THE INDIGO FACTORY

A Visual History

FAIR

Sashi Sivramkrishna

With a name that means 'The Indian' or 'From India', the colour Indigo is woven cosily into Indian History for over 6000 years.

~Mooldhaga

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Contents

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The usual caveat, however, applies. The author takes full responsibility of any errors and/or omissions in the book.

Preface

Throughout history, certain commodities have played pivotal roles in shaping the economic, social, and political landscapes of societies. The history of commodities during the period of colonization is a complex tapestry that intertwines with the evolution of contemporary supply chains and global trade. By examining the colonial past, we gain invaluable insights into the economic and social dynamics that continue to influence modern industrial production, management and trade practices.

During colonization, commodities such as indigo, opium, tobacco, cotton, tea, coffee, and sugarcane were not merely goods to be traded; they were instruments of power and control. European empires established expansive trade networks, exploiting both the natural and human resources of colonized lands. This exploitation laid the groundwork for the global trade systems we see today, where the flow of goods often follows the same routes established during colonial times.

The supply chains that support contemporary global trade have their roots in the colonial era. The infrastructure developed for transporting commodities like cotton and sugarcane from colonies to European markets has evolved into the complex logistical networks that facilitate today's trade. Understanding the historical context of these routes helps us comprehend why certain regions remain central to global trade and why some supply chains are more resilient than others.

Colonialism also established economic patterns that persist to this day. The division of labor, where colonies supplied raw materials and the colonizing nations provided manufactured goods, still echoes in the modern world, where developing countries are often suppliers of raw materials to industrialized nations. This historical perspective is crucial for understanding contemporary economic disparities and trade imbalances.

The institutions that govern global trade, including legal systems and financial structures, are also products of the colonial era. The policies and practices that were implemented to manage the trade of commodities like opium and indigo have been adapted and integrated into current international trade agreements and organizations.

The colonial history of commodities provides a lens through which we can analyze and understand the intricacies of contemporary supply chains and global trade. It reveals the long-standing economic relationships and power dynamics that continue to shape our world. By studying the past, we can strive for a more equitable and sustainable future for global trade.

Through a proposed series of books and other media (including documentaries and Web resources) on the visual histories of such commodities (beginning with this book on indigo), the Foundation to Aid Industrial Recovery (FAIR) seeks to educate and disseminate information that underscores the importance of historical understanding in analyzing present-day industrial production, global trade and supply chains, highlighting the enduring impact of colonial commodity trade on modern economic practices.

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The Indigo Factory

Welcome to **"The Indigo Factory: A Visual History,"** a captivating journey through the rich tapestry of indigo-making and its profound impact on lives across the globe. This book is an homage to the legacy of indigo, a dye that has colored our world in shades of deep blue for centuries.

As you turn these pages, you will be transported to the heart of indigo's story, from its origins to the rise and fall of the factories in India. Through a collection of stunning photographs, historical documents, and our own explorations, we explore the indelible mark indigo has left on society.

Each chapter unfolds a different era, revealing how this vibrant dye became more than a simple commodity, to a product that reinforced colonialism but at the same time, laid the basis for India's freedom struggle against the British Empire. The visuals within this book are not just images; they are windows into the soul of indigo, capturing the essence of its enduring beauty and the mundane facets of its production.

"The Indigo Factory: A Visual History" is more than a book; it's an educative experience that celebrates the resilience and adaptability of indigo, inviting readers to appreciate the depth and richness of this extraordinary colour that continues to fascinate and inspire.

So, sit back, pour yourself a cup of coffee, and immerse yourself in the visual experience of indigo's remarkable journey through time.

1

Origins of Indigo

In hues of deepest midnight blue,
A tale unfolds of indigo's hue.
From ancient soils where it first grew,
To cloths of kings, a regal view.

In Indus Valley's fertile land,
Five thousand years, by artisan hand,
The nila bloom, in vibrant strand,
Spread far and wide, from India's sand.

Eliza Lucas, in fields of green,
In Carolina's lands unseen,
Grew indigo, a cash crop queen,
Her legacy, in blue jean sheen.

A color bound to labor's pain,
To slavery's harsh, inhumane chain,
Yet, in its depth, we find again,
A pigment rich, with much to gain.

From Peru's past, six millennia old,
To Egypt's tales, in papyrus told,
Indigo's story, forever bold,
In every thread, its history's hold.

Now synthetic, in labs it's made,
No longer from the earth's own shade,
Yet still its ancient power won't fade,
In indigo, history's displayed.

1. Indigo plant reading for processing

Indigo, the deep blue dye that has been a part of human history for millennia, has its origins shrouded in the mists of time. The earliest known use of indigo dates back over 6,200 years to the pre-Columbian civilizations of Peru, where it was used to dye cotton fabrics. This discovery at Huaca Prieta suggests that the knowledge of indigo dyeing was well established in the Americas long before it appeared in other civilizations.

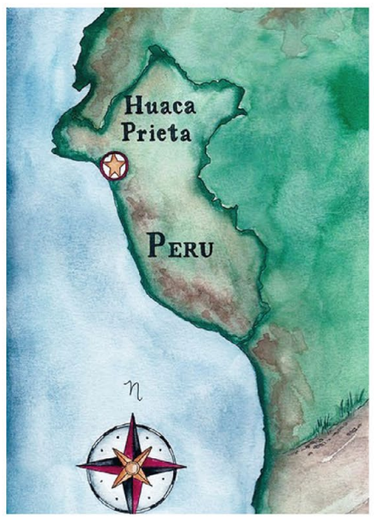
The journey of indigo continued in ancient Egypt, where it was a symbol of royalty and divinity. The Pharaoh's sail, dyed with indigo, signified power and wealth, and the dye was extracted from sea snails, which were abundant in the Mediterranean region around 2000 BC. This use of indigo in Egypt marked the beginning of its association with the ruling classes and its integration into the trade networks of the ancient world.

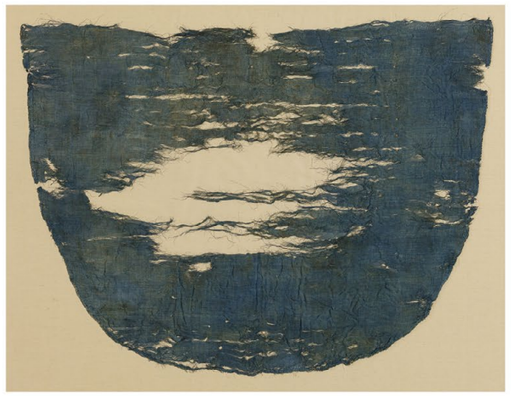
However, it was in the Indian subcontinent that indigo truly flourished. The region's native plant, *Indigofera tinctoria*, was cultivated extensively, and the dye extracted from it was referred to as 'blue gold'. Indigo from India, known as 'nila', meaning "dark blue", was a significant commodity in the trade routes and was highly valued in the West. The cultivation of indigo in India is thought to have existed more than 5,000 years ago in the Indus Valley, present-day Pakistan and northwest India.

The earliest history of indigo is a fascinating tale that spans continents and civilizations. From the ancient sites of Peru to the royal garments of Egypt and the fields of India, indigo has left an indelible mark on our history, shaping the way we view color and its place in our cultural heritage.

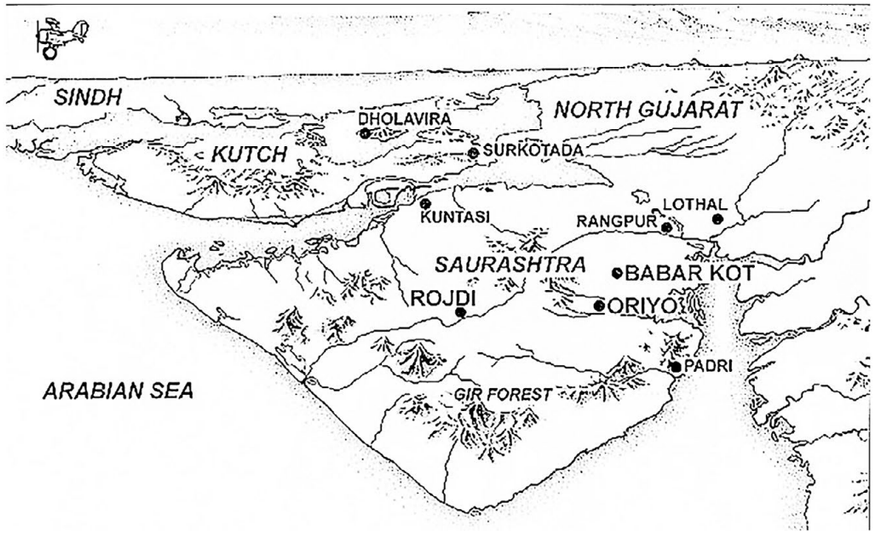
2. In 2016, archaeologists uncovered several scraps of indigo-dyed fabric at the Huaca Prieta ceremonial mound in northern Peru. The fabric is believed to be about 6,200 years old and the indigo was most likely from Indigofera, an indigo-producing plant native to the tropics of South America.

3 & 4. The mound of Huaca Prieta in Peru.





5 & 6. December 1907; Theodore M. Davis, a wealthy American who was funding excavations in the Valley of the Kings, discovered a small pit near a tomb with approximately a dozen large sealed whitewashed storage jars that contained, among other things, pieces of linen dyed with indigotin dated to Years 6 and 8 of a king named Tutankhamun who reigned between ca. 1336–1327 B.C.

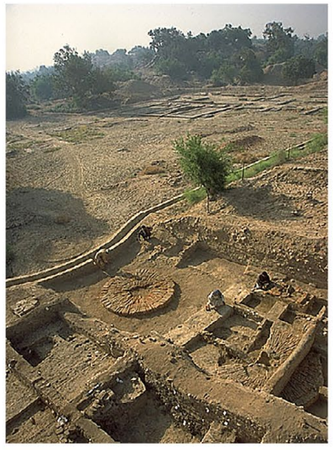


7. Archaeologists at the town of Rojdi in the present-day state of Gujarat, India, recovered seeds from at least four different species of the genus Indigofera from an excavation site, dating it back to 2500 -1700 BC.

A series of working platforms made of concentric circles of bricks, originally inside buildings, were uncovered in Mound F at Harappa. Material associated with one suggests that indigo dye was prepared here. (Harappa Archaeological Research Project, Courtesy Department of Archaeology and Museums, Government of Pakistan)

8. Archaeologists recovered remnants of cloth dyed blue dated to 1750 BC from Mohenjo-Daro (present day district of Larkana, Sind, Pakistan), another town of the Harappan Civilization.

9. The bust of the Priest-King found in Mohenjo Daro wears a garment with a trefoil pattern identified with Ajrakh, arguing a knowledge of indigo dye 5000 years ago.



10. The circular platform excavated by Mortimer Wheeler in 1946 (left) and the one excavated by HARP in 1998 (right). Both of these platforms were found inside small square rooms that originally had baked brick walls, subsequently removed by brick robbers (Trench 43).

11. Greenish clay layers were found in a deep depression in the center of the HARP-excavated platform. One theory that is being investigated is that the platform and the central pit were used for production of indigo dye (Trench 43).

12. Indigo (dye) was first introduced into international trade from India during the Greco-Roman era (300 B.C to 400 A.D.). The Greeks named it Ινδικόν (indikon) meaning Indian or from India because they were infatuated with this deep shade of blue as were other Europeans. The word was adopted to Latin as indicum. Romans dyed their clothes in indigo and other colours.

13. A tablet showing the trading of indigo in Rome.

14. First page from the Editio Princeps of the Pliny's "Historia Naturalis" printed by Johann of Speyer. Venice, 1469. Bibliothèque Nationale de France, Réserve des livres rares, VELINS-493.

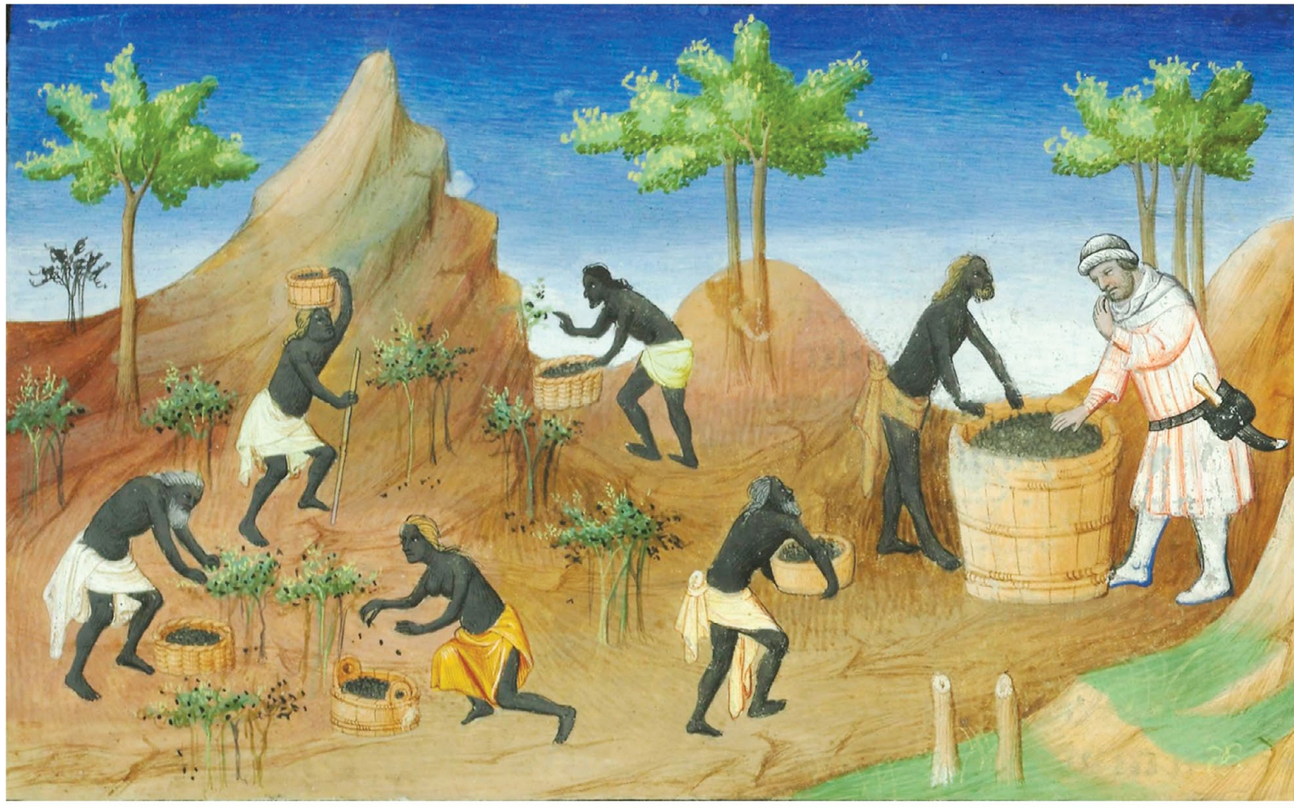
Naturalis Historica by the Roman writer, Gaius Plinius Secundus (AD 23/24 – AD 79), called Pliny the Elder. It is probable that in this period the process of manufacturing indigo was a very rude one, and consisted merely in the separation of a portion of the vegetable from the remainder.

"Next in esteem to this is indicum, a production of India, being a slime, which adheres to the scum upon the reeds there. When powdered, it is black in appearance, but when diluted in water it yields a marvelous combination of purple and cæruleum. There is another kind, also, which floats upon the surface of the pans in the purple dye-houses, being the scum, which rises upon the purple dye. Persons who adulterate it, stain pigeons' dung with genuine indicum, or else colour Selinusian earth, or anularian chalk with woad.

The proper way of testing indicum is by laying it on hot coals, that which is genuine producing a fine purple flame, and emitting a smell like that of sea-water while it smokes: hence it is that some are of opinion that it is gathered from the rocks on the sea-shore. The price of indicum is twenty denarii per pound. Used medicinally, it alleviates cold shiverings and defluxions, and acts as a desiccative upon sores."

The article referred to as indigo from Kerala, India, in the Middle Ages (500-1500 A.D.) by Marco Polo, a Venetian explorer and trader, must have been very similar to the indigo of the present day.

"They have also abundance of very fine indigo. This is made of a certain herb which is gathered, and [after the roots have been removed] is put into great vessels upon which they pour water and then leave it till the whole of the plant is decomposed. They then put this liquid in the sun, which is tremendously hot there, so that it boils and coagulates, and becomes such as we see it. They then divide it into pieces of four ounces each, and in that form, it is exported to our parts. And I assure you that the heat of the sun is so great there that it is scarcely to be endured; in fact, if you put an egg into one of the rivers it will be boiled, before you have had time to go any distance, by the mere heat of the sun!"



15. Le livre des merveilles, Bibliothèque nationale de France, created 1410.
(Although this picture only depicts agricultural activity in tropical regions, it gives us an idea of how farmers worked at that time on indigo cultivation and collection).

2

Dyer’s Woad

From ancient soils, a flower bloomed,
A hue of blue, in history groomed.
Woad, the plant, through time consumed,
In dye and medicine, it loomed.

In Egypt’s tombs, it lay with kings,
A colour steadfast, on linen wings.
Through Turkey, Greece, to Celts it clings,
A migrant shade that trade route brings.

In Europe’s heart, it found its fame,
In England’s fields, it claimed its name.
With Boudicca, it rose to flame,
On warrior faces, a blue acclaim.

Medieval guilds would cultivate,
In Toulouse’s walls, it sealed their fate.
A blue so deep, it would dictate,
The wealth of towns, the artist’s slate.

But time would turn, and so it faced,
A rival dye, its past erased.
Indigo’s bloom, it was displaced,
Yet in craft’s revival, it’s embraced.

Now woad stands tall, in history’s page,
A sustainable blue, from age to age.
A tale of colour, from sage to sage,
Woad’s legacy, our heritage.

16. Dyer's woad (Isatis tinctoria).

The use of woad, Isatis tinctoria, for the purpose of dyeing blue seems to have been known in Europe from the earliest times. We are told that the Britons stained their bodies blue with woad to give themselves a more formidable appearance in battle. Pliny informs us that their women, before entering on certain sacred rites, employed the same means of colouring their bodies to acquire the appearance of dark skin.

Woad once the cornerstone of the blue dye industry, played a significant role in the economies and cultures of Europe up until the 18th century. It was the primary source of blue dye in Europe and was deeply embedded in the fabric of European life, colouring everything from the garments of peasants to the finery of the nobility.

The cultivation of woad was a labour-intensive process that required specific climatic conditions, found in regions of France, Germany and Italy. The leaves of the woad plant were harvested, dried, and then fermented to create a paste that yielded the blue dye. This dye was famed for its fastness and the richness of colour it imparted to textiles.

Its trade was regulated by laws designed to protect local industries. In England, for instance, the use of imported indigo was banned for a time to protect the domestic woad industry. This protectionism highlights the importance of woad to the European economy.

17. Modern representation of Boudicca: The Celtic Queen who unleashed fury on the Romans.

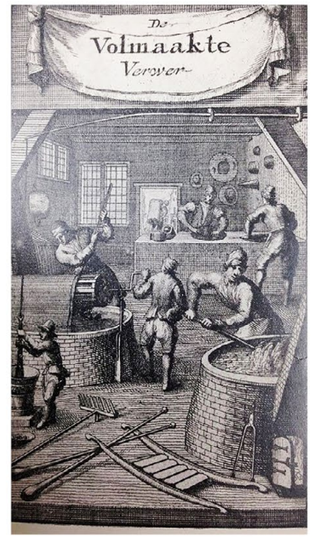
18. Pictish man holding a shield (litho), John White (fl.1570-93).

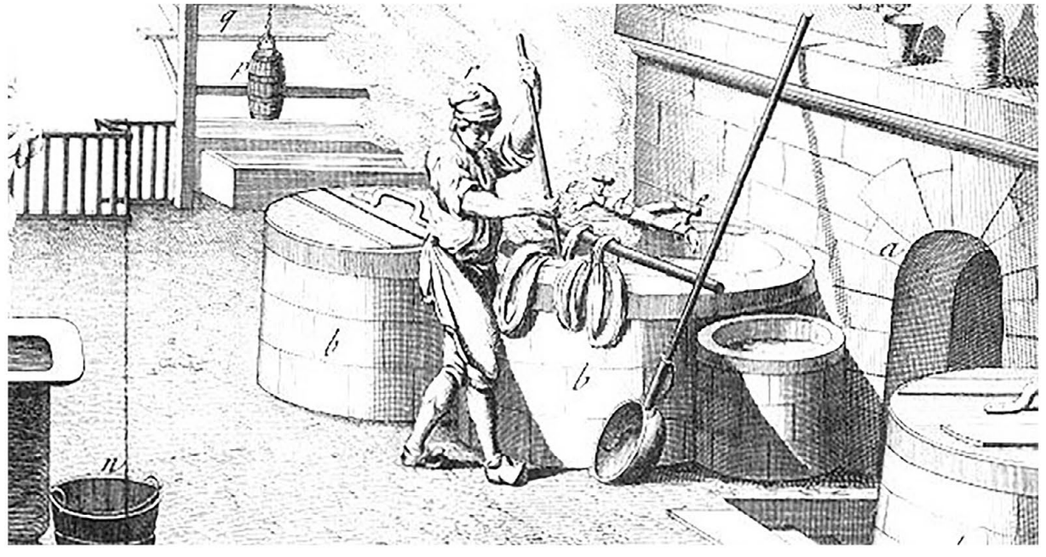
19. Fra Carnevale - The Birth of the Virgin. The use and preciousness of this colour in clothing can be seen in the paintings and portraits that illustrate (between 1200 and 1600) noble characters and religious figures wearing woad blue dresses, mantles and accessories. The painters depicted people dressed in woad-dyed textiles, but using mineral pigments that imitated as closely as possible the shade of the naturally dyed fabric: they used lapis lazuli and azurite, for example.

20. The tapestry series The Hunt of the Unicorn (No. 6: The Unicorn is killed and brought to the castle. It was dyed (c.1500), with weld (yellow), madder (red), and woad (blue).

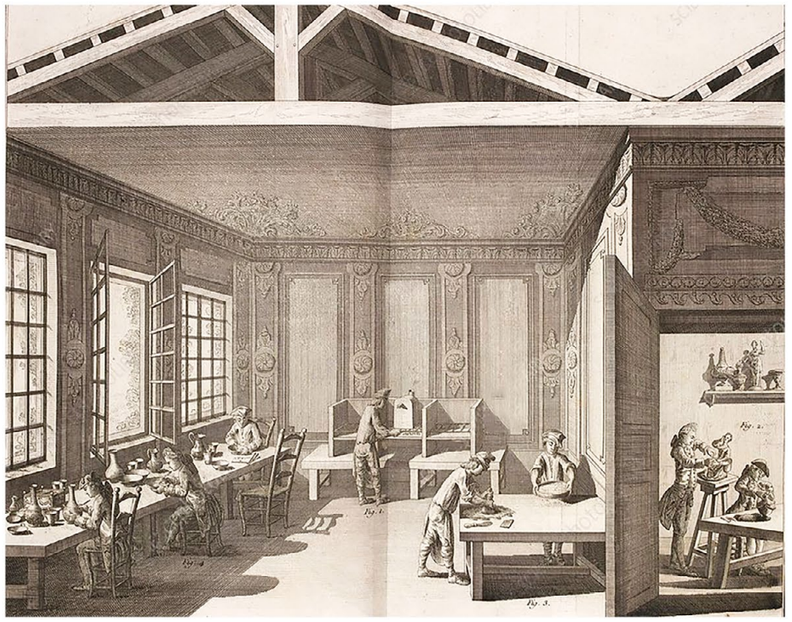
21. European dyer, 17th century.

22. A dyer in Die Numberger Hausbucher, ca. 1665.

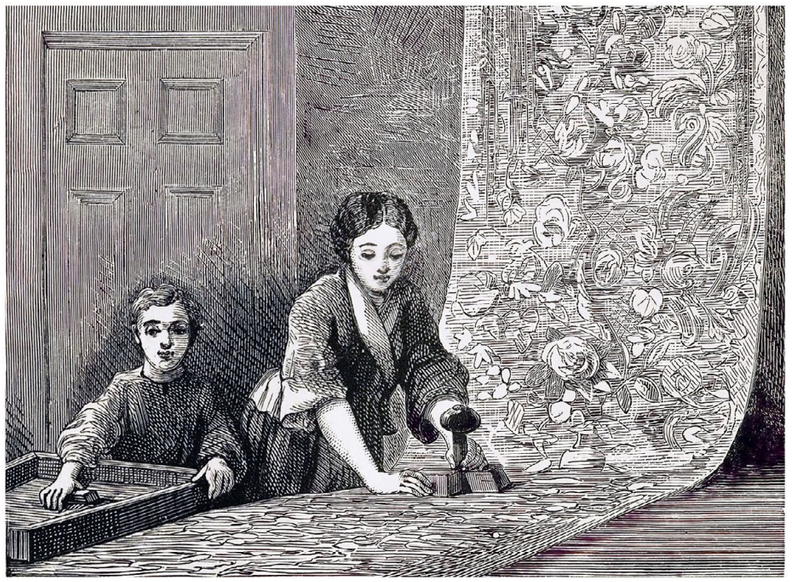




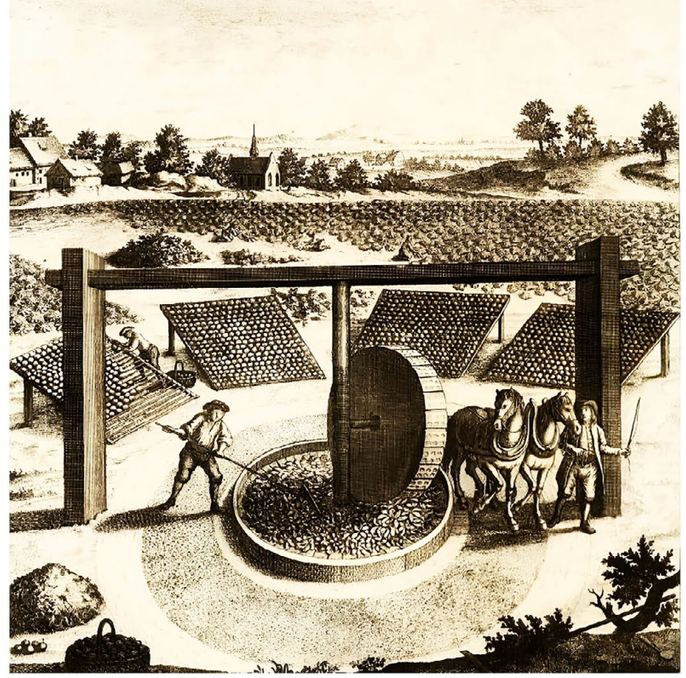
23, 24, 25. Eighteenth century dyes and dyeing.



26. Indigo dye factory. 18th-century artwork of the processes used at an indigo dye factory. Indigo dye is extracted from plants such as Indigofera tinctoria. The plant's leaves are soaked to extract the chemical indican, which is then fermented to produce the dye (indigotin). This artwork is from a report forming part of a series describing arts and crafts for the French Royal Academy of Sciences ('Descriptions des arts et metiers'). This artwork is from the report 'L'Art de l'indigotier' (Paris, 1770) by Paul de Beauvais-Raseau, captain of a company of soldiers in Saint-Domingue (now Haiti) in the Caribbean.



27. Block printing.



28. Illustration of German woad mill in Thuringia, 1752.

29. The Fens in England, including areas like Parson Drove, were known for their woad cultivation and dye production. Woad Mill at Parson Drove by Alfred Balding of Wisbech (fl. 1887-1903), c. 1900. Inside the roller house of the mill at Parson Drove near Wisbech, Cambridgeshire, England, three crushing wheels are drawn by horses around a circular pan, while workers knead the crushed leaves of woad into balls and carry these to the drying ranges outside. The mill was demolished in 1914.

30. Woad Mill, Parson Drove c.1900 (photo J Palmer Clarke) (Cambridgeshire Collection)

3

Woad's Decline

In Europe's fields, woad once stood proud,
Its blue dye bright, its history loud.
From ancient times, it was allowed,
To colour cloth for both the humble and the proud.

But then there came a rival true,
From eastern lands, across the blue.
Indigo, with a deeper hue,
Began to change the dyeing brew.

The traders brought the foreign dye,
Its vibrant colour caught the eye.
And though the woad did still apply,
Indigo was now the sky.

Laws were passed, the old to guard,
Woad's industry was hit hard.
But commerce flows, can't be barred,
Indigo's use became unmarred.

Woad's blue faded, lost its crown,
As indigo's fame spread around.
A new king in the colour town,
Woad's reign ended, with barely a sound.

Yet, let's not forget the past,
Woad's legacy will forever last.
In history's dye, it's been cast,
A plant of old, with a shadow vast.

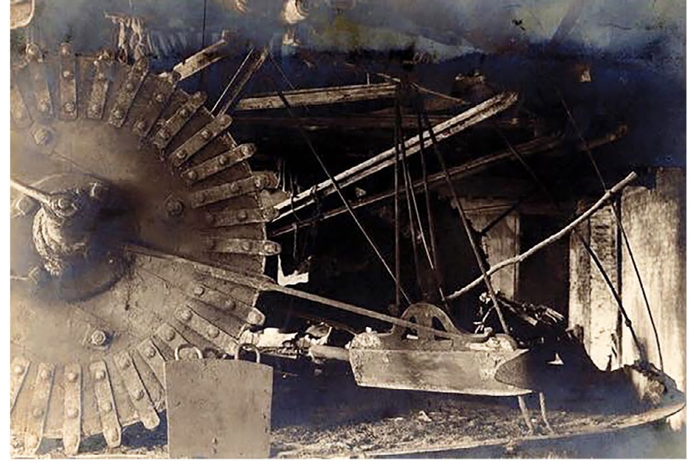
31. Woad spade, for weeding woad fields.

Towards the end of the sixteenth century the European dyers had begun to recognise that indigo afforded the means of a great economy, and that the dye was at the same time of a superior quality. At this period the dyers of Holland were the most famous and prosperous in all Europe. Even down to the beginning of the 17th century the English manufacturers sent their white cloths to be dyed in Holland. From this trade the fortunes of the great Dutch capitalists were made; but difficulties with Portugal led to the Dutch making an effort to procure their supplies direct, instead of through the Portuguese merchants. For nearly a century Lisbon rivalled even Venice as a depôt for Eastern produce; but the skill of the Portuguese stopped short of utilising in home industries the materials which their maritime enterprise brought to their shores: hence their Indian indigo found its way first to Holland, thence over all Europe. But in 1631 the Dutch East India Company was formed, and enough Indigo was brought direct to Holland to supply the whole world, and an immense Dutch trade was created at the expense of the Portuguese. The envy of the merchants of all Europe was thereby provoked. The great woad-growers and traders were ruined. It was not unnatural therefore that the success of the Holland dyers, rivalling and replacing a branch of ancient agriculture and trade, brought upon themselves a vigorous persecution. In France the rich princes of Languedoc depended for their fortunes on the cultivation of the indigenous dye, and even the guarantee for a considerable portion of the ransom of King Francis 1 was to be met from that industry. Indigo was accordingly interdicted in that country (1598), and Henry IV. issued an edict in 1609 sentencing to death any person who should be found using the dye. In Germany, in a like manner, stringent measures were taken to stifle the growth of a trade in Indigo, for the wealthy woad merchants there enjoyed the proud distinction of the "Waid Herrn" - the gentlemen of woad. Emperor Rudolf in 1607, and the Elector of Saxe in 1650, prohibited its use. But notwithstanding all efforts to suppress indigo, woad plantations and factories rapidly disappeared, and the Indian dye took the place of the ancient European substance. In England during 1608, the art of indigo- dyeing had been learnt, and an exclusive right granted by the king to one merchant, led to the starvation

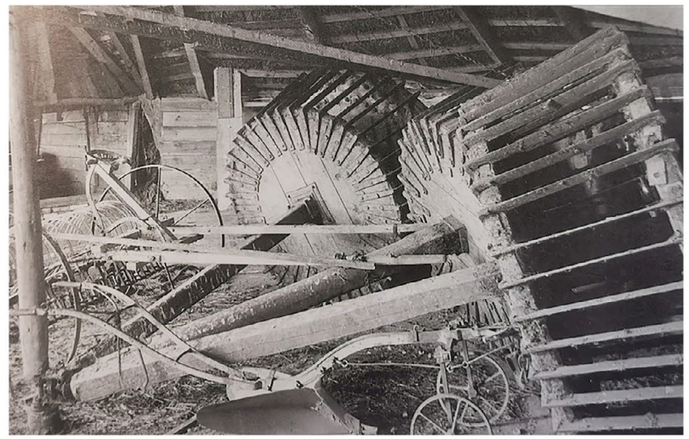
of many of the weavers who were prohibited from having their goods dyed in Holland. The privilege was withdrawn, and British goods once more were sent to Holland to be dyed. Mention is first made of indigo-dyeing in England in 1581, during the reign of Queen Elizabeth, as permissible along with woad, or alone for the black ground colour in dyeing wool. Its employment by itself as a blue-dye was then unknown. Soon, however, the opposition raised in England against indigo procured a verdict that it was poisonous, and that its use should therefore be interdicted in the interests of the public. This was done and the Act remained in force until 1660, when Charles II was compelled to procure dyers from Belgium, to teach the English the art of using indigo, as a measure to protect the greater interest of the British manufacturing industries. The East India Company, accordingly, soon after commenced to import Indigo, and from 1664 to 1694 they had brought 1,241,967b of the dye …

32. The roller house at Parson Drove being pulled down in 1914

33. Woad mill.



34. Woad mill.



35. Woad Cutters, Woad Mill, Parson Drove (photo J Palmer Clarke) (Cambridgeshire Collection).

36. Dyed with indigo | Dutch 18th century cotton coat, Hindeloopen, Netherlands

4

The Rise of American Indigo in the 18th Century

In the eighteenth's century's embrace,
Indigo found a new world's grace,
From Carolina's soil to Georgia's sun,
A blue revolution had begun.

With seeds from distant Eastern lands,
Cultivated by enslaved hands,
The fields of blue began to spread,
A tapestry of deep, rich thread.

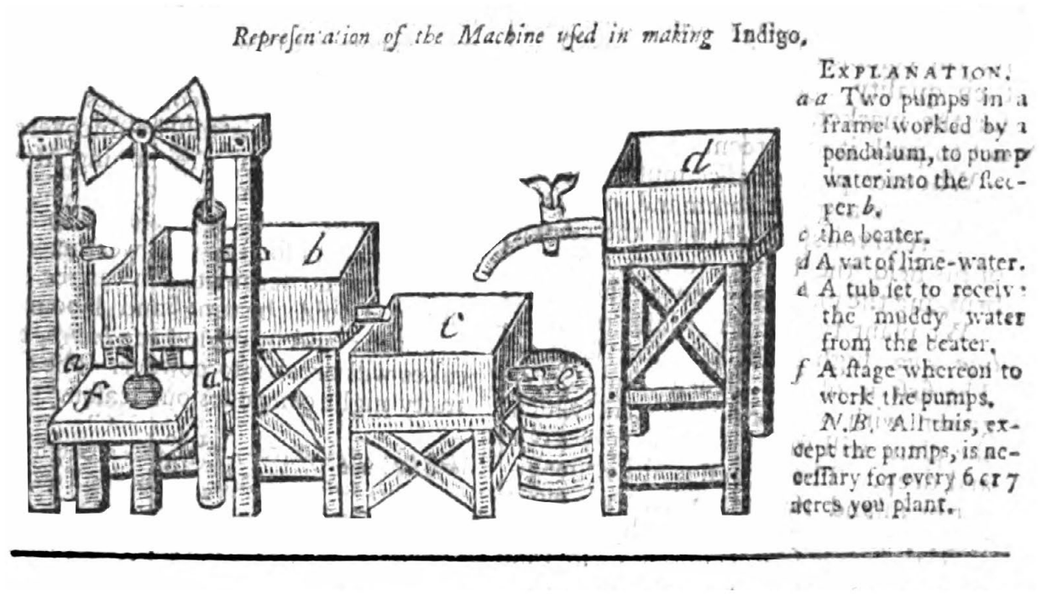
The planters' dreams, in indigo dyed,
On backs of the oppressed, they relied,
A cash crop rising from the earth,
Giving colonial wealth its birth.

Yet, amidst the blue's ascension,
Lay darker hues of tension,
For every leaf and every bloom,
Carried stories of toil and gloom.

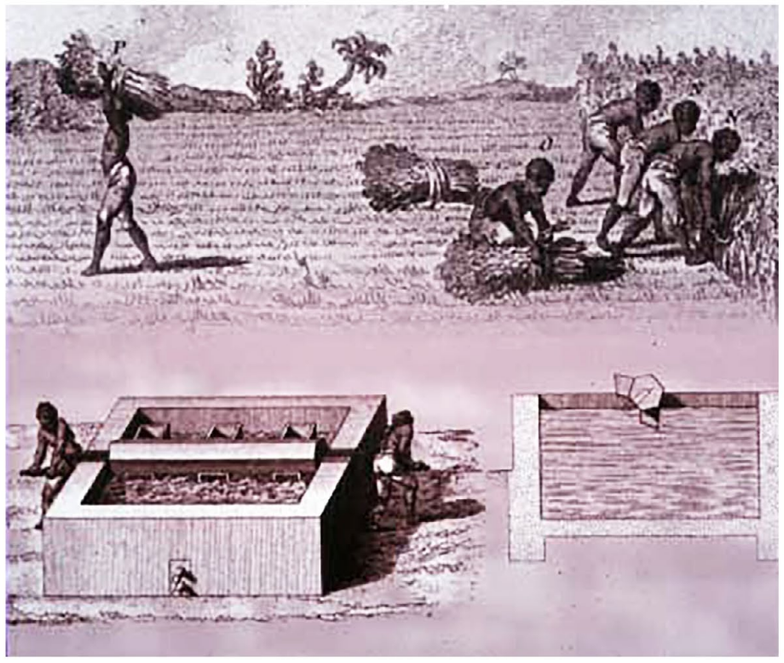
In America's dawn, indigo rose,
A symbol of highs and lows,
A dye that shaped the nation's fate,
In every fold, its history great.

37. A merchant ship, ca. 1762

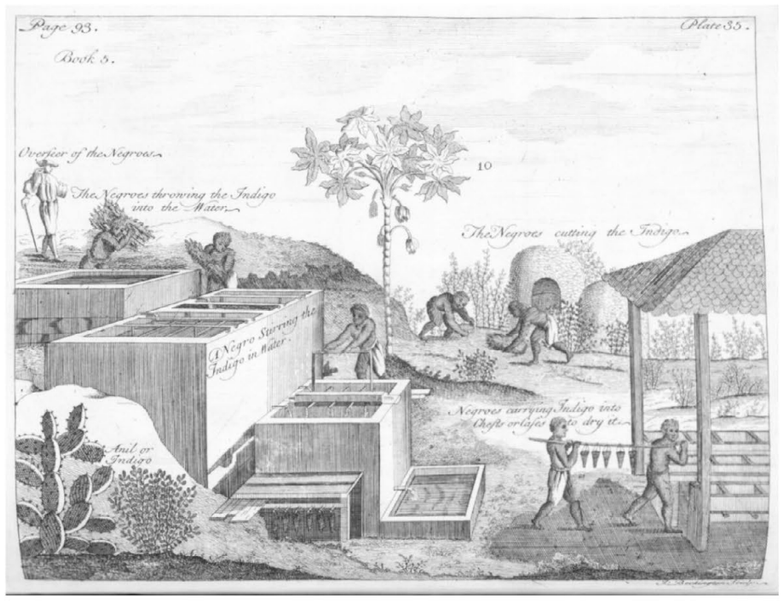
Two influences began to militate against Indian indigo: the discovery of a source of the dye in America, and the adulteration practised by the native Indian manufacturers. The high price paid for the article gave birth to a wholesale system of adulteration, while at the same time the dye had become indispensable. The colonists, French, Spanish, Portuguese, and English, accordingly took to Indigo cultivation. European skill and capital soon placed the enterprise on a footing which killed, or all but killed, the Indian trade. Indigo grown in India declined. Spain grew it in Central America. The French grew it in Haiti. The British began growing in Jamaica and on plantations in their colonies, South Carolina. All this was done with slave labor. The British West Indian colonists, however, soon found that coffee, sugar, and other products were more remunerative; and at the same time the severance of America from Great Britain left the British dyers at the mercy of foreign countries for their supplies of indigo.



38. Representation of a machine used for manufacturing indigo, South Carolina, 1755.

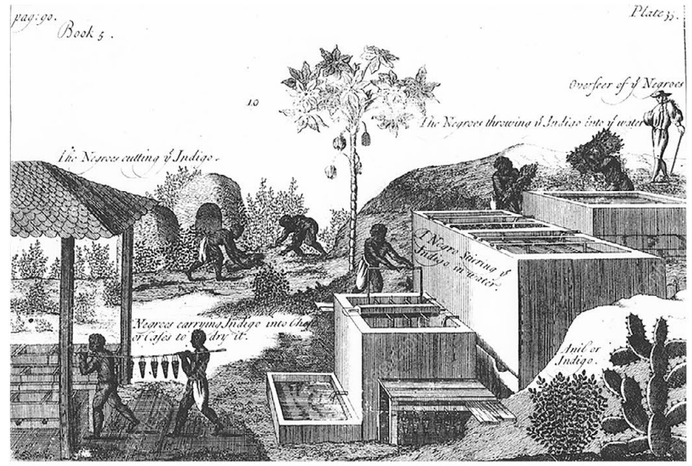


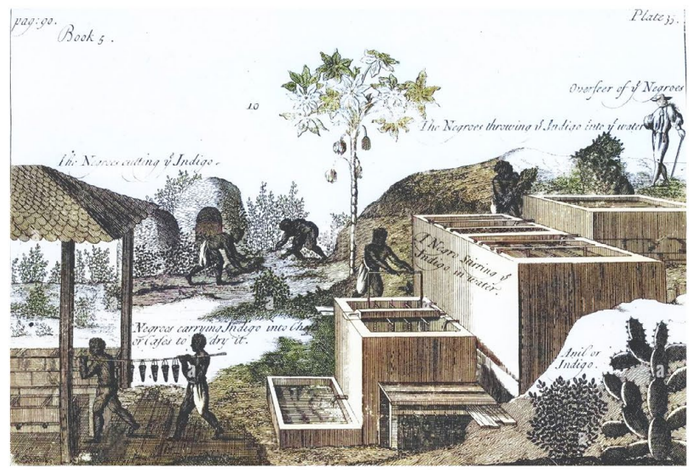
39. Indigo, a highly-valued crop in British colonial Florida.



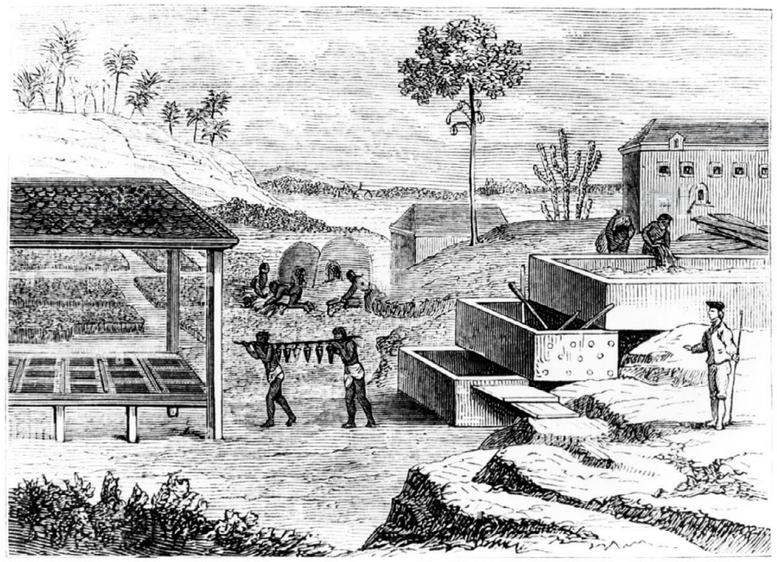
40. Depiction of an overseer watching slaves during the processing of indigo.

41. Cultivation of Indigofera tinctoria and indigo production in America, illustration from Teatro universale, Raccolta enciclopedica e scenografica, No 141, March 18, 1837.

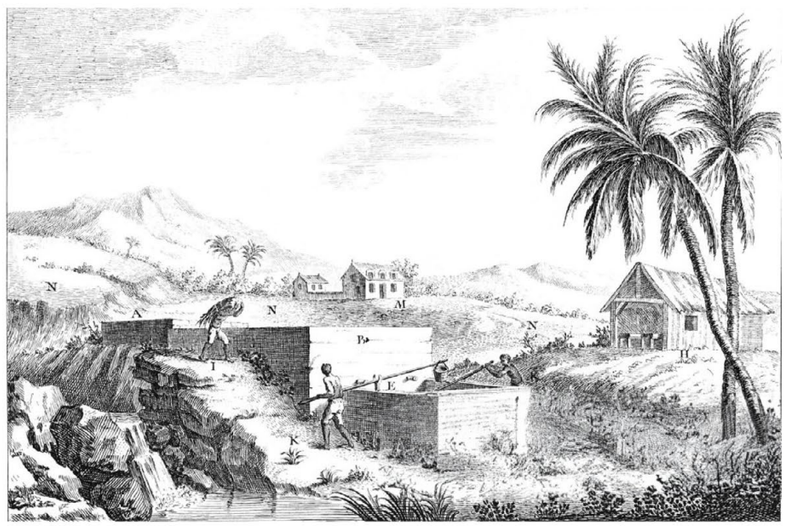




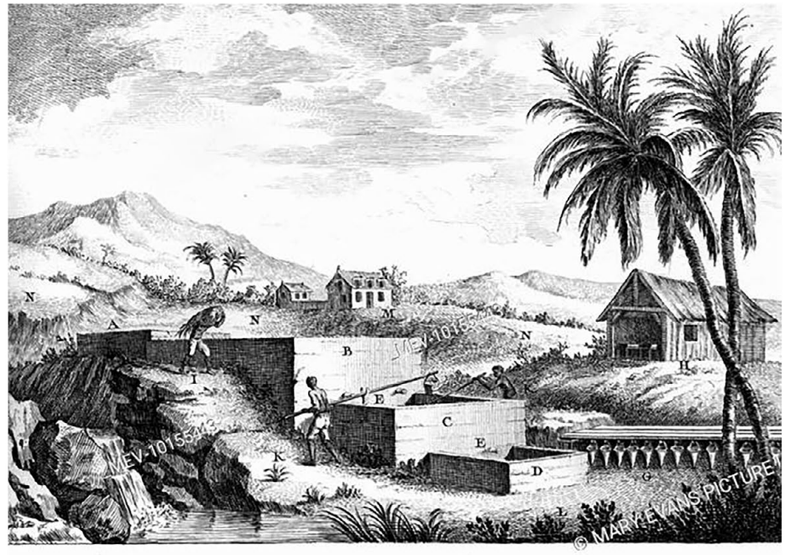
42 & 43. Producing indigo dye with slave labour: West Indies or Central America, 1725. Indigo tinctoria is cut, tied in bundles, steeped in water and fermented in the centre tank. The liquor is drawn off into the bottom tank where it is agitated. The indigo separates out and is allowed to settle and the tank is drained. The residue is removed and put in cases to dry, left. From A Compleat History of Drugs by P Pomet, (London, 1725). First published in French (Paris, 1725).

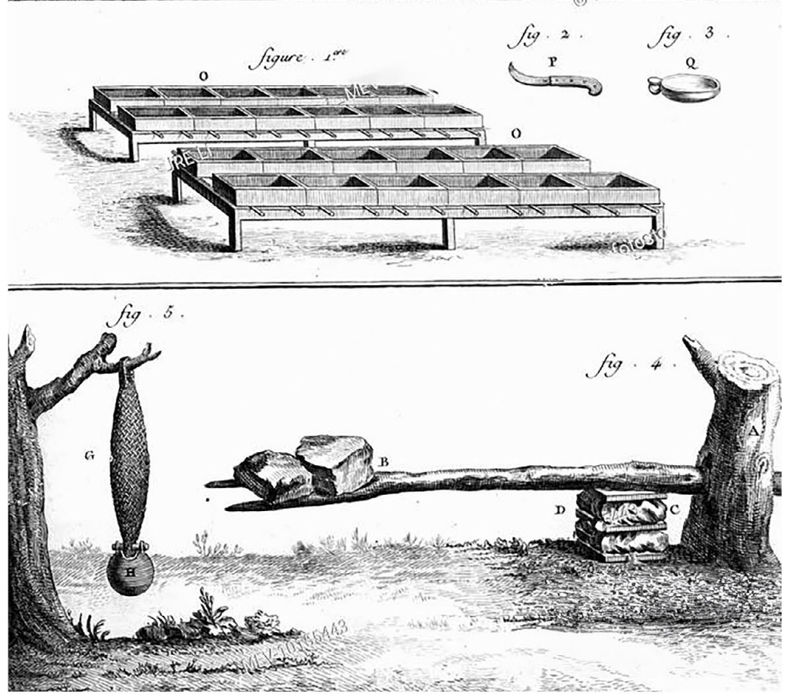


44. Preparing indigo, Santo Domingo, 1873. From Santo Domingo: past and present, with a glance at Hayti, by Samuel Hazard, 1873.

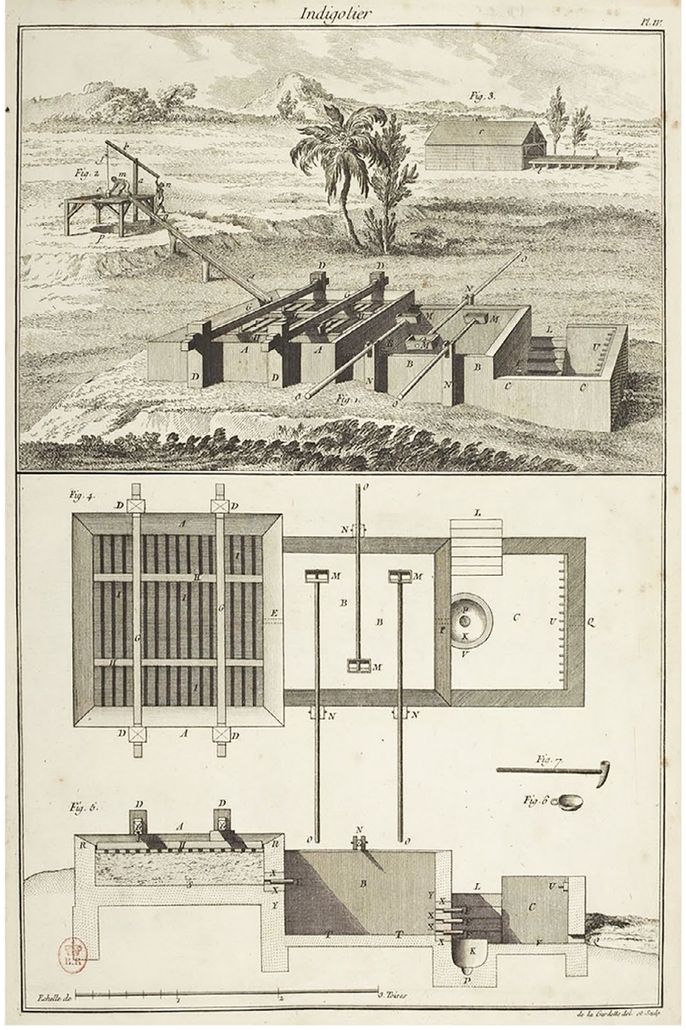


45. African slaves on an indigo plantation in the West Indies. Fresh water in a series of leeching basins extracts the dye from the plant. Line engraving, French, mid-18th century.





46. The processing of Indigo in the French West Indies in the 18th century.



47. L'art de l'indigotier , par M. de Beauvais-Raseau (location possibly West Indies), 1770.

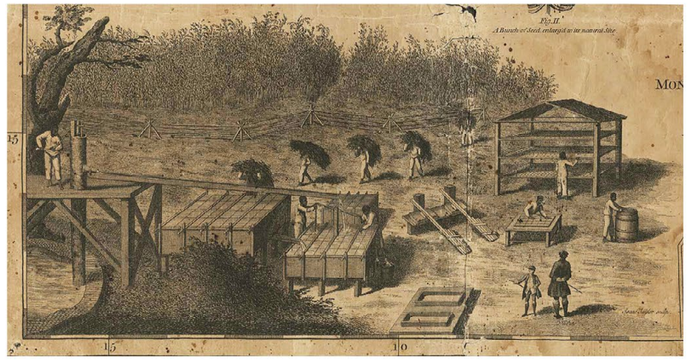
In the annals of South Carolina's agrarian past, indigo once reigned supreme. This captivating blue dye, extracted from the leggy subtropical Indigofera plant, was more than a mere commodity—it was "blue gold." The indigo saga began with a teenage botanist named Eliza Lucas (later Eliza Lucas Pinckney). In the 1730s, her father entrusted her with three plantations near Charleston, South Carolina. Armed with indigo seeds, Eliza embarked on a journey to cultivate this enigmatic plant. But there was a hitch: no one in the Carolina colonies possessed knowledge of indigo processing. Undeterred, Eliza sought help from an African dye maker, who imparted the secrets of indigo extraction to her and the enslaved laborers. Soon, indigo became

South Carolina's second most lucrative crop, alongside rice. The wealth it generated catapulted the colony to prominence among the thirteen British colonies. At its zenith, over a million pounds of indigo were harvested annually, packed into cakes, and shipped back to Britain—a staggering $40 million value in today's currency.

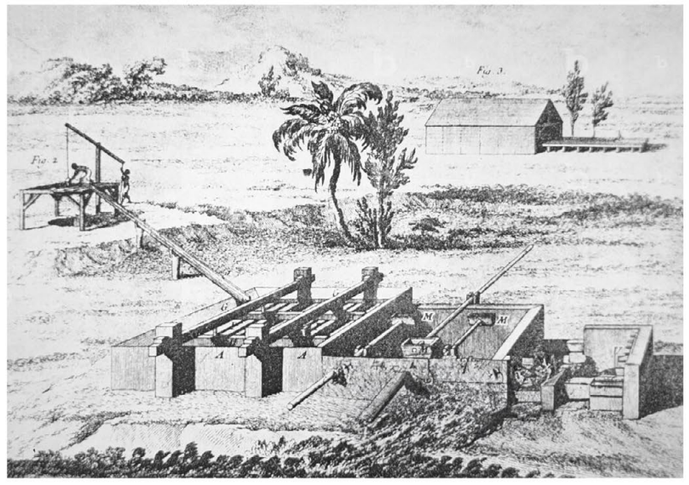
Behind this prosperity, however, lay a grim reality. Enslaved laborers toiled in giant brick vats, where the fermenting odour mingled with stagnant water, attracting flies and mosquitoes. These unsung heroes endured the constant threat of cholera, yellow fever, and malaria. Their sacrifices fuelled the indigo bonanza, yet their suffering remains etched in history.

The American Revolution disrupted the indigo trade. Exports to Britain dwindled, and the bounty on indigo expired. The once-thriving industry waned, and indigo's reign as "blue gold" came to an end.

48. Eliza Pinckney (née Elizabeth Lucas; December 28, 1722 – May 27, 1793) [1] transformed agriculture in colonial South Carolina, where she developed indigo as one of its most important cash crops. Its cultivation and processing as dye produced one-third the total value of the colony's exports before the Revolutionary War.

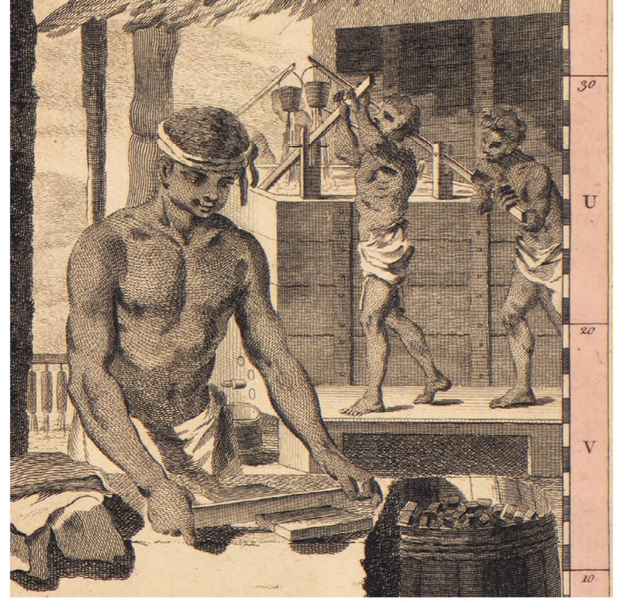


49. A 1773 depiction of indigo harvest and processing at St. Stephens Parish, South Carolina.

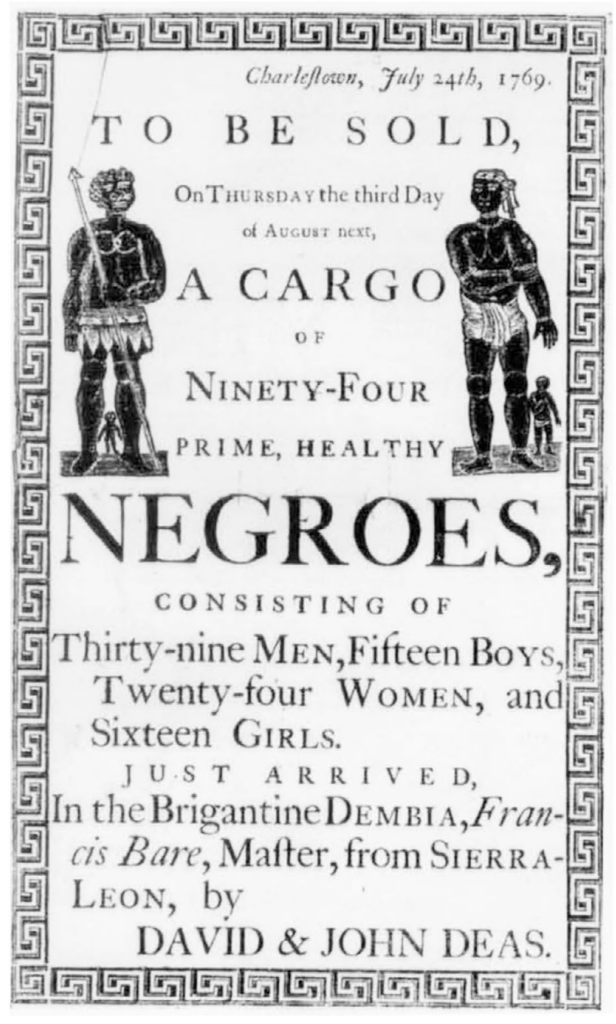


50. Manufacture of Indigo in South Carolina in 1770 (litho), American School, (18th century).

51. African slaves producing indigo dye on a plantation in South Carolina, America, in the 18th century. Hand-coloured copper plate engraving by Bernardoni from Giulio Ferrario's Ancient and Modern Costumes of all the Peoples of the World, Florence, Italy, 1837.



52. A detail of a map of South Carolina by William DeBrahm, et al. depicting enslaved men agitating the liquid (background) and cutting the dried dyestuff into squares (foreground).



53. 1769: Newspaper advertisement for enslaved Africans, Charleston, South Carolina. James Grant purchased enslaved men and women from merchants in Charleston and Savannah, and from ships sent direct from Bance Island in what is today, Sierra Leone, West Africa. The owner of Bance Island at the time was Richard Oswald, absentee owner of Mount Oswald, an indigo, rice, and sugar plantation at today's Ormond Beach, Florida.

Image from Jerome S. Handler and Michael L. Tuite, Jr., "The Atlantic Slave Trade and Slave Life in the Americas: A Visual Record," produced by the Digital Media Lab at the University of Virginia Library and the Virginia Foundation for the Humanities.

5

The Return of Indian Indigo

In shades of sorrow and toil untold,
Lies the story of indigo, blue and bold.
Under the sun, in the colonial hold,
The fields of blue, a tale of old.

In vats so vast, the leaves would steep,
Laborers' hands in dye, so deep.
The hue of empire, the color of sleep,
A blue so dark, it made hearts weep.

The factory's shadow, long and grim,
Where the Blue Mother's prayers begin.
A sacred hue, with a history dim,
In every fold, a story within.

From green to blue, the transformation,
A symbol of colonial domination.
Yet, in its depth, a strange salvation,
Indigo's legacy, a nation's foundation.

In Bengal's heart, the revolt took flame,
Against the blue that bore Britain's name.
A cry for justice, freedom's claim,
Indigo's story, never the same.

Now, in the silence of history's page,
The indigo factory, a bygone age.
Yet, in every thread, it's the sage,
Of a color that outlasted its cage.

Indigo is generally classified according to the various countries from which it is obtained. The principal kinds are the following :—Bengal, Oude, Madras, Manilla, Java, Egyptian, Guatemala, Caraccas, and Mexican.

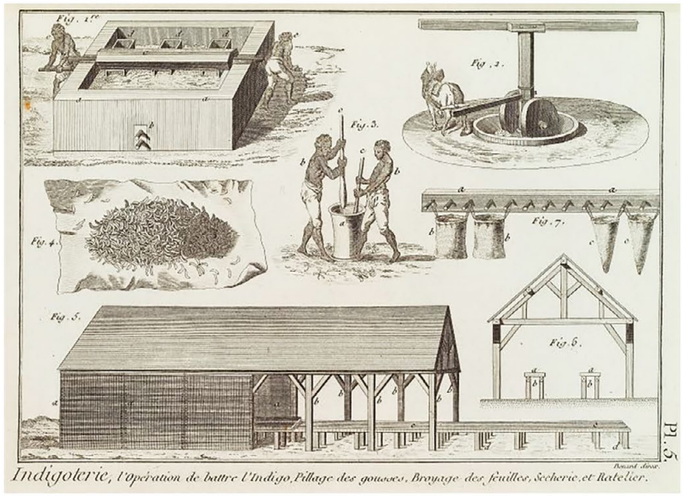
At the present day the finest qualities of indigo are obtained from Bengal, the produce of that country having now taken the place in public estimation which was once occupied by that of the Spanish colonies. The export of indigo from Bengal, which in 1853 amounted to 120,000 maunds (of 74 lbs. 10 oz.) would require for its culture about 1,025,000 acres, and an annual expenditure of 1,300,000*l*. Of this extent of land about 550,000 acres is believed to be included in the Lower Provinces, and consists chiefly of alluvial lands rescued from the rivers. The best qualities of Bengal indigo are manufactured in the Jessore and Kishenaghaur districts, but each district produces a quality peculiar to itself, and differences of a less striking character may be perceived in the produce of different factories. The Bengal indigo, when packed in chests, consists of four principal qualities, viz., the blue, purple, violet, and copper. But these kinds, by passing over into one another, produce a number of intermediate varieties, such as purply-blue, blue and violet, purply-violet, &c. The various qualifications would, therefore, be distinguished as follow :—1. Blue. 2. Blue and violet. 3. Purple. 4. Purple and violet. 5. Violet. 6. Violet and copper. 7. Copper. The leading London brokers, however, classify Bengal indigo into the following grades : fine blue, fine purple and violet, fine red and violet, good purple and violet, middling violet, middling defective, consuming fine, middling and good, ordinary, ordinary and lean trash. The finest qualities of Bengal indigo present the following characteristics. They consist of cubical pieces, are light, brittle, of a clean fracture, soft to the touch, of a fine bright blue colour, porous, and adhering to the tongue. The lower qualities have a duller colour, assume more and more of a reddish tinge, are heavier, more compact, and less easily broken.

The indigo from the upper provinces of India comes chiefly from Tyroot, Oude, and Benares. It is inferior to Bengal indigo.

Of Madras indigo there are two kinds, viz. :—1. Dry leaf, made from dry stacked leaves. 2. Kurpah, which is manufactured from the wet leaf in the same way as Bengal indigo. The latter has only come into use since 1830. Both are of inferior quality to Bengal indigo.

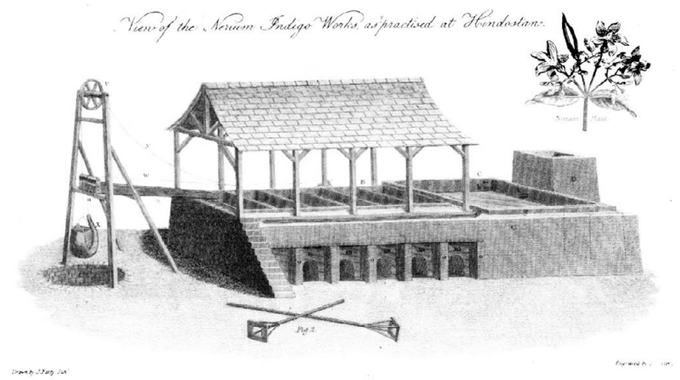
54.About Indigo

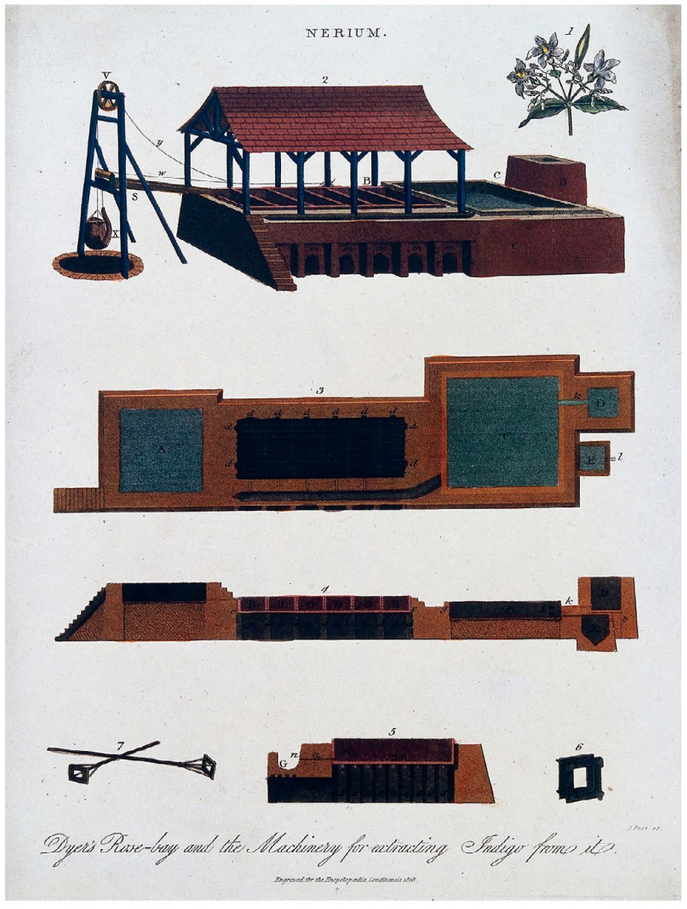
As the supply of indigo from North and Central America diminished, India – particularly erstwhile Bengal (then undivided Bengal, Bihar and Odisha), Oudh (presently, central Uttar Pradesh), and Madras (presently, Tamil Nadu and Andhra Pradesh) – were brought under the cultivation and manufacture of indigo by the British colonial government in the nineteenth century. European dyers also imported indigo to a smaller extent from Java (Indonesia), Manilla (Philippines), the Mauritius, and Senegal in the eastern hemisphere, and from Caraccas (Venezuela), Brazil, and Guatemala in the western.



Indigoterie, l'opération de battre l'Indigo, Pillage des gousses, Broyage des feuilles, Secherie et Ratelier.

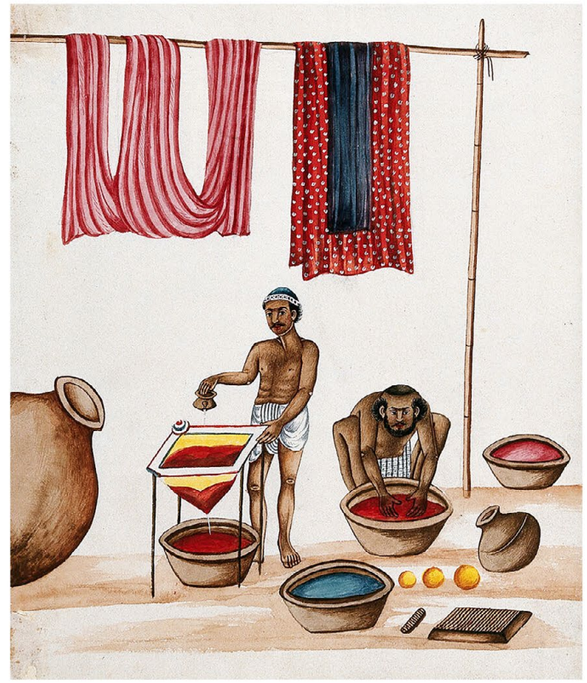
55. Indigoterie, L'Opération de battre L'Indigo, Pillage des gousses, Broyage des feuilles, Secherie, et Ratelier, 1784
(The operation of threshing indigo: cutting and crushing of leaves, drying and stacking).
(This was perhaps the dry leaf processing method).



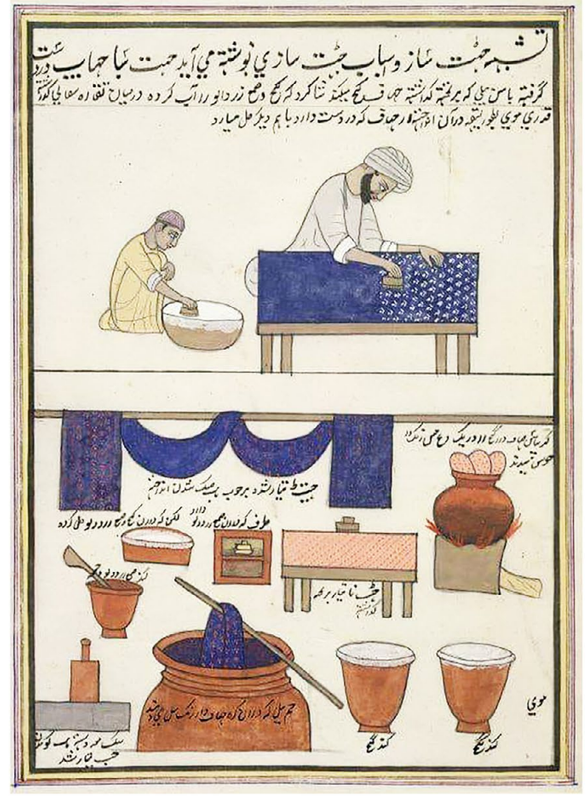


56 & 57. Dr. Roxburgh provided a detailed description of the method employed for manufacturing indigo from the Nerium tinctorium or Wrightia tinctoria (Transactions of the Society of Arts, Vol. xxviii.) This plant, which attains the size of a small tree, is found across southern India.
Extraction of indigo from Nerium.

58. Two men preparing dye for fabric. Watercolour by an Indian painter. Ca. 19th century.



59. The Manufacture of Indigo and the Origins of Fingerprinting in India



60. Indigo dyer at work. The British established an agricultural monoculture of indigo in India.

The Indigo Factory

The process of indigo dye extraction in India is described as follows by Watt (Pamphlet on Indigo):

- Cultivation of the indigo crop
- Cutting and transportation to the indigo factory
- At the factory the indigo leaves are immersed in clean water in a steeping-vat. Usually, a factory had about 12 steeping vats built of brick and Portland cement, and are in dimensions 24 X 18 ×5 feet.
- These should be arranged in a row and have in front and below the floor level, a corresponding series of shallower and wider vats (3 to 4 feet deep) known as the beating-vats. The steeping- vat communicates with its beating-vat by a hole at the bottom into which a large wooden plug is driven from the outside. By removing this plug the infusion prepared in the steeping-vat is drained into the beating-vat.
- From the beating-vats the surface fluid is carefully drawn off and the thickish deposit is raised by buckets and thrown on a strainer. This removes large mechanical impurities. It then flows by a pipe to a cistern under the boiler pump, sometimes called the pulp-vat, which was 15 × 10 × 3 feet.
- The strained fecula is discharged into the boiler (or after the removal of any surface liquid
- That may have formed) to which a certain quantity of clean water is poured into the boiler, a fire is lighted, and the heat gradually raised until it reaches the boiling point. All the while the pulp is carefully stirred and kept gently boiling for three hours. A fragrant smell and the formation of bubbles on the surface indicate the completion of the boiling process.
- The boiling fecula is now discharged on to a table or dripping-vat over which a large damp cloth has been spread. In five or six hours on a wide spread table (or shallow wooden vat) (40 X 10 X 2 feet), the major portion of the water will have drained away, and the fecula settled on the surface of the cloth. The pulp should now be scraped together in a corner, the cloth folded over, and a weight placed on the top. In this condition it should be left in a few hours to cool and drain still further.
- The fecula from the table is placed within the box, the cloth is folded over the top, and the lid adjusted over all when the screw-press is brought into bearing. One turn of the screw is given every now and then for about five hours until the mass of indigo in the press, at first about 8 inches deep, is compressed to 3 or 3 inches, or until no more water is seen to be oozing from it. The pressure is then removed evenly and gently, the sides of the press lifted off and the cake (42 X24 × 31 inch) exposed.
- The cutting up into cakes is accomplished very often by carrying the slab resting on the bottom loose lid of the press to another room and depositing it in a frame of the same dimensions which has slits on its sides. It is now marked off into 3 or 3½ inch square blocks, each of which receives the

brand of the Factory and the number assigned to the day's manufacture.

- The cakes are carried from the cutter's hands to the drying room and arranged on the shelves, each cake being turned over from side to side until quite dry.
- The cakes are now conveyed to a closed room Sweating in which they are arranged in small walls, each day's manufacture being distinctly marked off from the other. The walls of cakes are next covered over with blankets and dry bran, and the doors of the room secured, so that as little air as possible may be admitted. In about fifteen days' time the sweating process will be completed when air should be let in very slowly and the walls of cakes uncovered by degrees, the uncovering process taking four or five days.
- The cakes being thus thoroughly dried (a process which lasts for about three months), they are each brushed and packed into specially prepared boxes of well- seasoned wood, each box or "Case" being filled, if possible, with the cakes bearing the same mark denoting the day of manufacture.

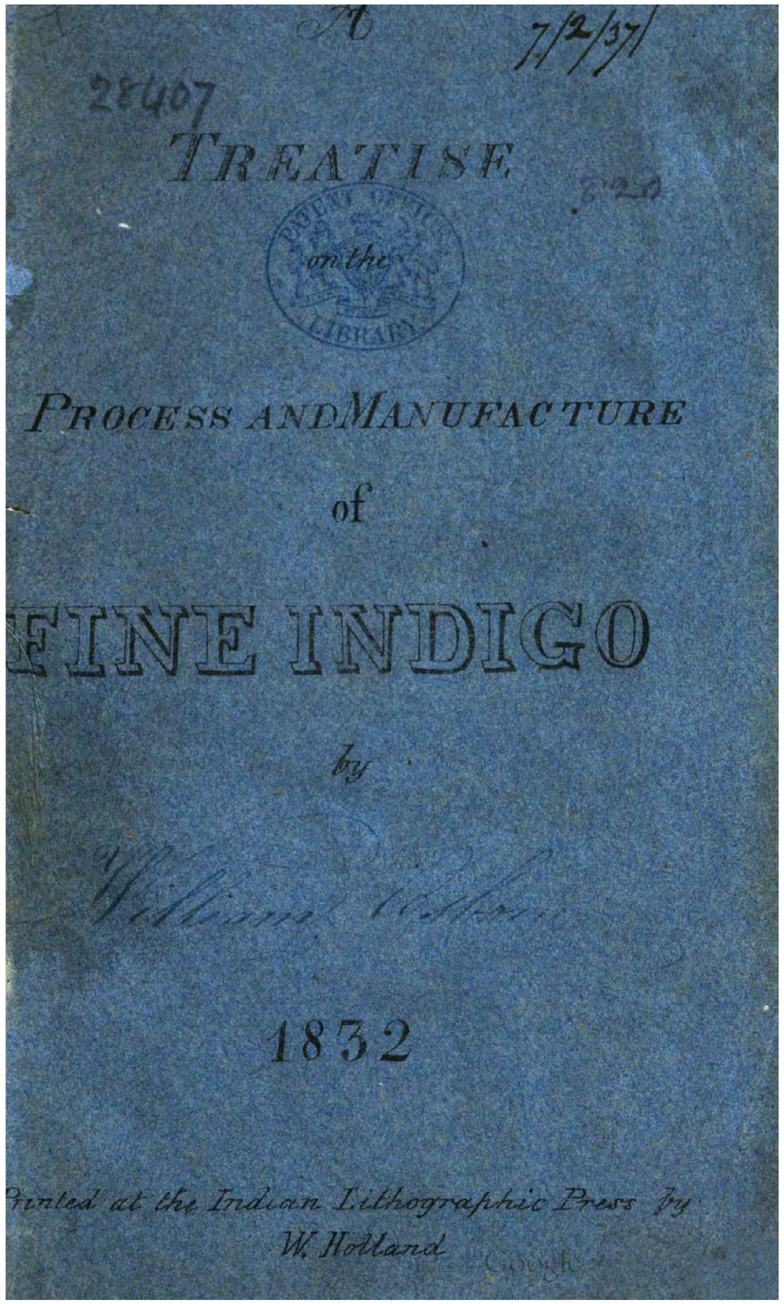
At the turn of the nineteenth century, the British East India Company massively amplified the scale of indigo production in India … transforming it from an artisanal occupation into an industry with manufacture structured in factories.

The exports from these factories fed the market with adequate supply to meet the rising demand of indigo dyers from across the world.

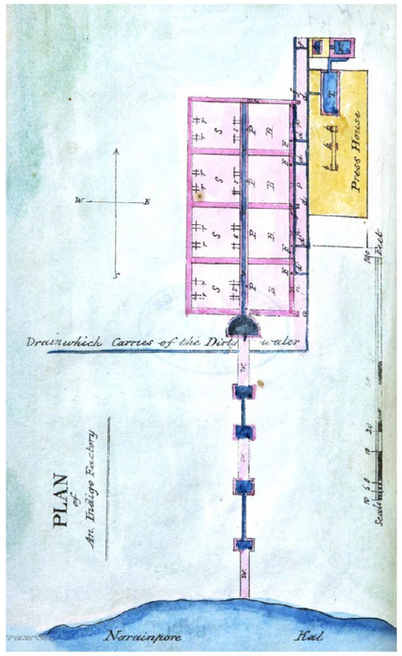
In 1830, India was cultivating indigo over 500,000 hectares of land, processed by 500 factories that produced 5,000 tons of the dye.

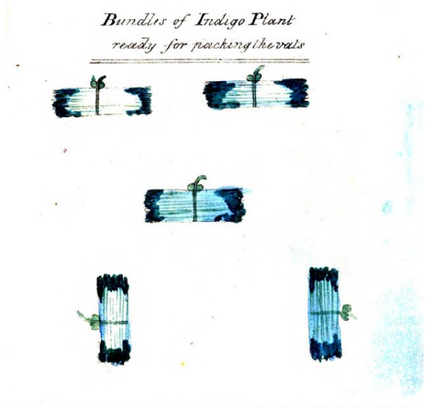
By the mid-1800s, India, was coerced by the British East India Company to become the global epicentre of indigo production.

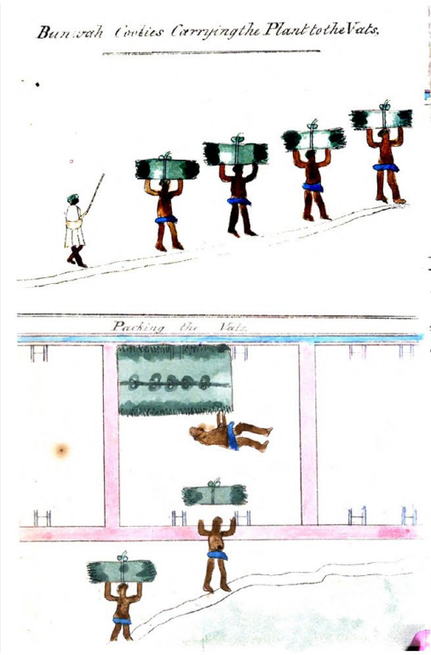
61. Indian indigo production from Middleton's Complete System of Geography (1779).

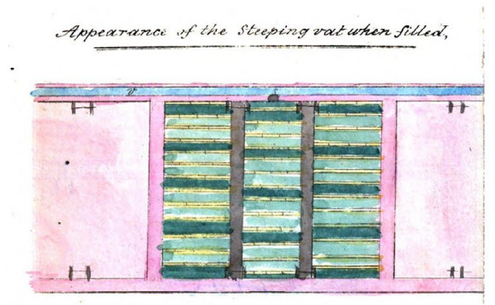


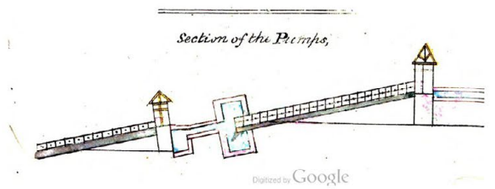
62 -73. Perhaps the earliest sketches of an Indian indigo factory are from a book authored by William Osborne in 1832. The artwork and colouring of the sketches are interesting in themselves, apart from being an early record of the factory's architecture. Sketches of Indian indigo factories become more widespread from the 1860s.

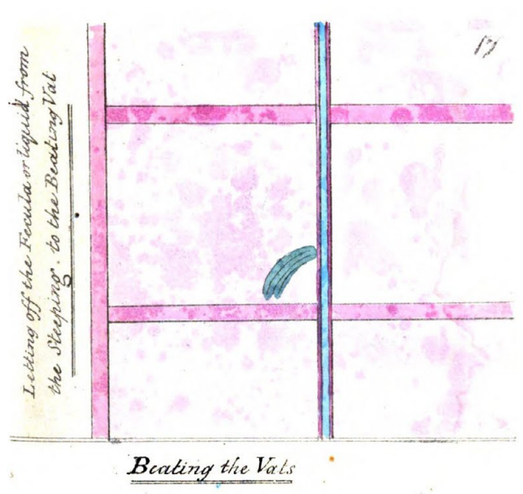


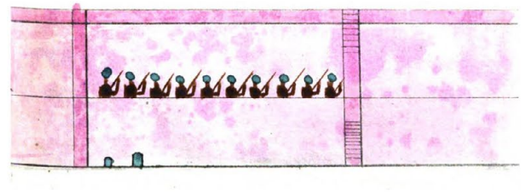




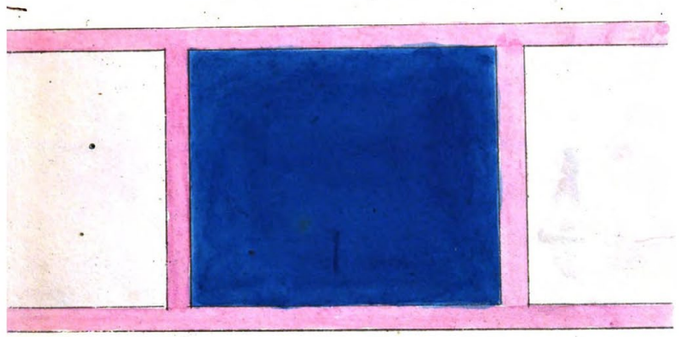




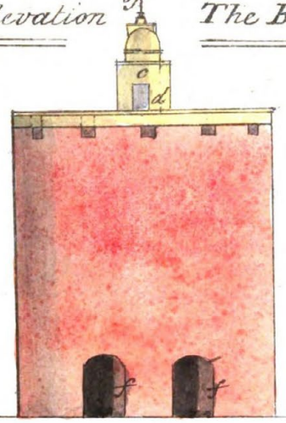




Appearance of the Vat when Beat,

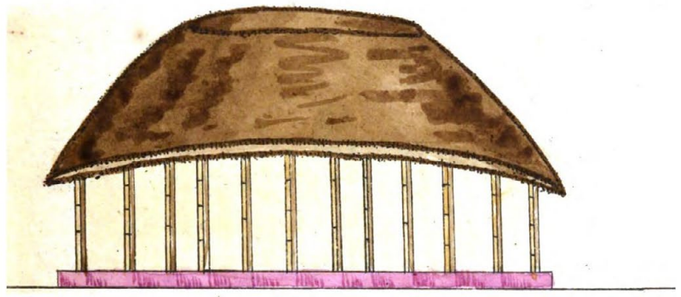


Northern Elevation of The Boiler



27

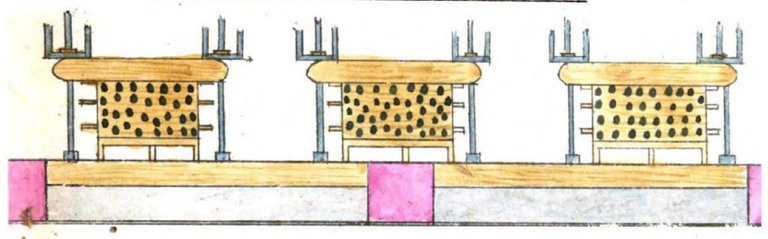
The Press House, &c



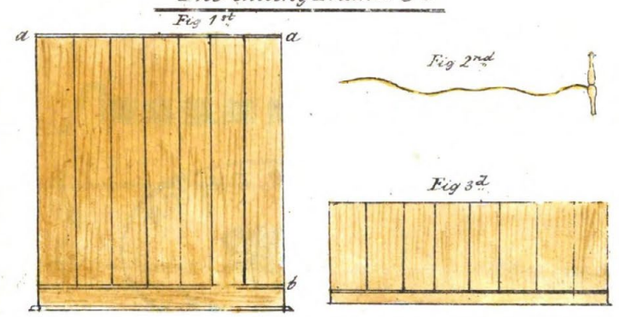
The process from the fecula to that of Pressing, Screwing Cutting and stamping the Cakes, are in general Carried on in the Press House

Elevation, of the Press boxes, Screws. &c

33

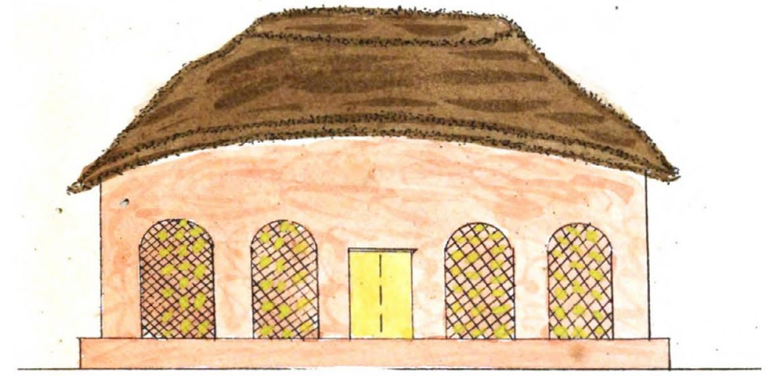


The cutting Frames &c



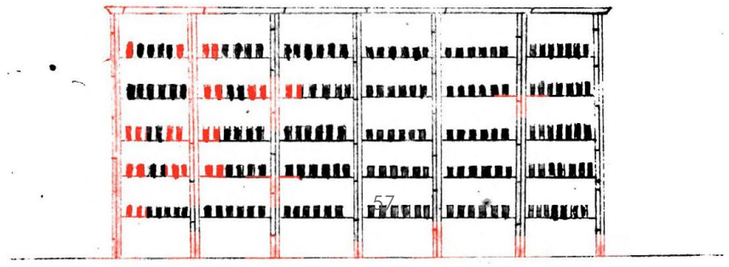
37

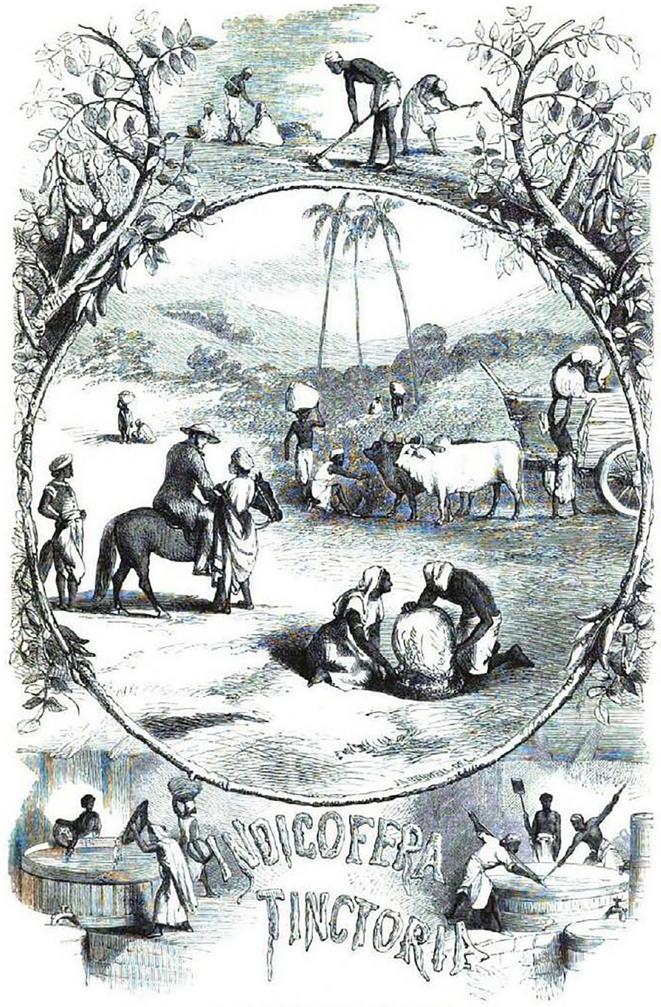
The Drying House



39

Inside View of the Drying House.

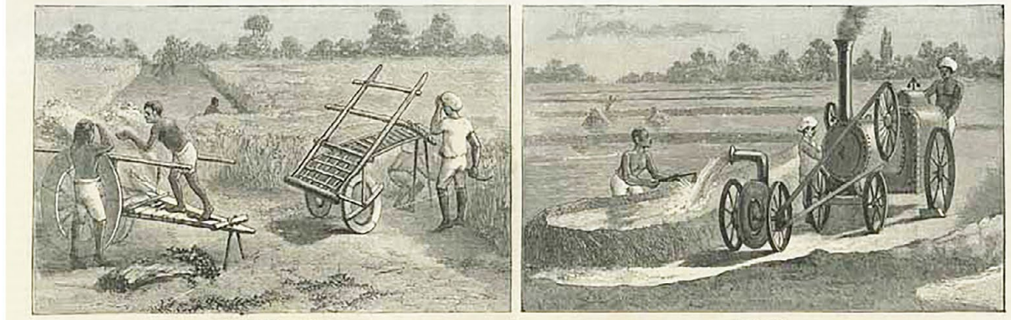




INDIGO CULTIVATION IN LOWER BENGAL.

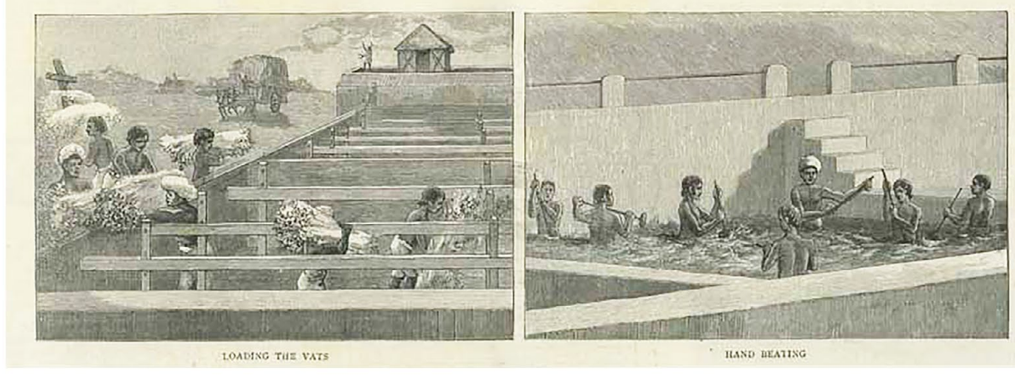
74. Joseph Austin Benwell, Indigo cultivation in Bengal,1861.

75. William Simpson, An Indigo Factory in Bengal (1863).



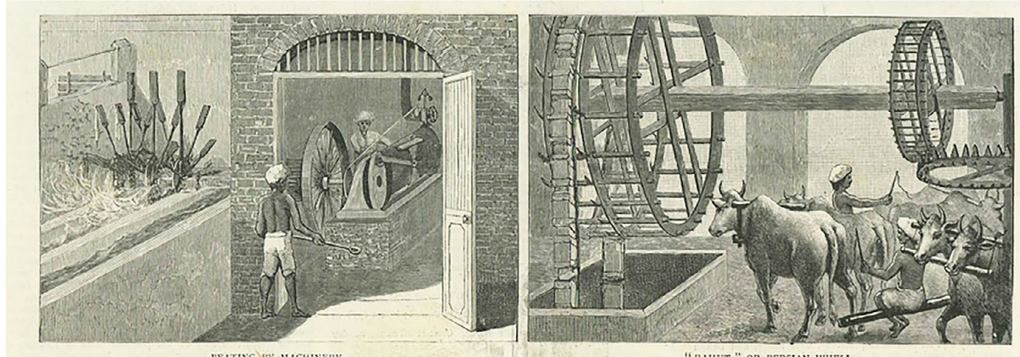
CUTTING THE PLANT

IRRIGATING



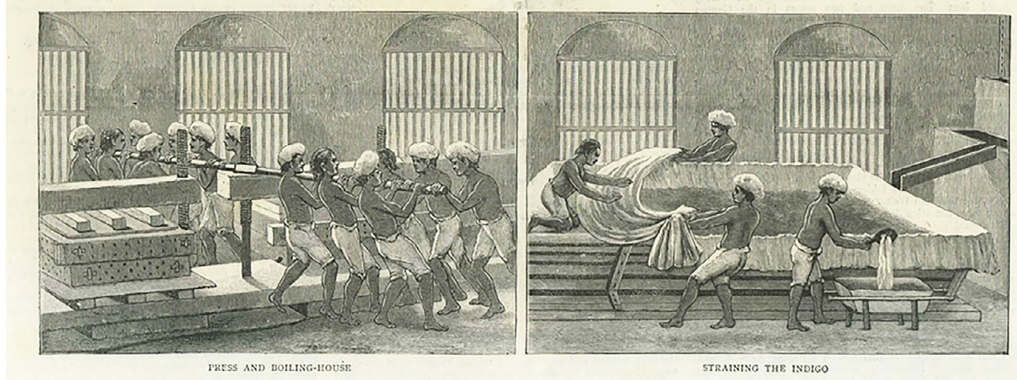
LOADING THE VATS

HAND BEATING



BEATING BY MACHINERY

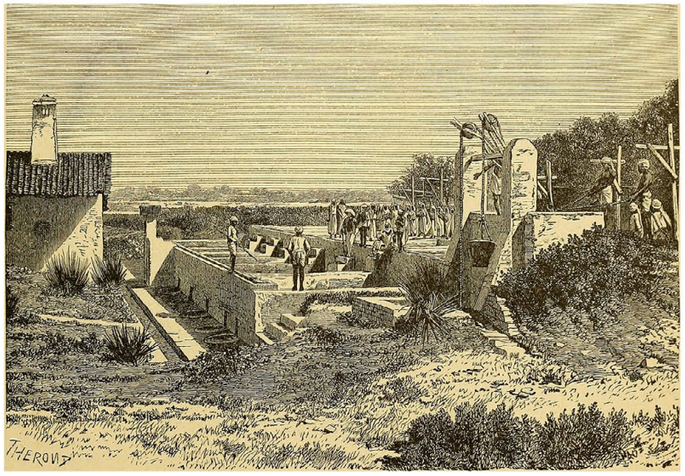
"RAHUT," OR PERSIAN WHEEL



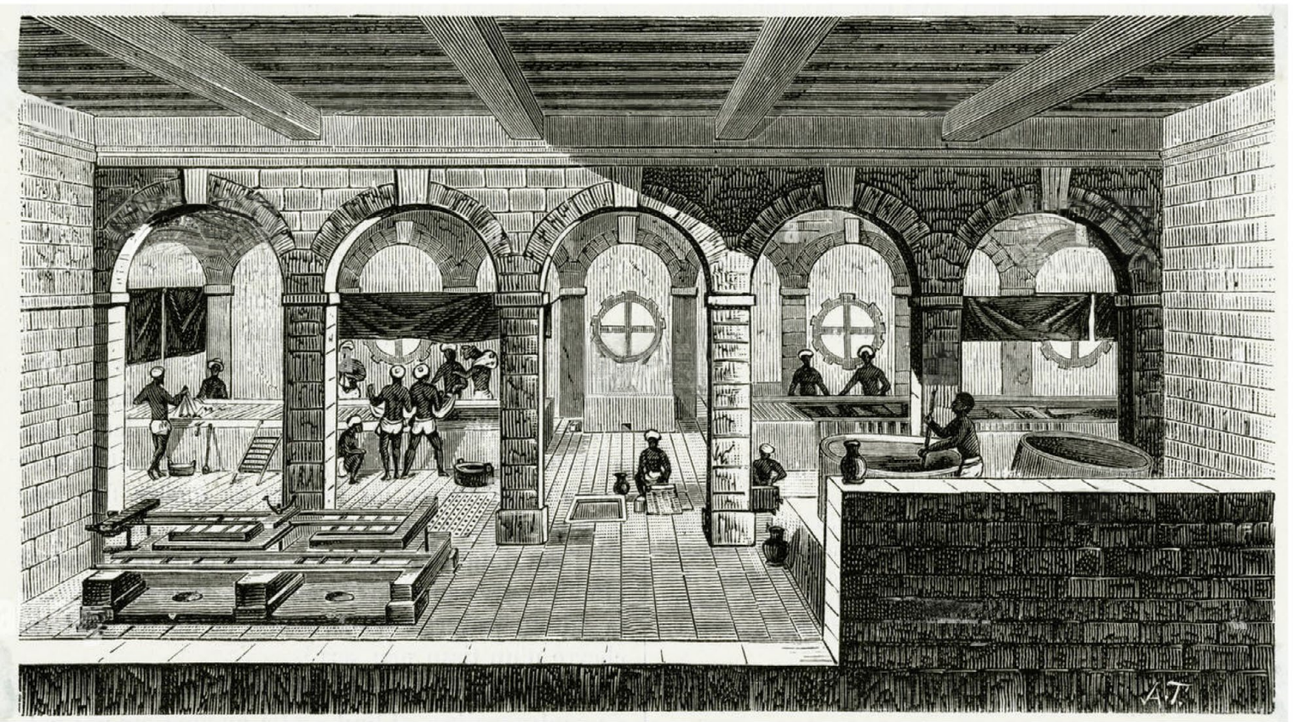
PRESS AND BOILING-HOUSE

STRAINING THE INDIGO

76 & 77. Indigo production in Bengal from popular British magazine, The Graphic (1887)



78. Indigo factory at Allahabad, India, drawn by Émile Thérond [fr], 19th century



79. Indigo factory, India, 19th century.

80. A Buna factory labourer ready to beat indigo, Bengal, India, 1850s.

TABLE No. IV.

The following analysis of the Foreign Exports of Indigo from India in 1887-88 exhibits the countries to which consigned, and in the previous table will be found the share of these exports taken by each Presidency :—

Countries to which exported.	Cwt.	Value in Rupees.
United Kingdom	56,986	1,54,34,982
Austria	11,780	35,70,817
Belgium	208	69,610
France	17,406	49,76,119
Germany	6,392	20,24,291
Greece	145	38,857
Italy	1,533	4,57,013
Malta	205	45,831
Russia	1,668	5,13,964
Turkey in Europe	222	50,770
Egypt	13,154	29,49,421
United States	21,350	71,33,493
Aden	18	2,487
Arabia	404	52,234
China—Hong-kong	73	21,861
Persia	5,229	7,98,723
Straits Settlements	5	1,625
Turkey in Asia	2,841	7,58,833
Australia	13	3,500
Other Countries	12	2,063
TOTAL	139,644	3,89 06,494

TABLE No. V.

The imports into India of Foreign Indigo are somewhat remarkable. The following may be given as an analysis of the transactions in 1887-88 :—

Countries whence Imported.	Cwt.	Value in Rupees.	Provinces to which Imported.	Cwt.	Value in Rupees.
United Kingdom	143	27,438	Bengal	75	17,310
China—Hong-kong	72	16,785	Bombay	76	12,718
Straits Settlements	1,259	12,756	Madras	68	14,800
Other Countries	4	580	Burma	1,259	12,731
TOTAL	1,478	57,559		1,478	57,559

The remarkably low-priced indigo of the Straits seems to find a ready market in Burma, where it is largely used by the Shans for dyeing their blue clothes, and doubtless also by Chinese residents.

81. Exports of indigo from India to the rest of the world.

Indigo and financial crisis in India

Meanwhile, indigo manufacture had caused colonial India's first financial crisis in 1829. To remit their profits to England, the East India Company flooded the market with indigo leading to a crash in prices that reduced several private businesses and their affiliated banks to bankruptcy; prominent amongst these was the agency firm, Palmer & Co., Calcutta. The crisis abated by 1833 and indigo production revived.

In 1847, another indigo glut worsened the distress of companies in England when their debtors in India defaulted on bill settlements. The disruption was short-lived and indigo production was soon back on course.

82. A view of the Loll (Lall) Bazaar, from Opposite the House of John Palmer, Esq. From the junction with Mission Row, Fraser drew the view eastward down the length of the street. The grand house dominating the composition is the house of John Palmer, the so-called Prince of Merchants, which was sold shortly afterwards to the government and converted into a police station. Beyond it, on the intersection with Chitpore Road, is the house that served as a court for the Justices of the Peace. Opposite Palmer's house are the emporium and auction rooms of Taylor and Company.

The short tablet over his grave in the North Park Street Burial Ground, tells his history :—

"JOHN PALMER, THE FRIEND OF THE POOR."

While a statuary marble bust has been erected in the Town Hall, the pedestal of which bears the following Inscription :—

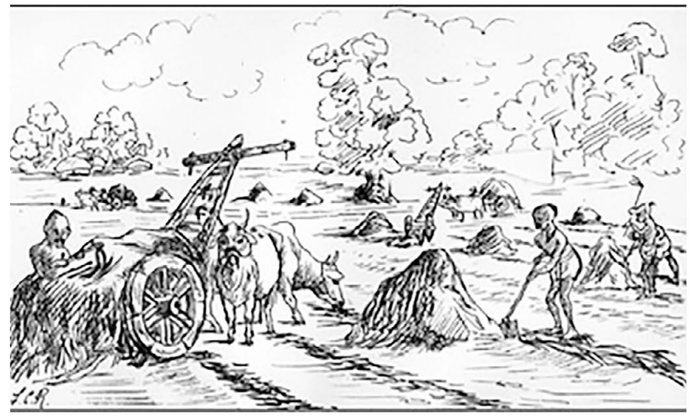
John Palmer, Esq. of Calcutta, Merchant,
second son of the late Lieutenant-General William Palmer,
born 8th of October 1767, died 22d January 1836.
To superior talent he united a mind well cultivated and richly stored ; with a heart susceptible of every generous and benevolent impulse, ready at all times to sympathise in the sorrows and sufferings of his fellow-creatures ; to the poor and the afflicted his counsel when required, was prompt, and his hand ever open in the hour of their need.
The vicissitudes and trials of life which it was his lot to experience in their severest forms, he bore with equanimity and fortitude, and he lived in the respect and affection of a numerous circle of friends, European and Native,
who, rightly appreciating his worth, and deeply sorrowing for his loss,
have caused this Monument to be erected to his Memory.

Requiescat in pace.

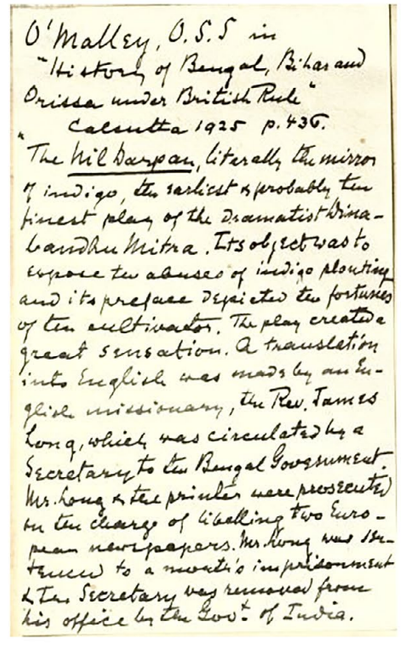
83. Since the complete collapse of his business and personal fortune (no such thing as squirreling money away in hidden Swiss bank accounts then) in January 1830, followed by a domino impact on other Calcutta merchants, John Palmer had worked tirelessly to salvage something for the hundreds of vulnerable people who had entrusted all their assets to his management and who were left with nothing. Which explains maybe why his epitaph is that of a hero rather than villain. "Sacred to the memory of John Palmer, the friend of the poor, born 8th Oct 1767, died 21st Jany 1836, aged 69 years." - North Park Street Burial Ground".

The Plight of the Indian Indigo Peasant-Farmers

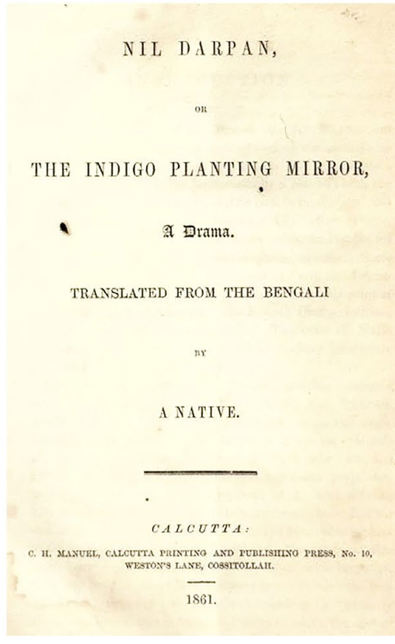
Conflict between the colonizers and Indians arose not in the factory workers but between the British planters and indigo peasant-farmers. With the growing global demand for indigo in the mid-19th century, British planters forced Indian farmers to cultivate indigo instead of food crops while trapping them in debt. In 1860, indigo peasants revolted against the exploitative practices of the British planters with violence.



84. A rare sketch of indigo cultivators.



O'Malley, O.S.S in
"History of Bengal, Bihar and
Orissa under British Rule"
Calcutta 1925 p. 436.
"The Nil Darpan, literally the mirror
of indigo, the earliest & probably the
finest play of the dramatist Dina-
bandhu Mitra. Its object was to
expose the abuses of indigo planting
and its preface depicted the fortunes
of the cultivator. The play created a
great sensation. A translation
into English was made by an En-
glish missionary, the Rev. James
Long, which was circulated by a
Secretary to the Bengal Government.
Mr. Long & the printer were prosecuted
on the charge of libelling two Euro-
pean newspapers. Mr. Long was sen-
tenced to a month's imprisonment
& the Secretary was removed from
his office by the Govt. of India.



NIL DARPAN,

OR

THE INDIGO PLANTING MIRROR,

A Drama.

TRANSLATED FROM THE BENGALI

BY

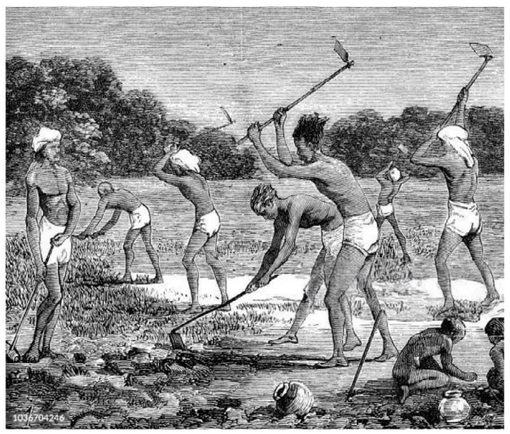
A NATIVE.

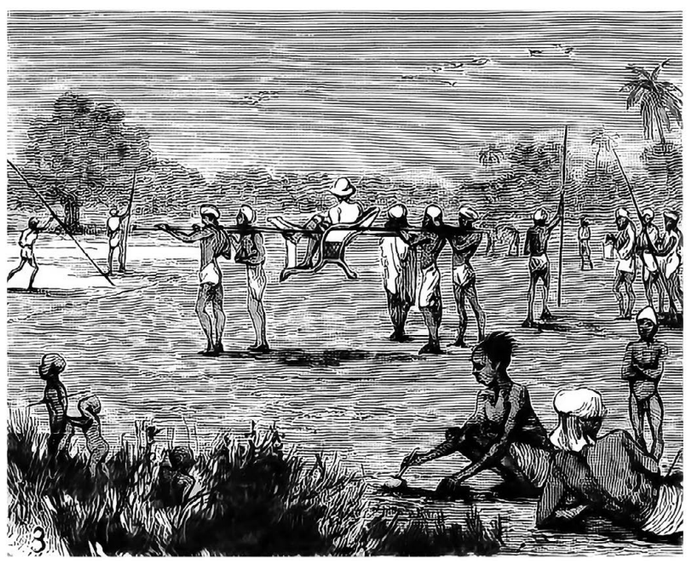
CALCUTTA:

C. H. MANUEL, CALCUTTA PRINTING AND PUBLISHING PRESS, No. 10, WESTON'S LANE, COOSITOLLAH.

1861.

85 & 86. Nil Darpan; Or, the Indigo Planting Mirror, a Drama by Dīnabandhu Mitra.





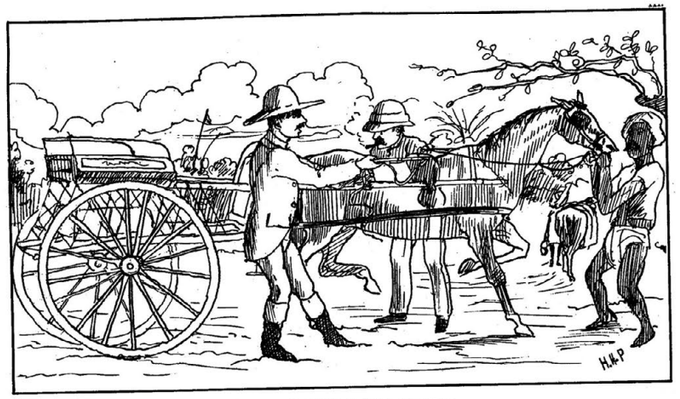
87-90. Indigo cultivators in Tirhoot, Bengal, The Graphic.

91. Workers cutting the indigo in the fields.

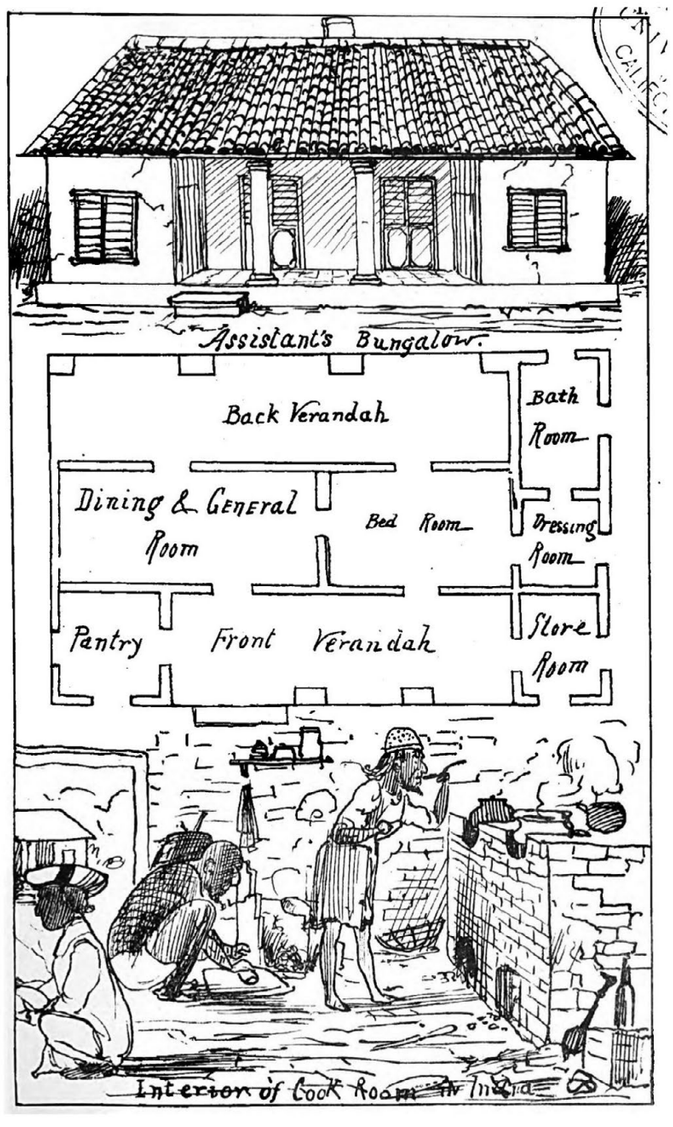
92 - 103. A set of "rough" sketches on indigo peasants and farmers can be found in an inconspicuous work by W.M. Reid. It gives a subtle view of the authority exerted by the British planters over indigo peasant-farmers.

Pig Sticking.

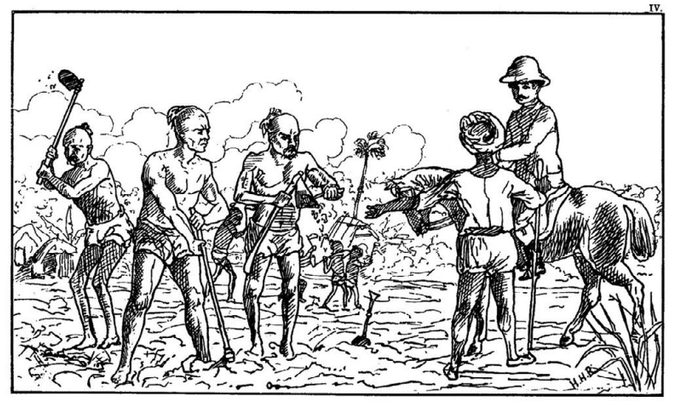
Planting Horse.



Assistant's Bamboo Cart and Nag.

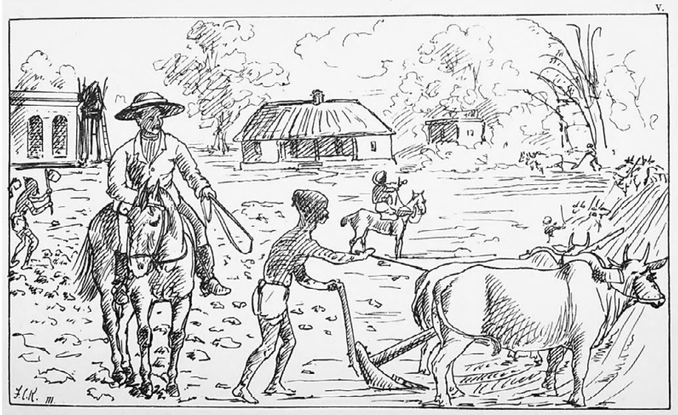


IV.



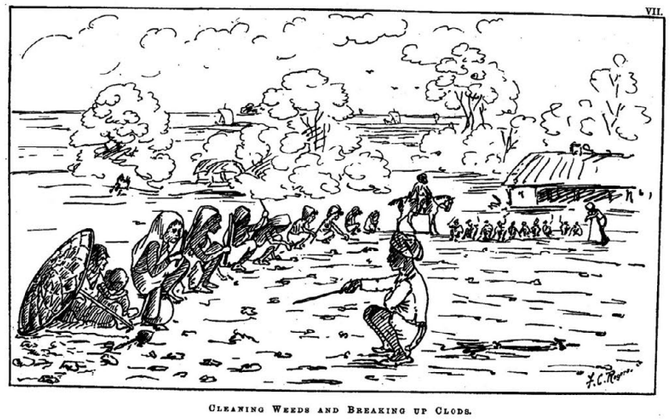
(Tumnee) Digging Lands for Indigo.

V.



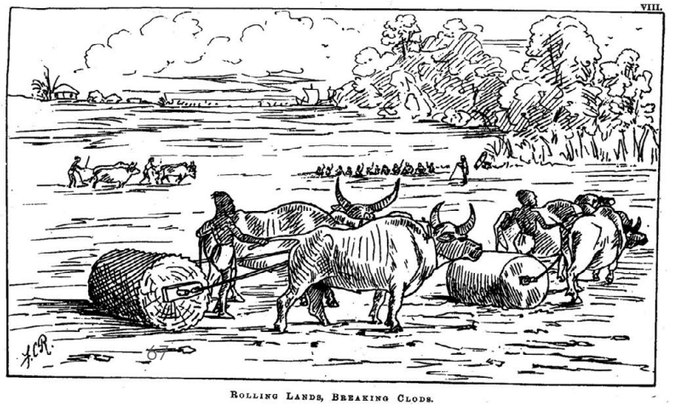
Ploughing Indigo Lands.

VII.



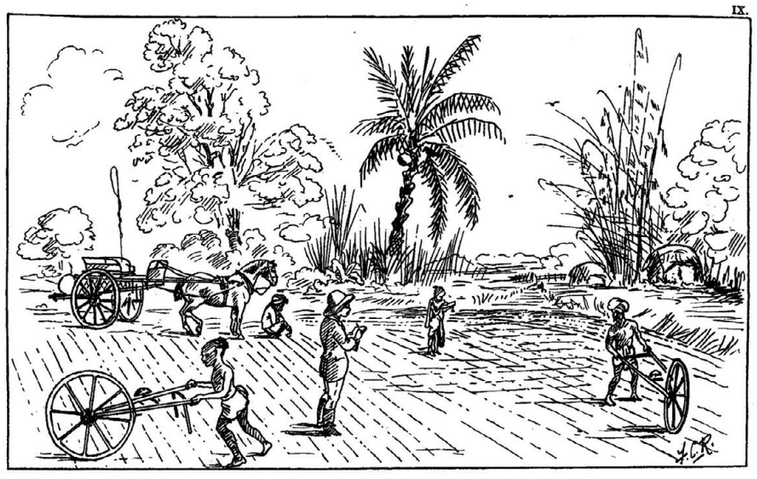
Cleaning Weeds and Breaking up Clods.

VIII.

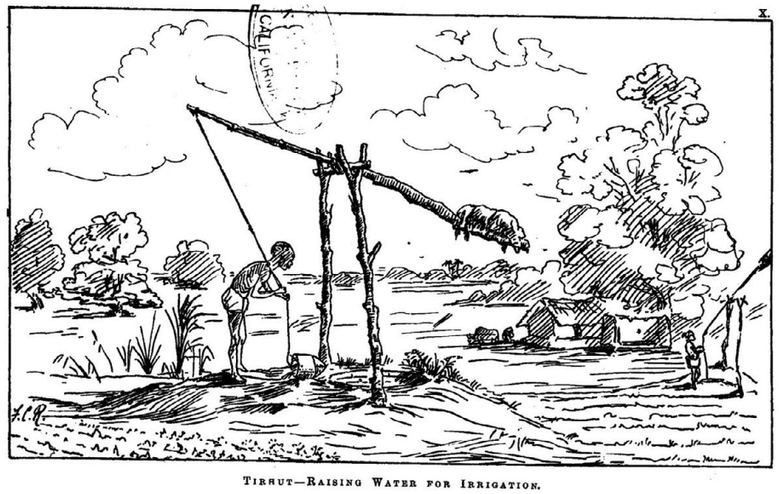


Rolling Lands, Breaking Clods.

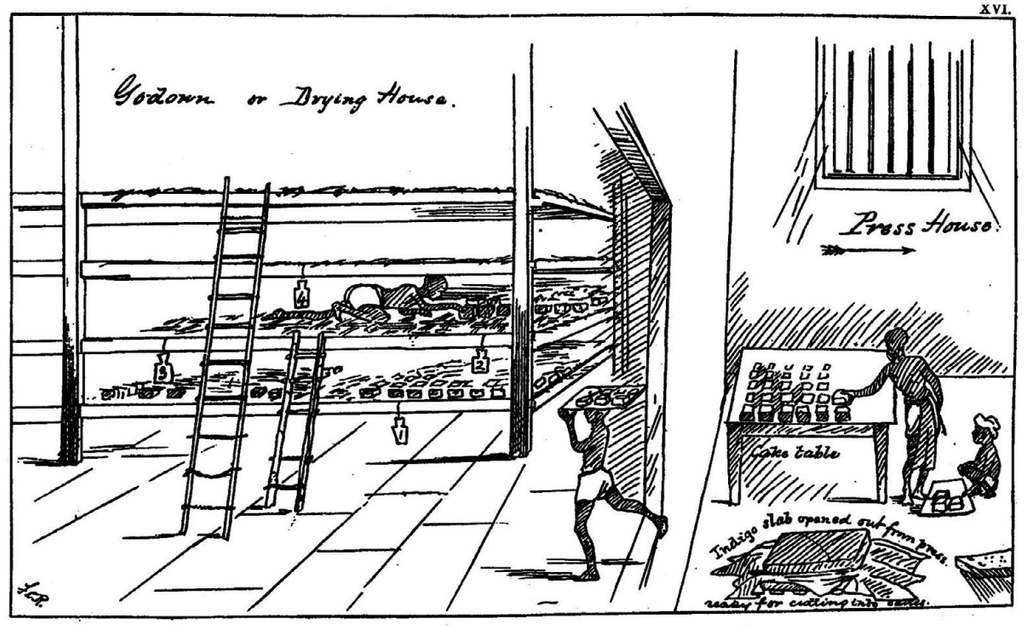
Spreading and Digging in (Seetee) Manure.



Measuring Indigo Fields.



Tirhut—Raising Water for Irrigation.

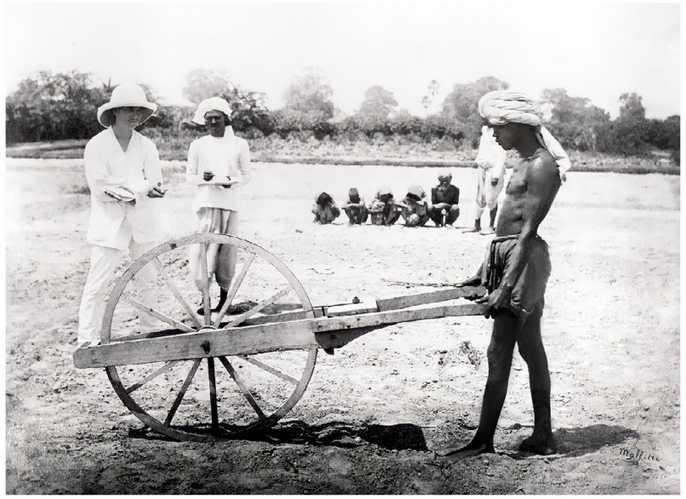


Cake House.

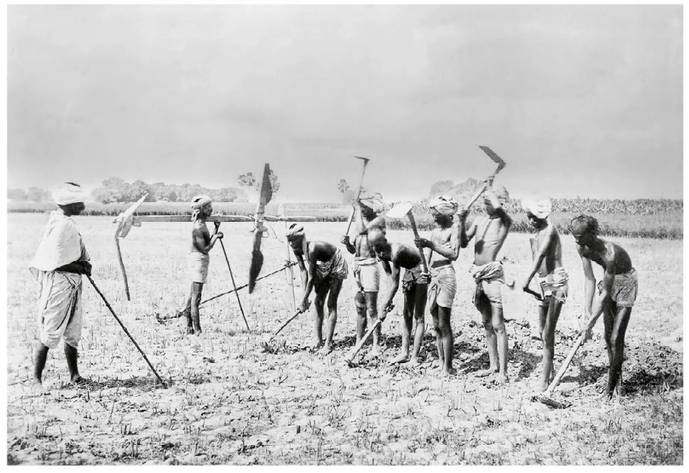
Earliest photographic collection of indigo production in India

Perhaps the best collection of photographs of the indigo factory are by Oscar Jean Baptiste Mallitte, a French photographer active in Asia during the mid-19th century. He is known for his work in the Andaman Islands as part of a British survey party and for documenting the process of indigo planting and manufacturing.

104. Planter's bungalow.



105. Luggie (measuring lands for cultivation).



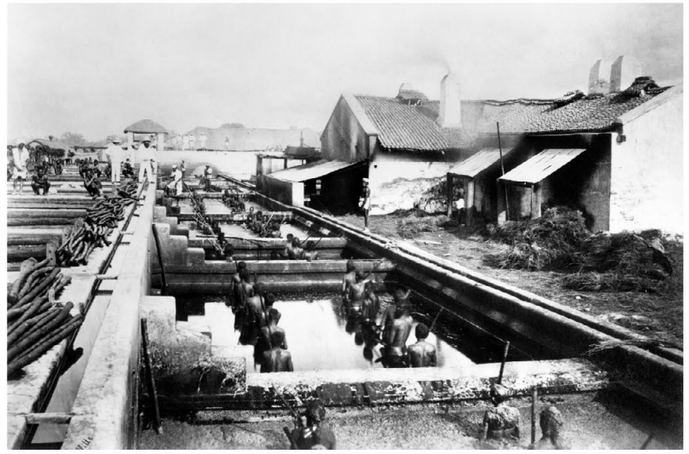
106. Tumnie (turning up lands).

107. Sowing with drills.

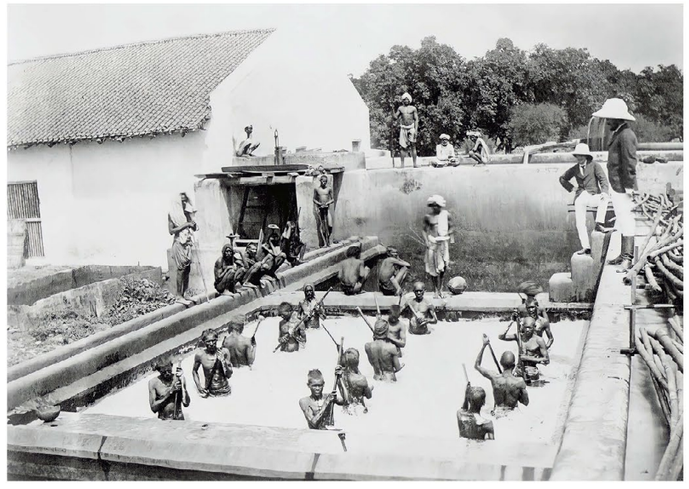
108. Cutting indigo plant in the field and loading carts.

109. Indigo factory (loading the Vats).

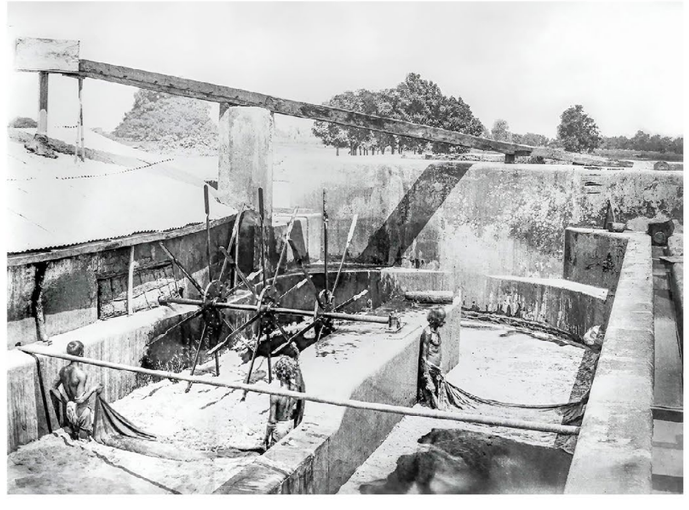
110. Loading a vat with plant.



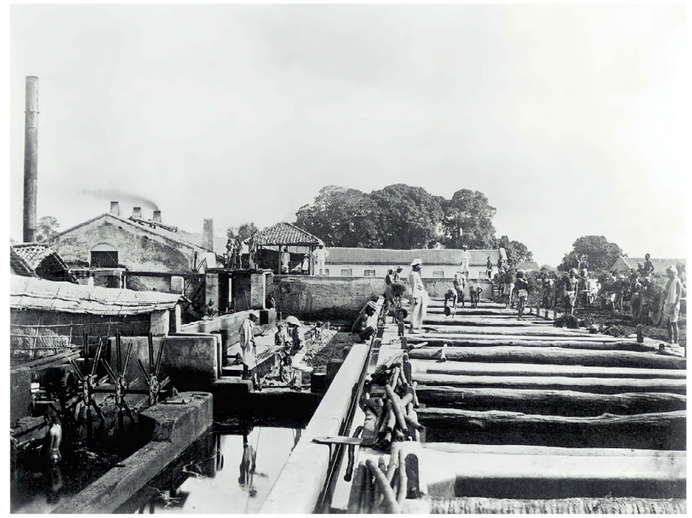
111. Beating the vats.



112. Beating a vat by hand.

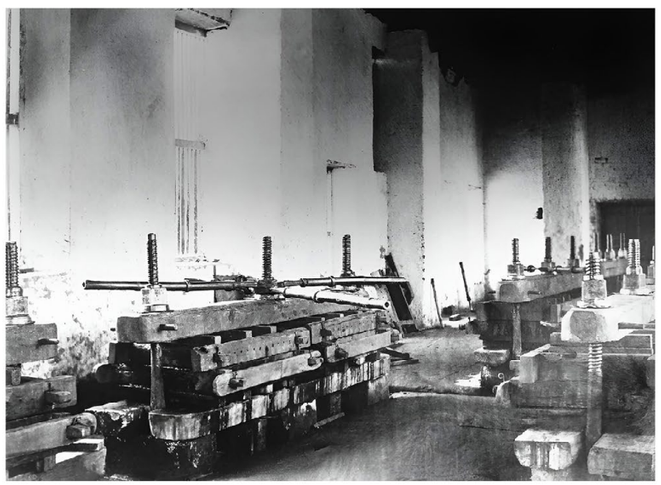


113. Beating by machinery.



114. Apparatus for beating by machinery.

115. Indigo boilers and fecula table.



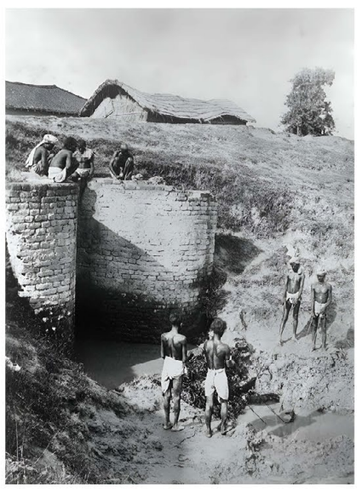
116. Press house.

117. Pumping the fecula into boilers.

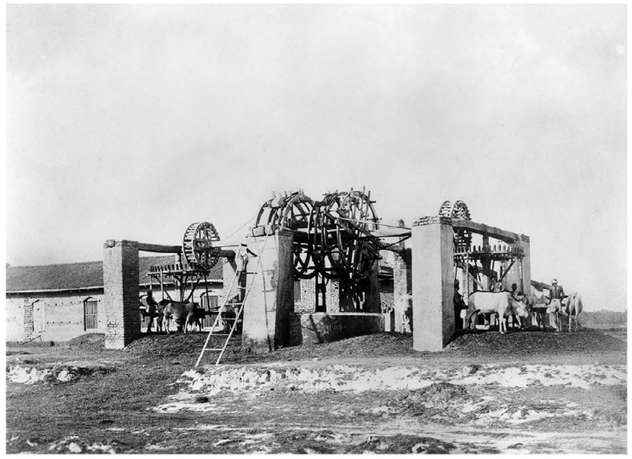
118. Pressing the fecula.

119. Drying house (indigo cakes on shelves).

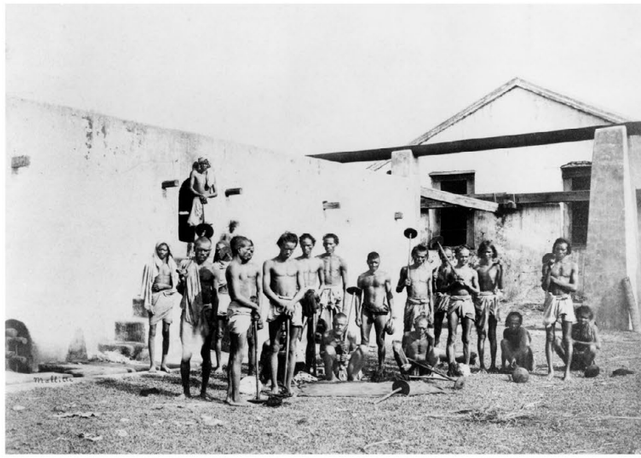
120. Cutting Indigo into cakes.



121. Bailing water in time of drought.



122. Persian Wheel.



123. Group of Indigo beaters.

6

Indigo Fashion

In the eighteenth's gentle fold,
Indigo tales, bravely told,
Woven in the looms of old,
A blue more precious than gold.

Nineteenth's dawn, a fashion's flare,
Indigo in every fair,
Dresses, coats, beyond compare,
A hue found everywhere.

From Eastern lands to Western shores,
Through traders' routes and open doors,
Indigo's depth, the world adores,
In every stitch, the color soars.

A century's end, the legacy stays,
In denim's rise and fashion's ways,
Indigo's blue, through time's haze,
A timeless trend that never sways.

124. A Clothing Poster.

The impact of Indian natural indigo on Western fashion in the nineteenth century was profound and multifaceted. Designers were drawn to the depth and versatility of indigo, incorporating it into their collections in various forms. From the iconic denim jeans to the intricate patterns of bohemian dresses, indigo has left its mark on Western attire.

In 1873, a pivotal moment in fashion history occurred when Jacob W. Davis and Levi Strauss patented a pair of work trousers made from durable denim, reinforced with rivets. These trousers, now known as jeans, were initially designed for the working class, offering a robust and practical solution for labor-intensive jobs. However, the aesthetic appeal of the indigo dye, combined with the jeans' durability, soon transcended social classes and became a staple in wardrobes across the globe.

125. Mrs. MacDougall, Portree, Isle of Skye, 1811. Women often wore dark blue wool skirts. To get dark blue, the dyer used indigo, a dyestuff that could be bought from a shop or from a travelling pack-man. For centuries, people grew woad (Isatis tinctoria) in Scotland, but they began to buy indigo (Indigofera tinctoria) imported from foreign countries.

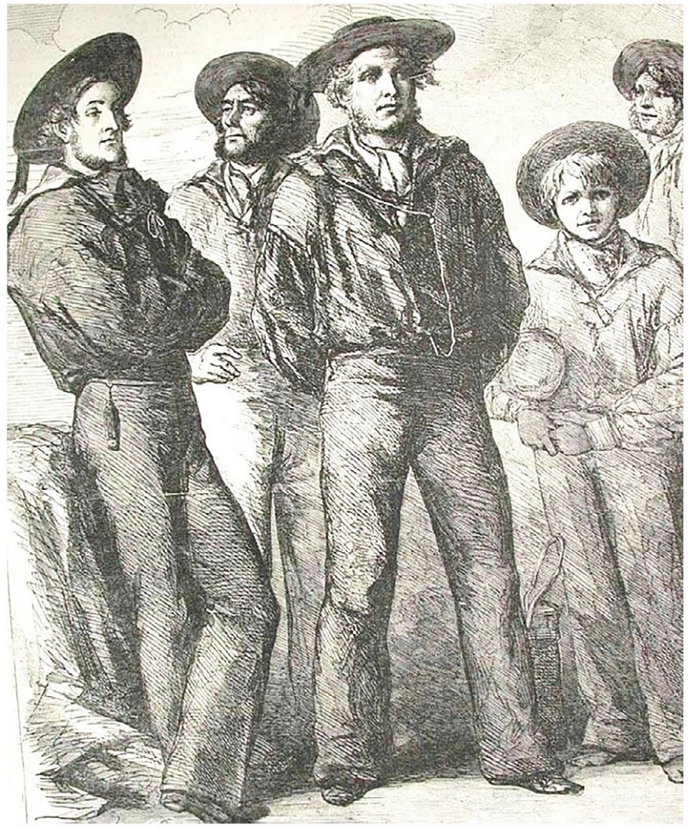
126. Alistair Munro, ferryman, Isle of Skye, 1811.

127. French Indigo Linen Chemise, Workwear Shirt, Artist Smock, Homespun Linen, 19th Century Hand Sewn, French Chore Wear Farmhouse Peasant Wear.

128. American Dress from the late 1860's. Finely crafted of indigo dyed cotton, this casual dress features a printed yellow leaf and stem pattern and white resist leaf veins. Source: Kent State University Museum.

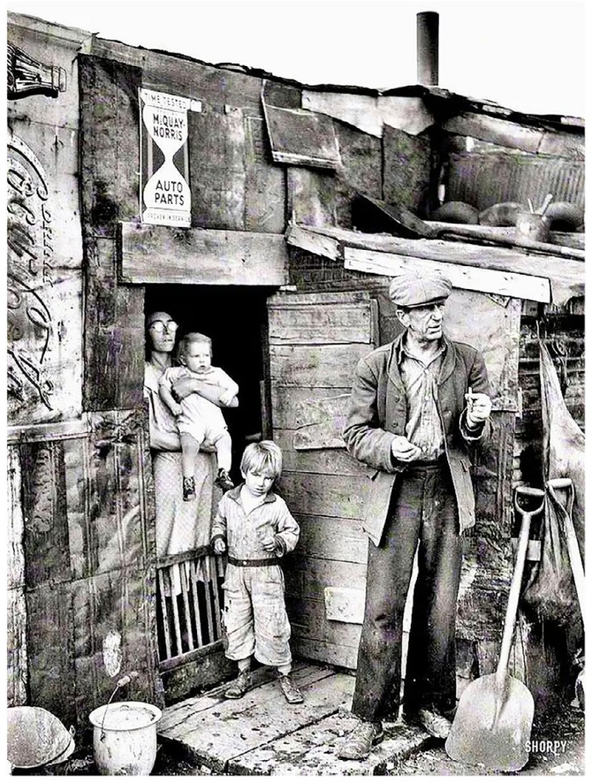
129. An old peasant woman from Dachau near Munich, 19th century.

130. The most famous use of indigo is in denim. The first pair of blue jeans was introduced 150 years ago by a Bavarian immigrant, and Genoa (Italy) became famous for strong blue cloth suited for extreme workwear. In fact, Bleu de Genes, or the Blue of Genoa, later evolved into 'Jeans.'



131. In the 18th and 19th Centuries a river ran through this street where workers would dye cotton, silk and wool. In the late 17th century, weavers in Nimes, France, accidentally made the first modern denim, a course, sturdy, cotton fabric, while trying to replicate the process of producing another popular heavy-duty fabric called serge. Textiles made during this time were often named based on where they were first manufactured. So, they called the new material "serge de Nimes" meaning literally "serge from Nimes." Legend has it, over time, as the fabric became more widely used, English and French merchants shortened the name to "denim."

132. In 1848, a man named Levi Strauss emigrated to the US from Bavaria and began working with his brothers selling wholesale dry goods in New York. He soon decided to head west to San Francisco, which was in the thick of the California gold rush. Once there he began selling sturdy work pants to the thousands of miners who were hoping to strike gold. They needed pants that could withstand weeks and months of daily wear, without shredding to rags. Denim fabric was thick. The stitching was heavy. It could protect you from scrapes and cuts. Strauss' sturdy denim pants were a hit.



133. An auto-repairman in denim jeans and his family

134. Levi's jeans advertisement.

135. Levi's jeans advertisement.

136. Dating back to the 1850s, denim trousers found in the attic of a late-1700s farmhouse in Roanoke County are now believed to be the oldest known blue jeans in the world.

7

Snippets of Indigo Dye-making from around the World

From the isles of Southeast's lush embrace,
To Africa's vast and open space,
Indigo's journey, a tale so wide,
In every vat, its stories hide.

In Asia's heart, the dye takes flight,
On batik waves of darkest night,
Through Java's hands, the patterns flow,
In Hmong threads, the blue hues glow.

Across the sea, to Africa's land,
Where indigo's roots dig deep in sand,
In Tuareg veils, the blue does weave,
A tapestry that time can't cleave.

From Yoruba's rich adire styles,
To Mali's boubous that stretch for miles,
The dye speaks of wealth, of status, of might,
In every cloth, it takes its right.

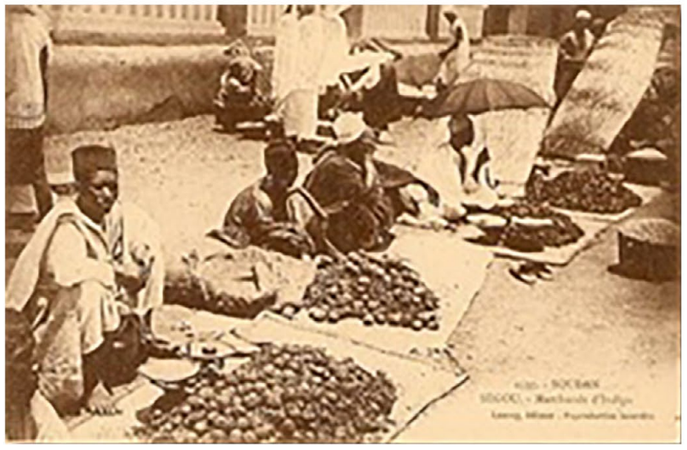
Two continents, both near and far,
Under the same bright indigo star,
Their stories woven, both old and new,
In shades of an eternal blue.

137. Sarong, early 1900s. Indonesia, Java, North Coast, early 20th century. Batik; cotton. Batiks made along the northern coast of Java were influenced not only by Chinese motifs and designs but also European, as a result of the Dutch presence in Indonesia from the sixteenth to the twentieth centuries. Batiks dyed only in indigo were a specialty of Indramaju.

138. Indigo factory, Java.

139. Indigo is created in potholes carved in pumice "tufgrond" in Karoland, Sumatra. Created: between 1914 and 1919.

140. Africa. Algeria. Saharan Tuareg, c. 1900. Typically, the men are veiled, the women not. Engraving, 19th century.



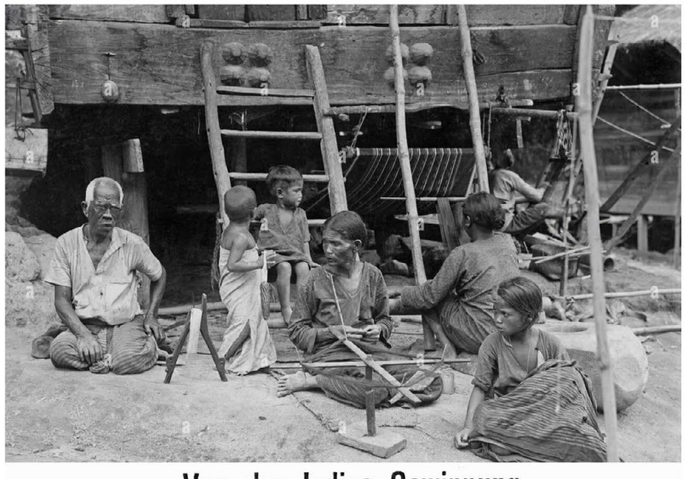
141. Dried balls of indigo on sale in the market at Segou, Mali, early 20th century.

142. A rare early 20th century image of Yoruba women dyers with their clay dye pots. Vintage postcard, circa 1910.

143. Malinke dyers old postcard, photograph taken by Edmund Fortier in the Futa Jallon region of Guinee in 1905. Note the use of a half-buried pot as the dye vessel, and, at the left, a woman beating folded cloth to impart a glazed sheen.

144. Hausa male dyers in Kano, circa 1950. Note the concrete dye pits sunk in the ground.

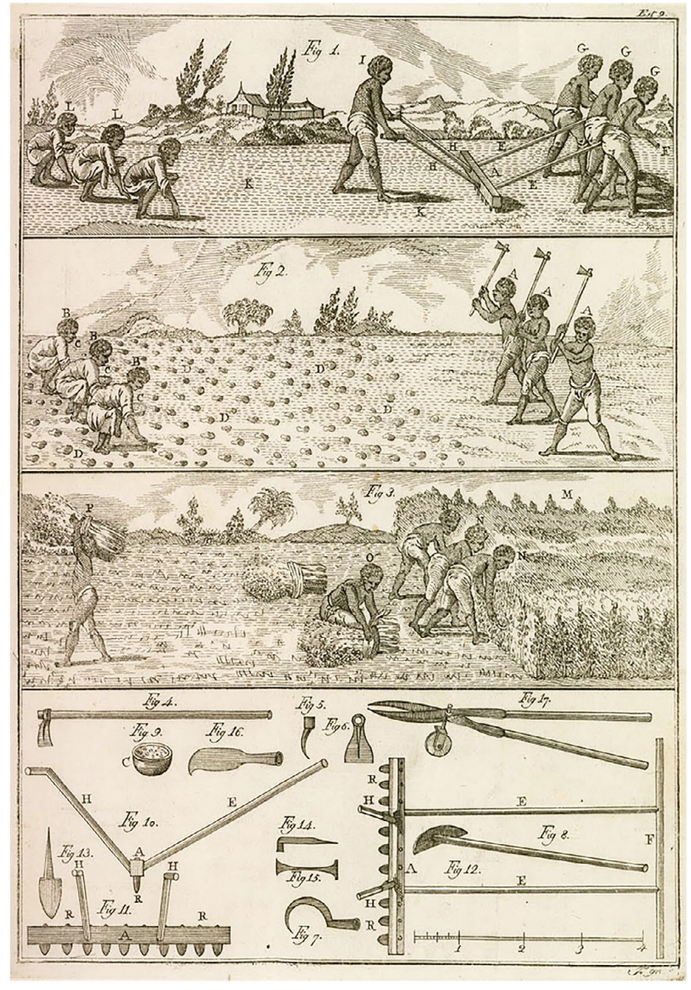
145. China: Indigo, 1855. /Manufacturing Indigo in China. Wood Engraving, 1855.



146. Indigo production in Indonesia, 1914. The picture shows a family of the indigenous Batak people living on the island of Sumatra. Here several generations work on the production of the indigo fabric. They spool and weave the yarn in front of their house. Date created: 01/01/1914-31/12/1914.

147. Vintage, Hmong, handwoven hemp, Indigo, Batik Hand Drawn, Natural.

148. Josć Mariano da Conceição Velloso, in O Fazendeiro do Brasil, (Lisbon, 1806), vol. 2, plate 1, foldout following p. 341. ("Preparing the soil to cultivate an indigo field and then harvest it") shows various phases of the planting and harvesting of the Indigo plant: fig. 1 (top), depicts preparation of the soil for planting, using a rake; fig. 2 (center) shows the use of hoes to make the holes into which the indigo seed is planted; fig. 3, depicts harvesting of the plant, gathering it into bundles, and carrying it to the tanks or cisterns for further processing. The bottom panel shows a variety of tools and implements used in indigo.



8

The Decline of Natural Indigo

In fields where once the indigo bloomed,
A sea of blue in nature's loom,
Farmers toiled, and colors soared,
In India's lands, the blue was adored.

But from the West, a storm arose,
Synthetic hues in chemical throes,
'BASF Indigo Pure', they named the dye,
A blue revolution, under the sky.

The natural fell to the prowess of man,
A synthetic wave overtook the clan,
The art of old, now lost, declined,
As 'Indigo Pure' the world aligned.

Yet, in the heart of tradition's keep,
The natural blue, it stirs in sleep,
Awaiting the day, it rises anew,
To paint the world in its vibrant hue.

For though the synthetic may reign supreme,
The natural's beauty, like a forgotten dream,
Whispers still, in the craftsman's lore,
Of a blue that lived, long before.

II.

Indigo pure and Plant Indigo.

The *Badische Anilin- & Soda-Fabrik* first placed "Indigo pure B.A.S.F." on the market in July 1897, and in the thirteen years that have since elapsed synthetic indigo has taken its victorious course all over the world; a glance at the statistics suffices to show that in a comparatively short time natural indigo must be completely ousted. From the following tables can be seen how quickly the export of indigo from the German Customs District has increased, and, on the other hand, how the acreage and production of natural indigo in the two most important countries, British India and Java, have receded:

Export from the German Customs District.

1900	1 873	tons
1901	2 673	»
1902	5 284	»
1903	7 233	»
1904	8 730	»
1905	11 165	»
1906	12 733	»
1907	16 354	»

These figures refer to the actual weight of goods exported, the content of which, for the sake of comparison, can be taken on the average as 30 %.

The Export from British India

has dropped from about 6 758 tons in 1897/1898
to 1 500 » » 1905/1906
while the acreage planted (in Bengal, Madras, Agra and Oudh, Punjab)
has receded from 1 600 000 acres in 1896
to 283 900 » » 1908.

149. Indigo Pure and Plant Indigo.

The story of synthetic indigo is a narrative of scientific triumph and industrial revolution. It begins in the late nineteenth century, a period marked by rapid advancements in chemistry and a growing demand for vibrant textile dyes. Natural indigo, sourced from the Indigofera plant, had been used for millennia, but its production was labor-intensive and costly. The quest for a synthetic alternative was driven by the desire for a more accessible and consistent dye.

The pivotal breakthrough came from German chemist Adolf von Baeyer, who, after years of experimentation, synthesized indigo in 1880. However, it wasn't until 1897 that B.A.S.F. (Badische Anilin & Soda-Fabrik), a German chemical company, developed a commercially viable method for producing synthetic indigo2. This innovation was a culmination of over 17 years of research and a significant investment, marking a new era in the dye industry.

The advent of synthetic indigo had profound implications for the natural indigo trade, particularly in India, where indigo plantations had been a cornerstone of the economy. The cheaper and purer synthetic indigo rapidly displaced the natural dye, leading to the decline of traditional indigo farming. This shift not only transformed the dye industry but also had far-reaching economic and social consequences for the regions that had depended on natural indigo production.

B.A.S.F. developed a commercially feasible manufacturing process that was in use by 1897, at which time 19,000 tons of indigo were being produced from plant sources. This had dropped to 1,000 tons by 1914 and continued to contract after a brief interlude when natural indigo experienced a brief revival on account of the war.

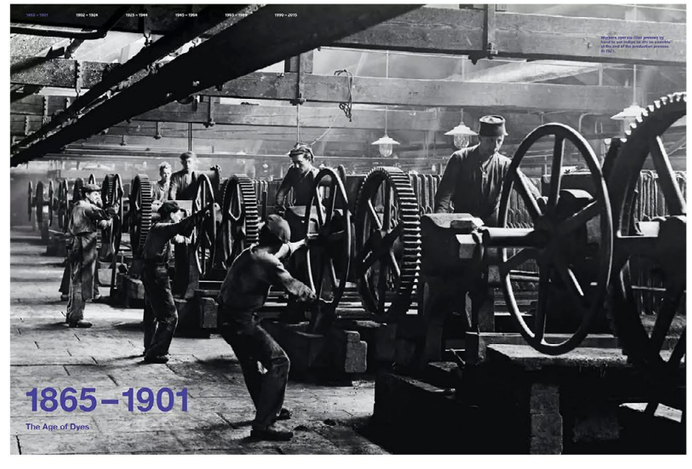
Today, almost all indigo used in the textile industry is synthetically derived. The story of synthetic indigo is emblematic of the broader trends of the Industrial Revolution, where scientific discovery and industrial capability converged to reshape industries and societies. By 2011, 50,000 tons of synthetic indigo were being produced worldwide.

150. Johann Friedrich Wilhelm Adolf von Baeyer was born in 1835. He was the first who succeeded with the synthesis of indigo (1880) and formulated its structure (1883).

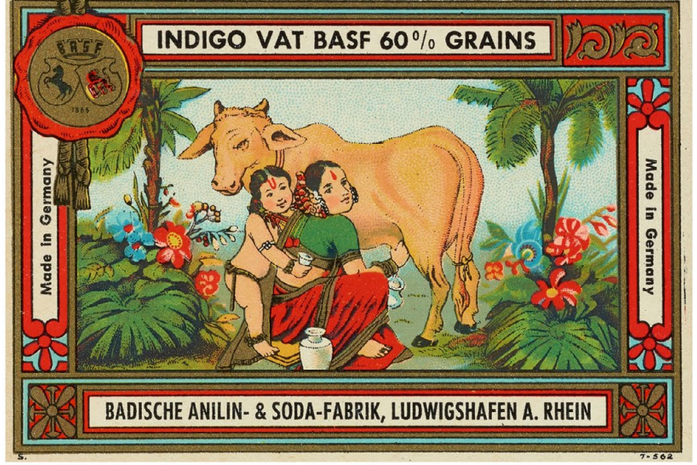
151. Adolf von Baeyer received the Nobel Prize in Chemistry in 1905 for the results of his work in the field of organic dyes and hydroaromatic compounds.

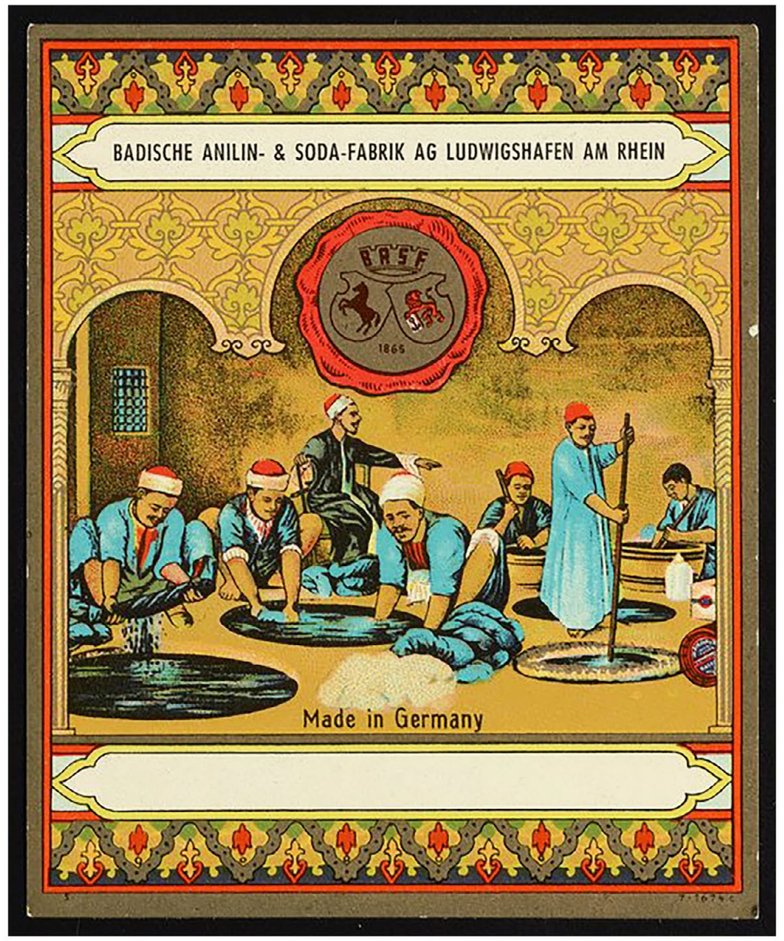
152. Synthesis of indigo by B.A.S.F., 1900.

153. Indigo laboratory, B.A.S.F., 1900.



154. Workers operate presses by hand to get indigo as dry as possible at the end of the production process, B.A.S.F., 1921.





155-158. B.A.S.F. dye label with indigo dye workers, c. 1900.

9

The Brief Return of Natural Indigo

When the world was caught in war's fierce tide,
And synthetic blues were set aside,
Nature's hue, once pushed away,
Found its path back to the light of day.

From Champaran's fields, a cry arose,
Against the indigo's-imposed woes,
Gandhi's voice, firm and clear,
Called for justice, the end was near.

The war had stalled the synthetic flow,
And natural indigo began to glow,
A brief revival, a hopeful sign,
In the midst of conflict, a chance to shine.

Yet amidst the resurgence of this crop,
Champaran's stand did not stop,
A Satyagraha for the farmer's plight,
Led to freedom's dawn, and indigo's night.

159. House of Gorakh Prasad where Mohandas Gandhi stayed during Champaram satyagraha.

The outbreak of World War I in 1914 marked a tumultuous period in history, not only geopolitically but also for the global trade and industry. One such industry that experienced a significant shift was the dye industry, particularly the production of indigo dye.

Prior to the war, the German chemical industry had achieved an almost total monopoly over the production of synthetic indigo, with companies like BASF leading the way after successfully synthesizing the dye in the late 19th century. This synthetic indigo was cheaper and purer than its natural counterpart, leading to a decline in the cultivation of natural indigo, especially impacting India's traditional indigo farming.

However, the war disrupted the German synthetic indigo supply chain, as naval blockades and the redirection of chemical resources for warfare hindered production and export. This disruption created a vacuum in the indigo market, as the demand for the dye in textile manufacturing remained high.

The shortage of synthetic indigo effectively catalyzed a resurgence of natural indigo, as manufacturers turned to India to meet their dyeing needs. However, the farmers once again found themselves under the British planters who forced them to cultivate the crop in order to maximize their gains from the windfall increase in demand.

The situation reached a tipping point when Mahatma Gandhi, upon the urging of indigo cultivator Raj Kumar Shukla, decided to take up the cause of the distressed farmers. Gandhi's arrival in Champaran in Bihar marked the beginning of a historic struggle for justice. Employing his philosophy of Satyagraha, or truth force, Gandhi sought to address the grievances of the farmers through nonviolent civil disobedience.

The Champaran Satyagraha became the first mass civil disobedience movement led by Gandhi in British India. It not only highlighted the plight of indigo farmers but also set the stage for the broader Indian independence movement. The British authorities were compelled to form a commission to investigate the farmers' suffering, which eventually led to the

abolition of the exploitative indigo cultivation system. The success of the Champaran Satyagraha laid the groundwork for subsequent national movements and became a beacon of hope for oppressed individuals worldwide. It demonstrated the power of collective nonviolent action and the potential for peaceful resistance to enact social change.

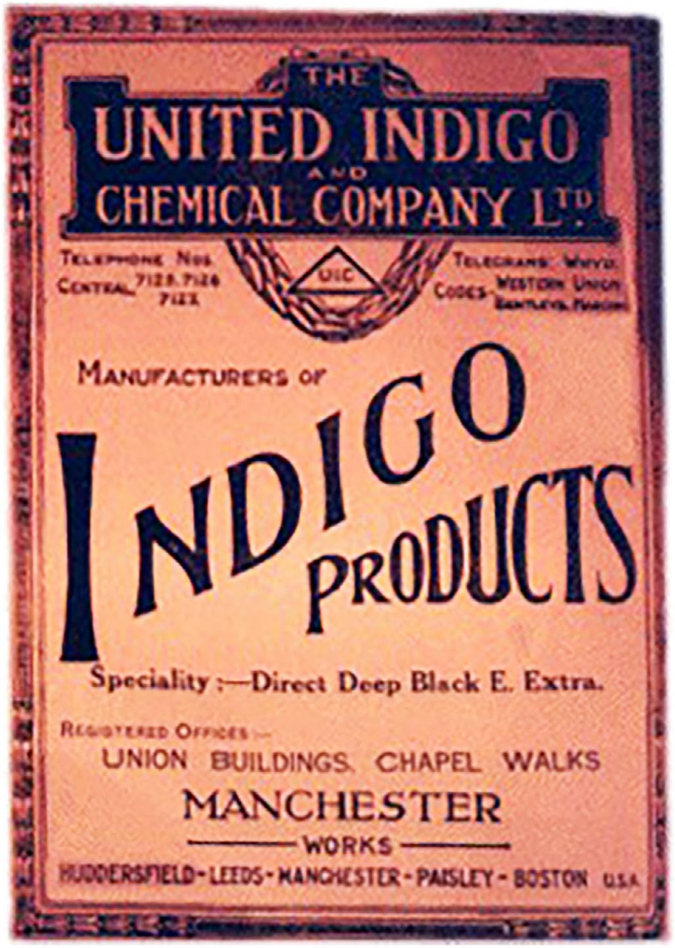
The end of the war did not immediately restore the German synthetic indigo industry to its former glory. However, developments in synthetic indigo and entry of global competitors to German firms led to the slow but definitive decline in natural indigo, relegating it back to an artisanal industry.

160. Mohandas Gandhi, Champaran Satyagraha, 1917.

161. Gandhiji and Sub-Inspector Qurban Ali in Champaran (1917).

162. Dr Rajendra Prasad with his close colleague & nationalist Bihar Vibhuti, Dr. Anugrah Narain Sinha taken during 1917 Gandhian Satyagraha at Bihar.

163. ICI dye container.



164. Synthetic indigo dyes.

165. 1901; BASF launches Indanthren Blue RS. Indanthren, a name synonymous with durability and vibrant color, refers to a class of vat dyes that revolutionized the textile industry. These dyes are known for their exceptional fastness properties, resisting fading from light, washing, and chlorine.

166. Vintage BASF Indanthren Ludwigshafen Am Rhein Germany Adv Litho Tin.

167. Indanthren advertisement.

10

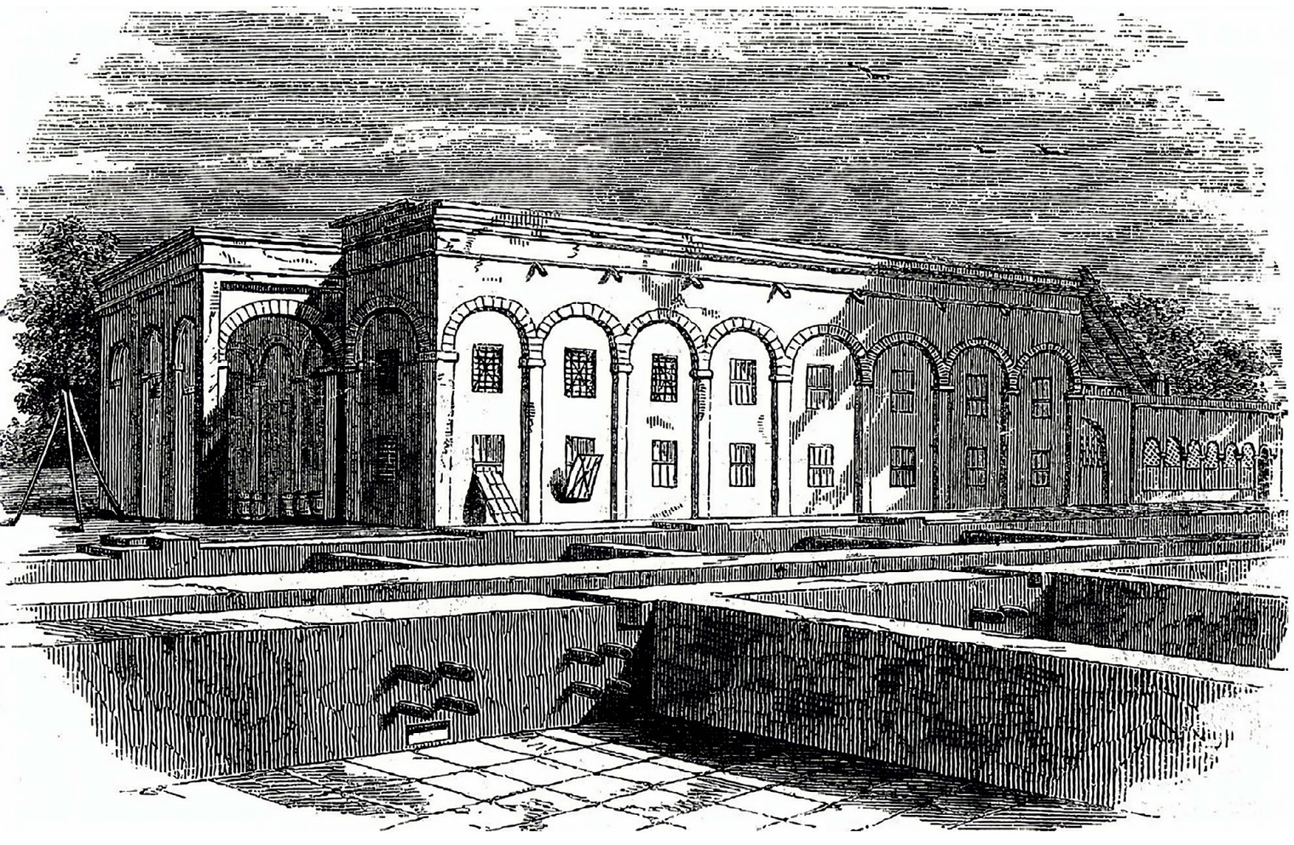
Crumbling Memories of India's Indigo Factories

Amidst the dust of time's slow dance,
Stand walls that hold a silent stance,
Old factories where indigo once flowed,
Now but ruins, where memories erode.

Tanks lie empty, a foreman's dream,
Where blue gold turned to steam,
Prayers to Neel Atha, now echoes faint,
In crumbling walls, the dye's last saint.

Vines creep over stone and brick,
Nature's reclaim, both lush and thick,
Yet in the air, a hint of blue,
A spectral hue, of a time once true.

Here, history's hands gently rest,
On India's indigo, once the best,
A testament to days of gory glory,
In every stone, an untold story.



168. Indigo factory, 1800s.

In the heart of India's countryside, amidst the whispers of the wind and the rustle of leaves, stand the remnants of a bygone era—crumbling ruins of indigo factories. These dilapidated structures are silent witnesses to a tumultuous history, where the vibrant blue of indigo once flourished as a symbol of wealth and colonial power. The crumbling ruins of indigo factories across India are more than just relics of the past; they are chapters of a narrative that shaped the economic and social history of the nation. As we reflect on these remnants, we are reminded of the resilience of the human spirit in the face of adversity and the ever-changing tides of history.

Indigo, known as 'blue gold', was once the centerpiece of India's agrarian economy, particularly during the colonial period. The British East India Company and other European traders capitalized on the high demand for this natural dye in the global market, leading to the establishment of numerous indigo factories across the Indian subcontinent.

The indigo industry was built on the backs of Indian farmers, who were often coerced into growing the crop under oppressive conditions. This exploitation led to widespread resentment and eventually sparked the historic Indigo Revolt in Bengal in 1859, where farmers protested against the unjust practices of the planters. The ruins of these factories are a stark reminder of the struggles faced by the laborers and the eventual triumph of their resistance.

Today, the ruins of indigo factories can be found scattered across states like West Bengal, Bihar, and Tamil Nadu. These sites, often overtaken by nature, serve as historical landmarks, telling stories of an industry that once thrived and the subsequent decline that followed the advent of synthetic dyes.

The ruins also hold cultural significance, as indigo is deeply ingrained in Indian tradition and spirituality. In some villages, indigo is revered as the 'Blue Mother', reflecting the deep connection between the dye, the land, and the people. The crumbling walls of the factories may be seen as monuments to the enduring legacy of indigo in India's cultural fabric.

169. Remnants of an indigo factory, India.

170. Ruins of an indigo factory, India.

171. Colonial residence of a Belwa indigo factory manager in ruins.

172. Neel (Indigo) Kuthi at Mongalganj, Bihar, India.

173. Remains of an indigo factory near Hardiya Kothi in Nautan block, West Champaran. (Arvind Yadav/ Hindustan Times).

11

Faded, but Holding on

In the twenty-first's fervent stride,
Indigo whispers of a time-tied pride,
Against all odds, it stands unbowed,
In rural fields, it sings aloud.

A hue reborn from ancient seed,
In South India's verdant deed,
Where farmers' hands with care unite,
To coax from green a blue so bright.

Through modern age's harsh decree,
Where synthetic dyes spread wide and free,
This natural blue holds fast its ground,
In history's heart, it's tightly wound.

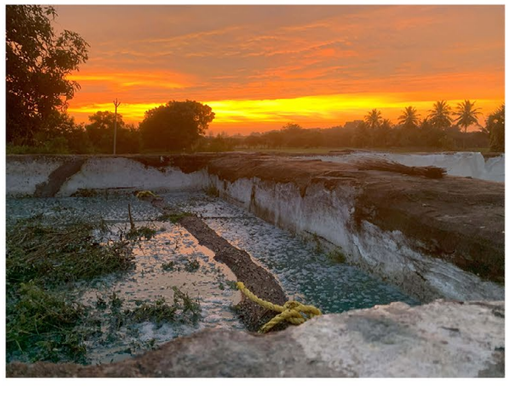
A testament to the will of earth,
Indigo's worth, a quiet rebirth,
In every vat and every fold,
A story of survival, bravely told.

174. One of the last remaining indigo dye-making factories in India: Dada Indigo located in Vengandur, Villupuram District, Tamil Nadu.

175. Cutting the indigo plant.

176. Loading the tractor with indigo leaves to be transported to the factory.

177. Soaking the indigo leaves overnight in vats.



178. The vats with soaked leaves at daybreak.

179. Beating the vats.

In the verdant landscapes of Vengandur, the tradition of indigo making is a vibrant chapter in the tapestry of Indian heritage. The practice of indigo dyeing in Vengandur is steeped in history, tracing back to times when natural dyes were the essence of the textile industry. Indigo, extracted from the Indigofera tinctoria plant, was a prized commodity, revered for its rich hue and colorfastness.

The climate of Vengandur is conducive to the growth of the indigo plant, with its hot and humid conditions fostering the perfect environment for cultivation. The process of making indigo dye is an art form passed down through generations. It begins with the careful planting of seeds, followed by the meticulous harvesting of leaves, which are then fermented in large vats to extract the precious dye.

Despite the advent of synthetic dyes, the indigo making tradition in Vengandur endures. It continues to support the livelihoods of many and stands as a testament to sustainable practices in a world leaning towards organic and natural products.

The indigo making tradition in Vengandur is a beautiful blend of history, culture, and sustainability. It is a legacy that continues to dye the threads of the present with the colors of the past, ensuring that the story of India's 'blue gold' lives on.

180. Beating the vats.

181. Indigo froth accumulating during the beating process.

182. Indigo residue in the vat after draining.

183. Boiling the indigo fecula.

184. Indigo fecula being drained of water by squeezing

185. Cutting the indigo cake.

186. The indigo cakes left out to dry before being transported to the store.

187. Indigo cake in the store room.

188. Dada Indigo … a remnant of the colonial indigo factory.

189. Dyed Indigo

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Sashi Sivramkrishna completed his Master's degree in Economics from the University of Bombay (Mumbai) and Ph.D. from Cornell University, New York, USA. His research interests are in the area of environmental, economic and monetary history as well as on more contemporary macroeconomic issues. He has published widely in academic journals including Journal of the Social & Economic History of the Orient, Business History, Environment & History, Global Environment, Essays in Business & Economic History and the Economic & Political Weekly. He is also the author of three books; "In Search of Stability: Economics of Money, History of the Rupee", "The Curse of Talakad" and "Maximum Government, Maximum Governance". Sashi is also an avid documentary filmmaker and his films have been screened at international film festivals like the Royal Anthropological Institute Film Festival (England) and Festival of Documentary Cinema (Russia).

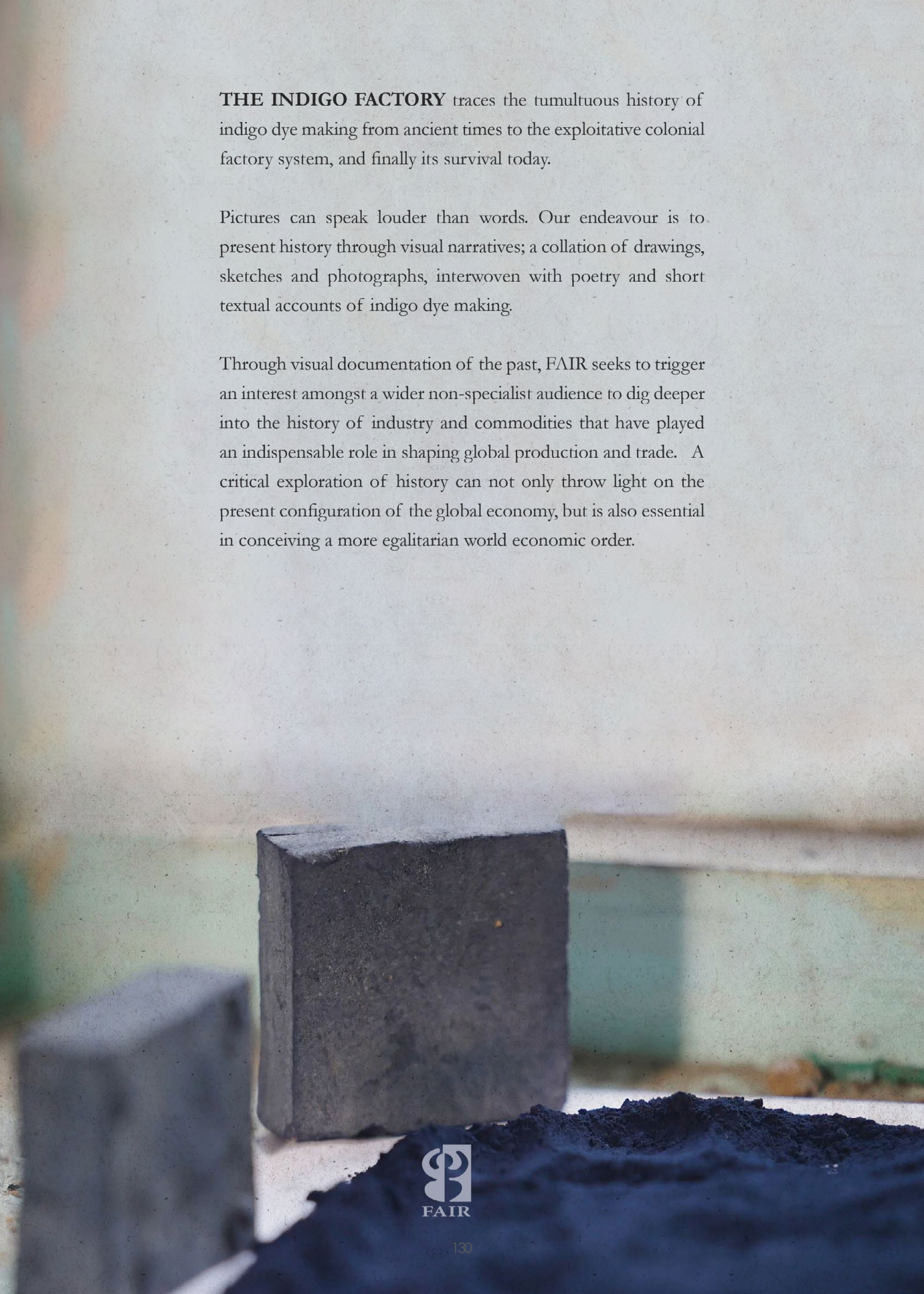
About the Foundation

The Foundation to Aid Industrial Recovery (FAIR) is a not-for-profit society registered in 1978 with the objective of engaging in research of contemporary management and macroeconomic issues, and to delve into the historical roots of economic transformation and development. FAIR seeks to communicate its research findings not only through conventional media like research papers and monographs but also through documentary films, graphic novels, photo essays and visual histories that could reach a wider, non-specialist audience.

THE INDIGO FACTORY traces the tumultuous history of indigo dye making from ancient times to the exploitative colonial factory system, and finally its survival today.

Pictures can speak louder than words. Our endeavour is to present history through visual narratives; a collation of drawings, sketches and photographs, interwoven with poetry and short textual accounts of indigo dye making.

Through visual documentation of the past, FAIR seeks to trigger an interest amongst a wider non-specialist audience to dig deeper into the history of industry and commodities that have played an indispensable role in shaping global production and trade. A critical exploration of history can not only throw light on the present configuration of the global economy, but is also essential in conceiving a more egalitarian world economic order.



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