrial manufacture, in the opening decades of the 20th century, therefore aimed to restore the crucial link of practitioners to their exceptional past and shared present. The exemplary practice and experience of the anonymous master-dyer was pitted against

the spectre of chemical deconstruction (into molecular compositions, standardized procedures and industrial knowhow) of colour as a commons. Embodying indigenous knowledge about natural resources, tools, techniques and processes transmitted via the artisan household, craft became a means for the re-enchantment of the world rapidly fragmenting under the rising factory civilization.

The craftscape drawn by Kamaladevi Chattopadhyay and her associates (Jasleen Dhamija, D.N. Saraf and Mohana Ayyangar) memorialized collectively held mastery of plants, recipes and dyeing skills through state patronage of natural dyes. The founding of the All India Handicrafts Board (AIHB) in the early 1950s coalesced the discovery of master-artisans into a pan-Indian network of craft knowledge and skill that could be drawn upon, experimented with, and even disseminated to remote and disparate craft locales. In 1957 when Kamaladevi first went to Masulipatinam [now Machilipatnam], she found that the kalamkari cooperative was at the verge of closing down but for the requirement of a small sum of Rs 5,000. In Kalahasti, the only artisan who did know the technique of dye extraction and painting on cloth had not produced a kalamkari in ten years and was very reluctant to part with his knowledge. Her biographer notes: “It was only after many visits by Kamaladevi that, in 1957, he agreed to start a Training Centre with six students—first preference being his children as it was a family trade—initiating them into the entire traditional manufacturing process. In 1957, the Handicrafts Board sanctioned stipends of Rs 40 per month to the apprentices. In 1959, it commenced production by adapting the immeasurably large scrolls to a smaller size that could be hung in homes. Material was also produced for curtains, table linen and other items. The products from the centre were marketed at the World Agricultural Fair in 1959 which created a stir in the export market.”¹⁵

Under the aegis of the Board, Kamaladevi initiated a dye research laboratory at the weaving department at Kalakshetra, the centre for the arts set up by theosophist Rukmini Devi Arundale (figures 3 and 4) in Thiruvannamiyur (Chennai) in 1954, which was subsequently shifted to Bangalore in 1955. It was here that chemist K.V. Chandramouli gained the reputation of a natural dyes expert and trainer through his research into the living archive of natural dyes and dyeing in India. By 1960, the laboratory had conducted 1,650 experiments using 69 vegetable dye-stuffs towards the development of a standard shade chart of colour-fast natural dyes.¹⁶ During the latter part of his life, Chandramouli found non-governmental support at Dastkar Andhra, a platform that allowed him to travel and teach natural dyeing not only in remote villages in India but also in Bangladesh and Uzbekistan.

In Kamaladevi’s vision of a crafts-based future for India, practitioners would be “social leaders” in the rejuvenation of the handicraft and handloom sector. She was aware that artisans are bound by collective norms to share knowledge and trade secrets with their apprentices and offered a viable model for transmission: “The teacher spurs the pupil to surpass himself and takes genuine pride in conceding superior-



6 Co-founder of Soma Block Prints, Andree Pouliot, with Yasin, master indigo-printer in Balotra, Barmer District, Rajasthan, 1990. Courtesy Andree Pouliot.

Sikka/Loose Change:
Cold Cash Fabric (detail),
design by Bindaas Unlimited,
developed in association with
Chaubundi Crafts' Collective
in Kaladera, Rajasthan.
Hand-block print in cotton
and natural dyes, 1997.
Courtesy Meeta Mastani/
Bindaas Unlimited.



ity to the student.”¹⁷ Chandramouli is known to have acknowledged his debt to Kamaladevi’s pedagogic vision in motivating him to collaborate with master-dyers and in turn share his received knowledge and experience of natural dyes for promoting its artisanal application on cloth for new markets. By 1957–58, the centres at Surat, Kothakota, Kanchipuram, Madurai, Masulipatinam, Kalahasti and Ahmedabad had supported local weavers, printers and dyers to transfer their skills to the next generation.¹⁸ By the time of his death in 1997, Chandramouli’s work in resurrecting and transmitting the knowledge of India’s natural dyes tradition was a “legacy” that needed to be “built” upon for the future. In the PPST (Patriotic People’s Science and Technology) *Newsletter*, editor and swadeshi engineer from IIT Madras, L. Kannan’s eulogy to Chandramouli reflects this shared vision for natural dyes: “It is only when one looks around at various organisations across the country working on natural dyes, meets experts of eminence in the field, comes across groups of artisans who have in recent years taken to the revival of interest in vegetable and mineral colours...it is only when all of them unequivocally assert their debt of gratitude to ‘Chandramouli Sir’ that one gets a glimmering of the extraordinary contribution that one man has made to transform a nearly extinct art into a promising technology of the future.”¹⁹

The master-dyer embodies the postcolonial imaginary of India’s craft future. His experience with colour inhabits an expanded notion of swadeshi, first articulated in the opening decades of the 20th century. “True” swadeshi was conceived as an ideal whose pursuit is articulated through exemplary practice, often elusive to institutional structures or dominant narratives. Master-dyers like Yellappa, Ajit Das, Ismail Khatri, Abdul Jabbar Khatri and many others (figure 5) initially galvanized by state and non-state patronage, are valorized as “trustees” whose peregrinations have crystallized the natural dyes vernacular knowledge network and the lineage of next generation recruits.²⁰ India’s craft discourse centre-stages them not only for their mastery over recipes and their application on cloth but also for inspiring new ways of comprehending colour. In many other cases, private design studios and brands have collaborated

with master-dyers and artisans to emerge a new vocabulary of contemporary designs based on traditional techniques of natural dyeing (figures 6 and 7).

At Dastkar Andhra, Uzamma and others learned from Yellappa for instance that “for indigo to be authentic, one had to have the right soul, the right soil, the right climate, but also the right people to listen, hear and tune in.”²¹ Indeed their excellence is enunciated as the pursuit of distinction on the basis of “standards” (not standardization)²² in colour contingent upon, and in non-violent harmony with, local ecologies. The master-dyer’s intuitive and embodied ordering of the world, in the language of colour, reinstates dyeing as an ethical practice that resists the violence of mass-produced and inert compounds, cakes, bottles and tubes (figures 1, 2 and 8).

To Conclude

This article has been an invitation to reflect upon the 20th-century genealogy of a “true” swadeshi in colour. And, more specifically, to recall the principles of “mastery” sacralized in early efforts of resistance to synthetic dye manufacture. This is evident in the several small and significant sites impelled by the vital knowledge and experience imparted by master-dyers (figures 9 and 10).

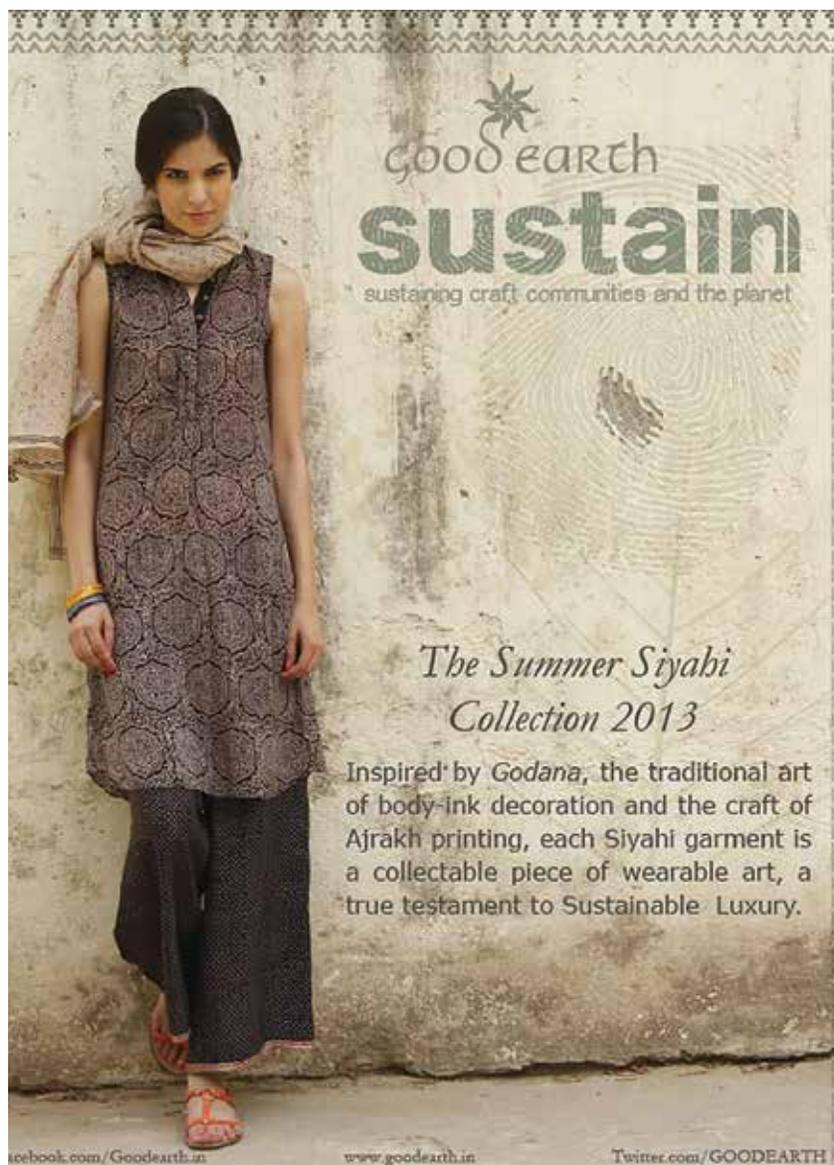
Coomaraswamy’s critique of synthetic dye manufacture anticipated the annihilation of colour as embodied knowledge. But the conundrum of “science vs art” and “factory vs cottage” remains. The transmission of skills and knowledge through a line of masters and apprentices is an occasion for the ethical practice of craft. But sharing of secrets also renders dyeing as a vocation vulnerable to mass manufacture and duplicity. The silencing of craft ecologies has also meant a shift from the aesthetic and sensory experience of colour to the more rationalized perception of dye production and use. Narratives of “genuine vs fake”, “pure vs adulterated”, “permanent vs fugitive” therefore fuel the exchange of naturally dyed cloths to the detriment of their variegated qualities of shade, tone, tint and effect.

A century after Coomaraswamy’s critique, commercially manufactured concentrates of “natural” dyes are techno-science’s response to environmentally conscious fashion. Will such “innovations” overwhelm and eclipse the lineage and practice of “true” swadeshi in colour? For now, however, they must jostle for space with the quietly growing dyeing sites (and peripatetic master-dyers) under India’s re-enchanted dyes rainbow.

NOTES

1 The term is used in the social sciences to refer to the character of the modern West

as being based on scientific rationality, where processes are bureaucratized, and



8 Advertisement for ethically sourced and produced natural-dyed garments by Goodearth, a niche design retail chain. The enchantment with vegetable dyes is seen here through the prism of the global Fair Trade consumer movement that demands ethical practices in fashion and hand-crafted contemporary design which includes sourcing from small producer groups in developing countries and wage equity for artisans. Courtesy Goodearth.

Delhi-based contemporary artist Shelly Jyoti's work is consistently inspired by the hand-dyeing textile traditions of India. Seen here is a collaboration with ajrak artisans, Juned Ismail Khatri and Sako Bhai, 2013–14. Khadi and natural dyes. Courtesy Shelly Jyoti.



- secular values rather than intuition and belief govern worldviews.
- 2 The word swadeshi is used here neither for its literal meaning—"of one's own country"—nor for its reference to the movement to boycott British-made products that began in 1905. Instead, following Gandhi and Coomaraswamy, swadeshi refers to a self-conscious recognition of our cognitive entrapment by expansionist forces of imperialism via religion, science, technology, development and culture. Most significantly, swadeshi is a lens of awareness rejecting all forms of violence inflicted upon human and non-human nature.
 - 3 India's world monopoly over the export of indigo fell drastically: "Within a span of ten years exports of indigo fell from 19,000 tons in 1895–96 to approximately 11,000 tons in 1913–14. Over 200,000 acres of land devoted to indigo lay idle." S.Visvanathan, *Organizing for Science: The Making of an Industrial Research Laboratory*, Delhi: Oxford University Press, 1985, p. 6.
 - 4 M.K. Gandhi, *An Autobiography or The Story of my Experiments with Truth*, Ahmedabad: Navjivan Press, 1999, pp. 337–57.
 - 5 The chemist, F.M. Marsden, observed that it was only in the jails and the missions of Madras that one found modern dyeing houses. Subramaniya Iyer of the Department of Industries, Madras, claimed that "the Central Jail at Vellore had helped serve the carpet industry" and held that "but for certain jails in India the carpet industry might have been in much worse condition." (ICOM Minutes, Vol. 3, p. 179). Quoted in Visvanathan, *Organizing for Science*, pp. 51–52.
 - 6 *Ibid.*, p. 82.

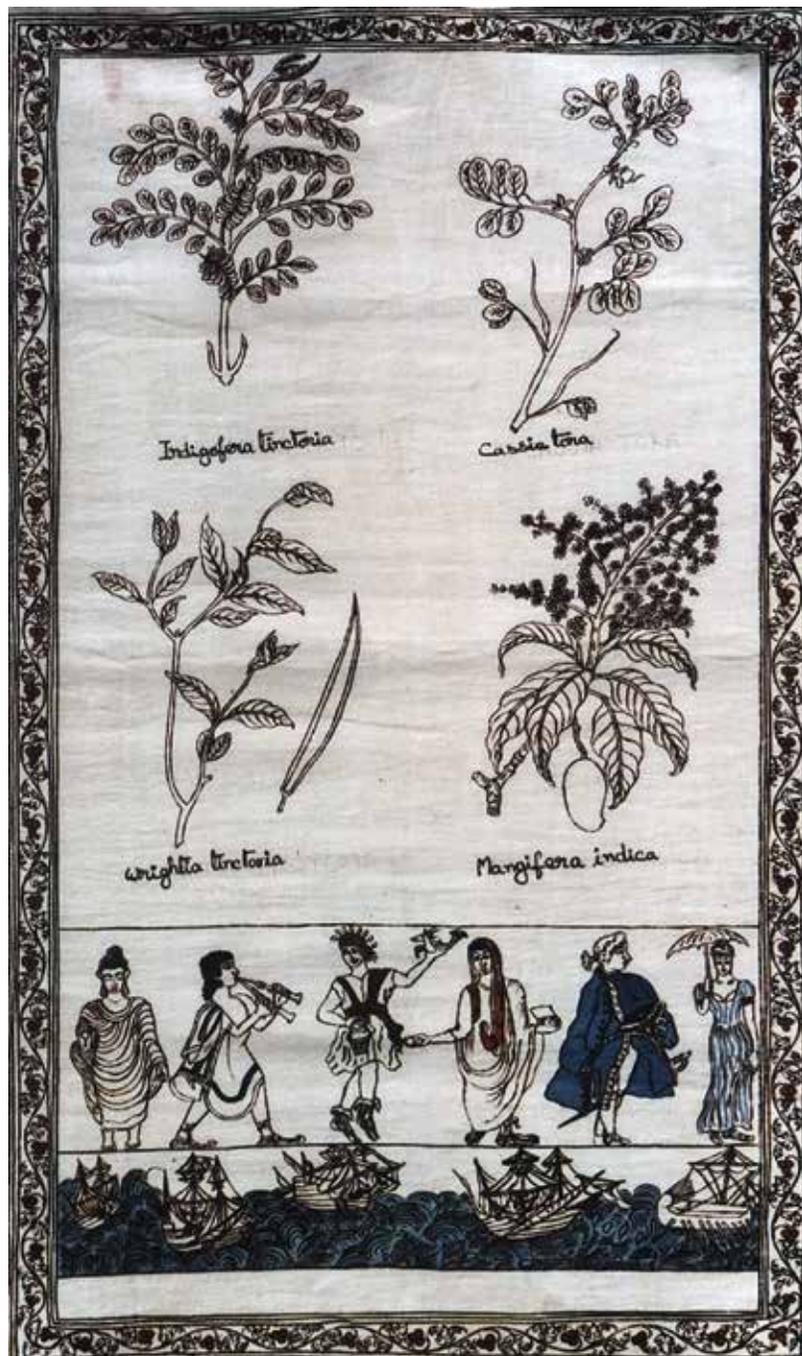
- 7 Alfred Chatterton, *Industrial Evolution in India*, Madras: Hindu Office, 1912, p. 39.
- 8 *Ibid.*, p. 132.
- 9 *Ibid.*, p. 39.
- 10 E.B. Havell, *The Basis for Artistic and Industrial Revival in India*, Madras: The Theosophist Office, 1912, pp. 10–11.
- 11 Quoted in S. Balaji, “The Essence of Colour: Traditional Dyes and Dye-Usage: 1734–1983”, in exhibition catalogue *Pudu Pavu: The New Warp*, Chennai: Co-optex, pp. 32–43 (p. 41).
- 12 ICOM Minutes, Vol. 3, p. 154. Quoted in Visvanathan, *Organizing for Science*, p. 83.
- 13 Elsewhere I have discussed how craft was deployed in anti-colonial discourse not only as a justification of nationalism but also as an inquiry into the human condition itself.
- 14 The essay “The International Congress of Applied Chemistry and Aniline Dyes” appears in Coomaraswamy’s book *Art and Swadeshi* published in 1912. The article first appeared in 1909 in *The Modern Review* (Calcutta), vi.
- 15 R. Nanda, *Kamaladevi Chattopadhyay: A Biography*, Delhi: Oxford University Press, 2002, pp. 132–33.
- 16 *Ibid.*, 2002, p. 133.
- 17 Kamaladevi Chattopadhyay, “Crafts and the Future”, *India International Centre Quarterly*, New Delhi, Vol. 11, No. 4, 1984, pp. 5–13 (p. 10).
- 18 L. Kannan, “Building on Chandramouli’s Legacy”, *Textiles Working Group Newsletter*, Chennai: PPST Foundation, 1997, p. 1.
- 19 *Ibid.*
- 20 One such lineage from south India is described in A. Mamidipudi, “Towards a Theory of Innovation in Handloom Weaving in India”, unpublished doctoral dissertation, Maastricht University, The Netherlands, 2016.
- 21 Shiv Visvanathan, “The Last Trustee of Indigo”, *The Hindu*, November 25, 2014.
- 22 Uzramma, “A Future Vision for Natural Dyeing in India”, unpublished paper for the National Biodiversity Strategy and

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Action Plan (NBSAP), 2002 [a project of the Ministry of Environment and Forests, Govt. of India]. Processes of standardization produce homogeneity in colour articulation. They disregard mutations in materials and climatic conditions, sacrificing the immense diversity in the extraction and application of colour.

10
The recent re-enchantment with natural dyes has equally been led by designers as well as international artists, as in the case of France-based Berenice Ellena’s work. Seen here is a design of a hand-printed and dyed kalamkari by Ellena, executed by master artist J. Niranjan of Srikalahasti, Andhra Pradesh. The illustration shows the various plants used for vegetable dyeing processes. This work was designed for Hermès in 2003 and donated to the Mulhouse Museum in France subsequently. Courtesy Berenice Ellena.