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Sarah Sutro

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Stories of Indigo

Sarah Sutro

These essays are part of a larger book of essays and stories written during my two years living in Dhaka, Bangladesh called *Iron and Molasses: Stories of Natural Color*. It recounts, through narrative and example, the effect of color – on my life, on the economy of Bangladesh, past and present, and the rural pre-Civil War U.S. South. The story of indigo production is an early example of the effects of globalization, and it affords an unusual glimpse into the hidden potentials of natural and human collaboration. As an artist and writer living in Asia I encountered a natural dye center where the practice of making natural color was being revived. The store and workshop called Aranya create jobs for Bangladeshis, both in the countryside, where indigo and other color-producing plants are grown and in the city where it is refined and used in clothing production. While I was in Dhaka the woman director of the center gathered a number of Bangladeshis, an Indian and me, an American artist, to an experiment in using the dyes as ink and paint. I was drawn into the project as an artist, and emerged passionately writing about the history and practice. Working and learning at Aranya also afforded me a way into, or around Muslim society, which is quite difficult, as a woman, to penetrate. In the production room I learned and worked in an environment where class and religion were not so important. Tribals, Muslims, Hindus and Christians worked in an environment where there seemed to be much less discrimination. It was as if the work itself was an override to the prevailing societal conditions. I gratefully entered the shop often, to view the cloth, and products, to learn about dye production, and try new materials in painting.

Finding Natural Color

We had a chance to live in Asia. Michael was offered a job as head of the Peace Corps in Bangladesh. I was ready to stop teaching and have a chance to paint and write full time, and fully recover from my recent experience with cancer. Our son would go to an international school. When I discovered the natural dye store, Aranya, (which means forest in Bangla), close to where we were living (in Gulshan), with its charts of herbs and flowers and the colors which resulted from boiling them and using them as dyes, I felt I was home. Here was indigo (its name seemed to come from another century), henna, marigold, frangipani, pomegranate, dahlia, onion, eucalyptus and many other plants whose names I could pronounce, labeled on a grid on the wall; soft and pure colors, like a late Mondrian of Asia, leaning towards the yellows (lemon, cadmium, neutrals, greens) with the one blue, indigo, thrown in at the upper right. Each square had a kind of integrity, being not exactly a color you would see on a color wheel or a paint chart, but rounding out into something else, a natural host of colors, as none, like the cadmiums and cobalts of oil paint, were made from metallic ore. henna,

marigold, frangipani, pomegranate, dahlia, onion, eucalyptus and many other plants whose names I could I imagined that each hue might have been a musical note, and if so, the whole chart might have sung itself like a giant chord ranging from deep (the dark brown and dark blue), to light (the nearly brilliant yellows). At first it was the charts of dyes and the fabric that drew me in - the clothing itself was such a profusion of color and style that it was hard to know how to begin to look; the Eastern shalwar kameezes, the long silk lengths of saris, men's kaftas, scarves of every length and design, vests, blouses, pillow covers, bedspreads, handmade paper - all repeating and slightly changing the combinations of colors I saw on the charts, but in endless variety and pattern, like a Bach fugue that goes on and on, only slightly changing the configuration of its notes.

One Saturday I signed up for a workshop with the Asia Study Group at Aranya to learn more about indigo dying. A sixteen-foot table with white cloth pinned to it was set up in a workroom. At one end of the table a man in white was dipping a wooden block into an indigo mixture, and then carefully pressing the block onto the cloth. Gradually, slowly, he built a pattern across the hem of the cloth, and then began again to create a second row of pattern. In the back courtyard were two pots of boiling dye. Into one, containing a dark, rusty red madder, a second man dipped a batiked cloth, pushing it in again and again with a long stick. Further back in the courtyard, a long cloth was being pushed into a vat of indigo, the most costly of dyes. It emerged as a deep, satisfying teal green, only to turn to brilliant chalk blue as it hung on the line in the air and sun.

I lingered over the chart, studying the colors and the names of unfamiliar plants: *manjit*, a warm brick red; *sheuli*, a light gauzy yellow; *babla*, a pale pink orange; *shialnutra*, a greenish taupe; *pawa*, a pale rose; *holud & hartaki*, a deep dark purple-brown; *coran*, a coral red; *catechu*, a dark red; *hartahi*, gold; *shilkorai*, a brownish-orange; *latkan*, a bright orange; *sundari*, a purplish brown; *catechi-4*, a warm brown; *hartalki-4*, a shade of black. I wondered about all these plants that we aren't familiar with in the West, and what other uses their natures have suited them for. Who is to say there aren't tonics among these colors that are known in the East, which we have yet to hear of? Naming them seems to give them power.

These plants and colors are the inspiration for stories. My thanks to Aranya, Bangladesh and the Asia Study Group for the chance and the reason behind telling them.

Indigo

I go over to *Aranya* to buy a vest and look around, wearing a printed *shalwar kameez*, made right here. Ruby is in her office. I sit down opposite her and talk about the

business and whether I can get some more dye from her to use in my drawings. She is eager to have artists try the different colors, maybe use them permanently, and she is also talking with other people who may create factories and manufacture the dyes in larger quantities. I find her lack of competitiveness with others in this field refreshing. She is so clearly identified with the work and wanting it to takeoff in Bangladesh, and not with her own personal success, although she confides in me that she thinks her store and its designs will always be unique. I am inclined to agree. There is artistry in everything done here. She wants to know how I have got on with my drawings and I tell her that it took some time to find the right paper, but that now I am happily experimenting, only I have run out of dye. The indigo grew mold after awhile, but I used the iron and molasses, whose color remained fresh, until it was done and I'm interested in trying the warmer colors. We talk about the permanency of these dyes, and how they might store over time in jars. We agree that I will call soon, and come with my small plastic containers for any leftover dye paste. As I sweep past the racks of multicolor clothing on my way out, my eye picks out the blues of indigo and I have to stop again to study the designs and patterns on one particular rack. I know I will come back soon for one of these blue patterned garments.

According to a flier promoting new indigo production, the indigo industry began in the 19th century in Bengal, with British colonials and Bengalis working together. Bengal indigo became the finest and highest priced indigo on the Western market. But landowners began to force local peasants to cultivate indigo in order to increase their own profit. This coercion resulted in the bloody "Indigo Revolt" in 1859-60. (1)

There were actually three mutinies, but it was the second one, in 1859, that involved the most people and was to have the greatest effect. There were scattered revolts and burning of *nilkuthis*, or blue houses, in 1800. By 1859, six million peasants had become involved; burning, looting, fighting and boycotting took place. On the plantations, peasants burned indigo crops, killed planters and closed down the *nilkuthis*, using few guns but many locally made weapons (such as spears, bows and arrows, and slingshots). Women also participated in the fighting. The revolt spread throughout Bengal. The third revolt began in 1889, in the northern Jessore region of Bangladesh. Peasants won their independence from the planters and were then able to farm independently. By 1897, much cheaper, synthetic indigo was developed, which dried up both the trade and production of natural indigo. (2)

Whenever I hear about indigo it seems shadowed, and I see now this has to do with the colonial oppression associated with its cultivation and sale. For example, before the Civil War in the United States, indigo was cultivated (along with cotton) among the sea islands in Georgia, using the labor of African-American slaves. The very fortune of indigo is historically tied up with forced, indigent labor.(3)

In Georgia, I stayed on Ossabaw Island, which at the time was owned by one woman, Eleanor West, in whose family the island had been for years. She had created two retreat centers for artists, writers and naturalists on the island. Old slave cabins and causeways built by forced labor and overgrown fields dotted the landscape. The roads were covered with crushed white oyster shell and the cluster of cabins were also impressed with the broken white bits of marine life. Different areas of the island seemed to exude particular qualities. The road past the abandoned cabins that led to a causeway and eventually to an abandoned boat had a sleepy, silent character. The buildings themselves seemed dark and inviolate. The island was as mysterious as it had once been well known - with plantations and a southern pink stucco mansion and the work force, which transformed the land from its once wild state to cultivated fields. Now it was wild again, and largely unused. Except for a network of dirt and shell roads which webbed the island and the two artist retreats, one centered around the old mansion, one in the clearing of an old lumber mill, the miles and miles of land and tidal river and bay and beach were completely uninhabited by people. Wild animals and snakes created a natural Eden. We discovered each of the paths and roads had their own character too. Some were light and as it were blessed by the bowing cabbage palms growing every which way in the semi-tropical jungle, others strangely twisted feeling and troubling, where you sensed that something tragic had occurred.

I came to the island first in an interlude between jobs, from a northern February to a southern beginning spring. I fell in love with the multi-layered island with its dark-and-light history, and huge live oaks casting shade. I knew I'd be back. I returned two years later with Michael, whom I would later marry and have a child with. We stayed at the more alternative retreat this time, called, appropriately, Genesis, and took long exploratory hikes down all the roads, and trips down many of the rivers, crossing the island, camping on the beaches and canoeing out to other small islands at high tide. It was during this time that I heard more of the indigo trade and sensed the ruins of a former life and society on the island. Indigo was linked with the history of slaves and, like other elements of its own checkered history, America would rather not touch it. The story of indigo was written in the records of the rural south in heat and hand-picking and misery; the value of it was so great at one time it was nicknamed "King Indigo." (4)

Indigo began to be cultivated in South Carolina in the 1740's, and in Georgia in the 1750's. African slaves may have brought it, ironically, as Africa itself had indigo fields and cultivation. Indigo dyes cotton and wool, and is made into a paste which is treated with an alkaline reducing agent. A chemical reaction turns the paste yellow and makes it water-soluble. (5) Britain supported indigo production in the colonies - they needed a source of blue for various cloth production and paid well for the dye, although the American Revolution ended these payments in the 1770s. "Indigo" was the Spanish word for the English word "India," suggesting India's early development

of the plant, where it grows most profusely. A colonial planter named Elizabeth Pinckney was said to have been an important figure in the development of indigo as an export in the New World. She took over the management of her father's plantation, and must have realized the great demand for indigo in England, and decided to try growing the plant. Pinckney was born in Antigua, then a British colony in the West Indies, and moved near Charleston, South Carolina when her father inherited three local plantations. The American indigo industry came to a close in 1865, when the outcome of the Civil War brought an end to slave labor in the South. (6)

One of the drawings I do with indigo is intense and dark. Another artist who I met at Aranya says it looks like a monsoon. I am reminded of the change that took place in my work on Ossabaw – how I went to the island a still-life painter, painting inside, and came home immersed in the landscape. Stunned by the moving energies of the island, I started venturing out into its terrain, eventually rigging up a plastic milk crate full of watercolor supplies that I balanced on the seat of an old bicycle, pushing it along by hand. I would peer into the jungle that lined the road and stop when I saw something I wanted to paint. Sitting on the upended milk crate, I began a small, wet watercolor. In this way I studied palm bark and leaf growth, tidal rivers, shells, and trees stemming from pools left by the rain. To paint with the rhythms of the island I abandoned my cautious approach to painting, broadly flooding the paper with water, working into the paper wet, and letting the images remain partially abstract. It was a leap in my painting that pushed me in the direction of Nature abstraction, and started a long series of abstract paintings continuing to the present day. In the indigo drawing I see the same powerful energies of Ossabaw, only now I am in South Asia, experiencing the land and weather of a tropical delta.

Recipe for Indigo Dye

Plastic garbage can, 10-gallon –for indigo vat

Tall jug or jam jar – for stock solution

3 cups salt

1 ½ cups caustic soda dissolved in water

1 ½ cups sodium hydrosulphite

2 cups indigo grains

2 pints water (remove a portion to dissolve caustic soda)

The dye is made in two parts, the stock liquid and the vat. Each should be made in a tall straight-sided vessel so that as little liquid as possible is exposed to the air when oxidation takes place. When the dye is made one should try to keep the vat warm and at an even temperature between 60F (16 C) and 100F (38C). An electric element can be used or the vat can be placed next to a radiator enveloped in cloth or blankets. The vat will not work if it gets too cold or too hot.

Vat Fill the garbage can with warm water to about 4 inches below the rim. Sprinkle 2 teaspoonfuls of sodium hydrosulphite over the surface while gently stirring, before mixing into the stock solution.

Stock Add the ingredients in the following order, stirring while adding each:

2 cups salt

1 cup caustic soda, dissolved in water

2 cups indigo grains

1 cup salt

1 ½ cups sodium hydrosulphite

Remaining water

Leave this mixture standing for 5 to 10 minutes, after which there should be a dark iridescent scum on top with a clear yellow liquid beneath. Lower the jug of stock solution into the vat so that it can be poured without splashing, to avoid taking air into the vat. Stir gently with a long stick. A blue scum will quickly form on top of the water but the liquid below should be clear yellow.

Using an Indigo Vat

Wet the material to be dyed in detergent (2 Tablespoonfuls of detergent to one gallon water) and squeeze out surplus liquid. Carefully lower the cotton into the vat without splashing. It should be at least 2 inches below the scum, so suspend by string, fastened with safety pins. If necessary the ends can be weighted down with bags of stones or marbles so that the cloth does not float. Leave in the vat for 1 ½ minutes, then gently pull out and allow to drip over a bucket, sink, bath or newspapers, but not over the vat. It will come out yellow and gradually turn from green to blue. Allow it to air for three minutes or so until it is quite blue, then dip it a second time for one minute. It will emerge again as yellow and turn blue in the air. Allow it to dry, and wash thoroughly. The two dips will produce a deep rich blue color but if a darker shade is desired, dip several more times. A considerable amount of surplus dye will wash out. The cloth should be rinsed many times until the water is clear. A piece of cloth dyed in indigo can be safely washed and even boiled with white cloth without affecting it. (7)

Painting the Delta

I have gone over to Aranya. It's a Thursday afternoon and we're all supposed to be painting, but no one else is there of the group, just Moni and Ruby in the office. They're not even sure they have any paste. They're distracted by visa problems, and

I'm distracted by the 9/11 terrorist bombings in the U.S. – but I ask if they have any old dyes that I can take home. I've brought containers. I manage to come back with three – *catechu*, indigo and *shikorai*. Ruby says this will help them know how long the dyes will last, whether I can use them at the end of the week and still find the color good. I have come with a roll of paper and a fresh pad of paper, and so, since my driver just dropped me off, I wind my *orna* scarf around my shoulders, pack up my bag with dyes and head out to walk home. On the way, I look at the bolts of silk and printed cotton in the fabric room and admire a new pattern, in soft, warm brown, a variant on fleur-de-lis. And I say hello to Mr. Hussain who is printing fabric on one of the long tables in the work room. He goes back to work immediately, being rather silent in general.

Outside it is windy and the traffic is heavy. I am bundled up against the eyes of strangers and the calls from rickshaw drivers. I pass the lake and gratefully let my eyes drift out to the horizon of white buildings on the far shore. In the city to get a long view like this is like a balm to the eyes. It takes me nearly ten minutes to get across the road with the traffic, and then I enter road #50 which is muddy and filled with puddles, people and vehicles. I look down and the outer roll of my paper has been splattered by a passing car. At least the color is natural, and not unlike the brown dye we've been using. I get such pleasure from these simple, infrequent walks: to the club, to the Korean Restaurant, back from *Aranya*. I enter my cross street and slow down, sashaying down the small street with all the palms overhead, green, moving, alive.

Later, we are waiting to find out if we'll be evacuated. The world situation is tense after the bombings in the U.S. (the 9-11 bombings). Being in a Muslim country puts us at risk. There are many days when the embassy advises us not to go to downtown Dhaka, and we can hear demonstrations from our house. We've turned Canadian for awhile, if anyone asks. The painting at *Aranya* has been suspended for now as Ruby and Moni and one of the other artists are all away. I have three containers of dyes in my studio, which they gave me last week before they left. I've used them once. As with much of my work, the best of it does not spring full-blown from first attempts. When I look back at what I did last fall, I find only one painting/drawing that I like and that I would want to show. It's the stormy set of marks in Indigo that looks like inner and outer weather. The paintings on silk I did at *Aranya*, seen last week for the first time, are disappointing – they seem to have bleached out and the subtle washes I thought I was getting when I added a lot of water to the dye are gone altogether. I will have to work hard to have pieces to show in the fall. Today I realize if I don't use the dye soon it will go bad– so I lay out a stack of handmade banana and water hyacinth paper, cut each piece in half so that I have plenty, open the containers of dye, gather brushes, clear the table, bring out a container of water, and begin.

With the heightened feelings of the last week, the new world situation, I find my emotions running strong, which is giving me an energy I haven't felt since before my

illness. I start dabbing and brushing and scraping and even scrubbing and before several hours are up – lunch forgotten – I have 16 drawings. I locate one of the three drawings I did last week and add to it, using first *shikorai*, a light golden transparent color, *catechu*, a brownish creamy gold, then indigo to build up a patina.

Sixteen drawings do not, of course, yield 16 show-worthy drawings. Even as I'm carried away by the thrill of being completely immersed in painting, I know that these may all be sketches, rehearsals for the work to come. If I am lucky, I will come out with two or three or maybe only one resolved drawing after this afternoon. Plunging into the work and rapidly pulling drawings off like prints is so unusual: daily I plod through longer, more demanding paintings and intricate watercolors and far more concentrated ink drawings. But today's effort seems to be fueled by the current political situation, my sadness at the disaster in the U.S., and my fears for all of us. The dyes were there, the paper stacked, the brushes ready to use. Tonight or tomorrow I will come back to view the work, rip up some drawings, pin up others for contemplation. I have a fear that if we are evacuated soon I won't get a chance to show this work in the indigo show. There is strong anti-American sentiment since the terrorist attacks which may necessitate our leaving – and I want these marks to be included in *Aranya's* history and process. I have a suitcase packed with essentials. Everything else will have to be left behind.

Looking over the dye drawings, I choose seven, including the early dark blue “Delta.” I photograph these out under the bay tree, in case they get sold, and take them to *Aranya* to see if Ruby and Moni agree on my selection. There for the first time I get recipes for dye paste so that I can make my own inks, and discuss with them the next steps in creating the show. Ruby likes the work, but points to four of the recent paintings that don't appear to be indigo. I protest that indigo is there, the top layer, just affected by the warm light and dark beige underneath. The indigo turned a dark shadowy purple-grey on top of the other wet dyes. Two of the pieces are pure indigo. They are huge dry brushstrokes with clumps of wet indigo ink at the base, and they seem almost like the Japanese ink drawings to which my work has already been compared. Pure process, exciting in their ability to capture motion, a kind of natural weather or energy.

I find that this work on paper is carrying me back to the work I did before my illness – It has a kind of energy that was lost when I gave up traditional oil paints, and their dangerous solvents. Painting with oils made me tired and weak, as my compromised immune system tried to cope with the effect of turpentine and paint thinner and linseed oil. But the thickness of the oils and their ability to stay wet and workable, felt very much like the rough, textured surfaces of nature to me. Using these dyes made from nature, on paper made from nature, feels curiously right. I can't quite articulate it even in my mind right now, but the air and space coming through these drawings

feels authentic and real, similar to my invention years ago of a new way to draw, new tools to draw with. I dropped the conventional tools of drawing, along with my inclination to smooth and edit, and chose instead to use sticks I collected in the woods, and then shaped. I began by working outside, trying to capture on rough paper the marks and patterns of sunlight and shade that made up the tapestry before me.

Now I imagine using natural pigments and sticks to communicate, like ancient paintings on the sides of rock. Maybe we need these connections, in our over developed world, between ancient artists who lived in Nature, and our own efforts. Once again I am humbled by my inability to initially grasp the meaning of my work until later when, like a hologram, the meaning/image of my work will emerge out of thin air and the marks that were there all along will speak.

Planting Blue Gold

Digging deeper into the story of indigo production, I find that when Eliza Lucas Pinckney, the woman who so successfully created an indigo business in America, left the islands to supervise the South Carolina plantations, an indigo expert from the French Indies came to help her produce indigo dye cakes. (1) It is interesting to note that the abbreviated story gave Pinckney, still a relatively young girl, all the credit, for managing the indigo harvest herself. “Experts” and “helpers,” undoubtedly all of color, make the indigo revival happen.

Earlier, indigo, a cold-water dye, at times called “blue gold,” was brought to America from the Indies and was sold on the street for two dollars per blue cake. Woad, the other blue dyeing plant, which indigo replaced, smelled very bad when fermenting, depleted nutrients in the soil, and requiring rotational planting. (2) Louisiana especially relied on indigo production in its economy, and the plant now grows wild throughout the state. In Mexico, anil, or indigo, is still cultivated and made into cakes. (3) Many plants come from one indigo family: India and China share one branch of the tree, as do South and Central America. The East Indies originated another that has spread to most of the tropical world. West Africa hosts another branch, as does Japan. (5)

I really begin to understand the indigo dyeing process when I take a trip with the Asia Study Group to Muktagacha, a Garo community west of Mymensingh, north of Dhaka. The Garos are one of the many tribal peoples that live in Bangladesh. Originally from Mongolia, discriminated against in the wider Bengali society, these tribes were pushed into the northern and hilly areas of the country in the 13th century. (6) I missed the trip to the “Neel Baris,” or blue houses, in Mirapur earlier in the year, palaces owned by wealthy British merchant families, where indigo was brought by boat down the

Ganges river from Bengal. I learned from Moni that there is still a bad feeling, in Bangladesh, among old farmers, about indigo production. They were reluctant, even afraid, to start it up again. The association is with killing and oppression, even famine during the Indigo Wars. But here in Muktagacha, where the small industry is in its second year, I get to take a look at the actual plant, and the process of dye extraction. The Mennonite project, which is now focusing on indigo, is trying to extend crop patterns and create sources of revenue for people in the countryside. (7)

We gather at 6:45 a.m., on a Saturday, at Virginia 's house, which is not far from where I live. Twenty-five of us share a rented bus from the only tour company in Bangladesh , called "The Guide." The journey is slow. We travel three hours to get to Mymensingh, where we stop to meet the directors of the project, and see an actual indigo plant growing. In the courtyard of a small building that houses the offices of MCC, the plant looks like a feathery bush, medium green and light. It has tiny leaves and miniscule pink flowers like bleeding hearts. From the branches hang one- inch long thin seedpods, like miniature green snakes. Indigo is in the legume family, and won't prosper in a pot. The plant needs well-drained soil. Land that is partly hilly will do. The leaves are cut the first harvest, the stalks the second, and the third time the farmers let the whole plant go to seed. Like all legumes, the indigo plant gives nitrogen back to the soil. The low full light bush is easy to harvest, cows and goats don't eat it, and it has no problems with insects or viruses. It needs no insecticides or fertilizer. Thus it is very promising for farmers. Lately, farmers in the area have been planting pineapple with indigo around it as a natural fertilizer. One acre of indigo yields 3 tons of green indigo plant, with everything harvested. Most impressively, one field yields fifteen kg of indigo dye. Costing 3500Tk (roughly \$61.) to produce, it yields 15,000.Tk (\$263.) in the marketplace. (8)

We travel another half hour to the Modipur Forest area. The sun feels clean and bright. There is so much less traffic on the single lane roads, and the air is relatively clean. We drive through intervals of field and forest. Finally we stop at a small house with a walled-in front garden growing cabbage and squash. Walking through the front room and out into the back compound, we are suddenly in the midst of an indigo industry. On the packed dirt floor of this perhaps 20 x 20 foot space, are the various stages of indigo dye production. On the right are large plastic blue and black drums where water and indigo pass, and pumps and plastic hose carrying indigo in its various stages to the next station. Treadle pumps, as well as gravity, move the water from one container to the next, with some barrels poised higher than others.

The courtyard smells like wet hay. Huge sheaves of green indigo stalk and leaf are submerged in water for twenty hours, with bricks weighing them down. The pigment of indigo is in the leaves, but the whole plant is used, and then the leaves can be used as mulch, or sold as firewood. After twenty hours, Draino-like white flakes of caustic

soda sodium hydroxide are added to the water, while it is beaten with wooden beaters made of bamboo, in which one end is split and made into a round cage. Garo women have the job of beating the plant, which helps ferment or oxidize the dye. The sun heats the indigo and water, which turns green from the plant's sap. Air bubbles develop in plant roughage and rise to the surface. Greenish blue foam appears on the top of the vat of constantly moving water. Caustic soda helps to settle the sediment. The water is removed and the few inches of sediment, which looks like indigo mud, is saved. The indigo is further refined by sieving through a cloth into a large bowl, and then dried into flakes that look like thick blue rose petals. These are ground, and made into a powder, which is then sold commercially. The grinding is done with a stone roller, similar to those used to grind spices. Where powdered cakes are made, the indigo ferments in clay pots, according to local tradition, in a water solution of ashes, cow's urine, acid from beer, and yeast or rhubarb juice. (9) India sells its indigo in cake form, a very dark lapis-like blue. The dye is prepared for at least three days before use.

The goal of the project is to get Bengal Indigo on the wholesale market. Six hundred acres of land are available and possible for indigo cultivation, though right now only 12 are being used. So far, only three hundred kg of indigo have been produced, while the market demand is 300 tons. One ton of green material yields 5kg of dye. One tub produces about 400 grams of indigo. Pure indigo has nothing added in its processing. India adds a bark solution, Thailand adds lime instead of caustic soda, which gives more quantity, possibly due to the lime weight, but the color is less saturated, the blue whitish. Fortunately, caustic soda changes chemically in the dye making process, becoming almost neutral when it is poured back into ditches as waste. (10)

We wander around the courtyard, taking photographs and asking questions. There is a constant sound of running water and talk, and the damp, fermenting smell of the indigo branches. We are like a flock of birds restlessly moving about, then settling for a moment, then moving on. Small cups of strong dark Bangladeshi tea with sugar are served, on a tray, some in small glasses, as is the custom in the East. We linger, then head back into the house. In the darkened front room we gather to hear more about this particular project, how it began by experimenting with a few plants at the front of the house, and how it will take 3-4 years of experimenting to increase the yield. The potential for families to sustain themselves by growing indigo is great. Dye will be a profitable export.

At one point one of our guides refers to the history of indigo being tied up with British imperialism, and there are several discreet clearings of throat as the British members of the group mutter something about colonial experiments, gently protesting. Michael and I look at each other sideways, smiling. So far Aranya, and Kumindini, another craft and clothing venture in Dhaka, and a few other customers in Bangladesh buy the

indigo. Source, the MCC store downtown in Dhaka, also supplies it. Paper products using indigo are found in “10,000 villages,” a chain of shops selling hand-made foreign products and Oxfam shops in the US and UK.

Why was indigo such an important dye for so long? Why was it blue gold? Available in many parts of the world and in use for over 4,000 years, it is readily used with animal and vegetable fibers, and it is extremely color- fast. (11) The leaves have other uses: they are used as a black hair dye, and in China the roots and leaves are used medicinally for depression, swollen glands, heat rash and cancer. (12) But I'm tempted to say, people need the color blue.

The Mirror of Indigo

“The entire indigo industry of Lower Bengal ultimately rested on a foundation of coercion and intimidation...” (1)

In doing background research about indigo, I discovered the existence of a play about indigo that was produced in 1860 in East Bengal. It was shockingly explicit in its depiction of violence toward Bengalis, which “result[ed] in either the madness or death of almost every one of the principal Indian [Bengali] characters in the drama.” (2) The play lashed out publicly, cataloguing for the first time the strife endemic to indigo production leading to the indigo uprisings. Called Nil Darpan, *The Mirror of Indigo*, it dramatically expressed Bengali feelings about the indigo planters and the conflict that created the Indigo Wars in 1859-62. British authorities were confronted with the play by James Long, a socially concerned missionary, in 1860. Its repercussions eventually led to a complete change of policy towards indigo workers. (3)

The play was written by Dinabandhu Mitra, a post office inspector and playwright. (4) In the play, all the abuses surrounding indigo cultivation are compressed into one story. Peasants cultivate indigo for virtually no money; planters corrupt and abuse local Bengalis and British subordinates; women are forced into prostitution; planters engage in a culture of extreme violence. (5)

The play was translated, published, and distributed in Dhaka – but also sent to Indian and London newspapers, members of Parliament, and well-known officials and corporate players, without the Lt. Governor of Bengal 's knowledge. (6) A huge scandal ensued, and James Long was put to trial for libel in 1861. (7) He was accused of slandering the editors of the pro-planter newspapers, the *Englishman* and *Hurkarn*, and the planters as a whole. (8) He was found guilty, and sentenced to a fine and one month in jail. (9) A wealthy Indian patron paid the fine, and Long was visited and addressed by huge numbers of officials, Indians, missionaries and leaders of the

Hindu community, who supported his effort. (10) The result of Long's imprisonment and his stand on behalf of the peasants was that the upper class of educated Bengalis became conscious of the rural poor and their issues entered into the politics of the time (11)

The main objection to indigo production among Bengali farmers was that other food crops, such as rice, were more profitable. British concerns led the push to develop indigo as a commodity. The fickle weather of Bengal, with its unexpected storms and floods, made indigo cultivation difficult. (12) In addition, Indigo workers were treated outrageously. "Coolies," the lowest paid, lowest class workers, often tribals from northern Bengal, climbed into the dye vats during the process of indigo production to beat the water with paddles, effectively oxidizing the indigo with their bodies. (13) (Today the stirring motion is accomplished from outside the vat with long sticks or beaters, or achieved mechanically.)

A shifting web of economic and social relationships supported the production and export of indigo. In the early days of its cultivation, planters received monetary incentives from the British government of Bengal. Originally planters had to pay peasants to grow indigo on land they leased from Bengali zamindars, or local landowners. Later, planters could hold and control the land independently, although still acting as landlords under the zamindars. Planters and zamindars fought out their disagreements using locally hired bands of warriors, called lathiyalsas. Planters could hold a variety of kinds of leases, but tacit assent was needed by the zamindars before the planters could make the peasants cultivate any crop. Banks and agency houses in Calcutta eventually regulated the flow of money into indigo. Over the years many of these went bankrupt, throwing the industry and the price of indigo into new chaos. Fights took place between planters, and there was even corruption in the courts when disputes were brought before magistrates. British colonial interests saw indigo as a way of extracting money out of India and Bengal. In the "remittance system," the original investor in indigo, the British East India Company, was able to recover costs of loans to Indian traders, through exporting indigo from Bengal, where it was sold on the market in Europe. (14)

In 1858, in one of the frequent shifts in administration in the region, independent white grower/investor planters were made honorary magistrates in their regions, while the Indian zamindars, or local lords, were stripped of their political power. Much protest followed this decision. (15) The Lt. Governor of Bengal lost control following the racially motivated Sepoy Mutiny. Governmental panic, combined with a power struggle between the zamindars and the planters, incited what became known as the "Indigo Wars." (16)

Earlier, the 'Farazi Disturbances,' organized by a Muslim group with political ties to Calcutta, had resulted in the destruction of indigo factories in 1832. By 1859 the disturbances directly organized by the Farazis had been stopped, but many peasants participating in the Indigo wars were Farazis, skilled in weaponry and fighting. (17) Other revolts included the Santal Rebellion of 1855-57, where tribals revolted against control by planters, zamindars and Hindu money lenders; and the Sepoy Mutiny, fought in northern India in 1857-58, a revolt of native troops which instigated the transfer of administration from the East India Company to the British monarchy. The 1858-59 "wars" emerged from earlier revolts, while adding the element of a well articulated and new sense of social justice. The revolt stemmed from a skewed system where local people were judged by a different system than the British who lived in Bengal. Bengalis knew they were being forced to plant indigo, not for their economic gain, but for the British planters' gains. Eventually, more enlightened voices, including that of John Peter Grant, the Lt. Governor of Bengal, recognized and spoke out against abuse heaped on native workers. He concluded in 1859, "Indigo cannot be supported at the expense of justice." (18)

During the indigo wars local fighters were hired by planters and zamindars to protect their interests, and by 1859 whole villages went to all-out war with hand-made weapons: clay pots, brass plates, slingshots, bows and arrows, and spears, to fight the forced growing of indigo. (19) In 1861 magistrates were advised not to force indigo production on the peasant farmers. Farmers subtly undermined the indigo factories by refusing to sell to or serve the managers of the indigo factories in any way, forcing them to leave their jobs. (20) In 1860-61, indigo workers availed themselves of recent changes in the judiciary in Bengal. Lt. Governor Grant had multiplied the number of courts, and made them available to the peasantry, shifting power from the executive to the judicial branch of government and administration. (21) By 1861 peasants were filing lawsuits against planters, having developed a consciousness of their rights and the legal process. Previously problems had been resolved by edict and authoritarian rule. Now peasants were seen as equal participants in the system. (22) For about ten years this system favored the lower class, but eventually the rural middle class rose into a position of prominence and power. Many in the middle class were moneylenders. Earlier they had backed the indigo workers in order to bring about the downfall of the planters. Now the money lenders aligned themselves with the legal system, which supported their activity. Local law, honoring the rights of the poor, dissolved. By 1862-3 a new calm descended in Bengal. Some peasants went back to cultivating indigo, and were paid twice the amount they had been before. They did not have to use their best land for indigo, but could plant other crops at will. Many planters abandoned indigo plantations and became involved in other work. (23) The basis of the indigo wars: race, class and economic justice, helped set the stage for the future independence of India, (24) and, later, Bangladesh.

Bengal today is self-sufficient, but it struggles with the need to develop more industry, and increase its revenue through exports. The shrimp industry, the second largest foreign exchange earner, wrestles with issues of quality, environmental concerns, and foreign markets' lack of trust in buying products from this small South Asian country. The re-emergence of indigo as an ecologically friendly business benefiting the small landowner and businessman in Bangladesh is an amazing reversal of its earlier status. No longer linked to colonialism, big business and personal fortune, individuals and small non-profits and businesses have wrested it from a bloody history tied up with slavery and racism. The Mennonite revival, “Nikomol,” and Aranya's brisk business in cloth and clothing derived from indigo and other plants, represent a new start in conscious husbandry and economic gain.

When I encountered indigo for the first time at Aranya, I had no idea how much its history reflected the history of Bengal: the color blue -- woven like a strand into the tapestry of South Asia's struggles for independence -- so deep it is part of the actual fabric.

End Notes

I. Indigo

- (1) Nilkomol, MCC (flier), Mohammadapur, Dhaka , p.3.
- (2) Lt. Col. Faiz Siddiqui, *The Lost Nilkuthis of Jessore-Kushtia*, Dhaka : Jesmeen Ahmed,2001, pp. 41-46.
- (3) John Mack Faragher,ed., *The American Heritage Encyclopedia of American History*, NY: Henry Holt and Co., 1998, p.445.
- (4) Nilkomol, p.1.
- (5) *World Book Encyclopedia* , Chicago: World Book, Inc., 2000, p.223.
- (6) Faragher, p.467.
- (7) Beryland Ash and Anthony Dysen, *Introducing Dyeing and Printing*, NY: Watson Guptill Publications, 1970, p.113.

II. Painting the Delta

- (1). Marcia Bonta, *Dyes From Nature*, Brooklyn Botanical Garden, 1990, pp. 33-34.
- (2). Myers, p. 13.
- (3). *Colonial Dames of America, Herbs and Herb Lore of Colonial America*, NY: Dover Publications, Inc., 1995, p. 8.
- (4). Gary V. Ross, "A Blue Future for Mexican Indigo," *Dyes From Nature, Brooklyn Botanical Garden* , 1990, p. 37.
- (5) Sandberg, pp. 14, 19.
- (6) Novak, p.43.
- (7) Arun Naha, Sr. Development Officer, Job Creation Program and Joe Ward, Acting Program Leader, MCC, Dhaka : Asia Study Group Tour, Nov. 18, 2001.
- (8) Idem.
- (9) Myers, p. 13.
- (10) Joe Ward, Nov. 18,2001.
- (11) Bremness, p. 109.
- (12) Idem

III. Planting Blue Gold

- (1) Blair B. Kling, *The Blue Mutiny*, Philadelphia : University of Pennsylvania Press ,1966, p.60.
- (2) Ibid, pp.200-201.
- (3) Ibid, p. 118.
- (4) Novak, p. 81.
- (5) Kling, p. 198.
- (6) Ibid, p. 198-199.
- (7) Ibid, p. 201
- (8) Ibid, p. 203.
- (9) Ibid, pp.203-204.
- (10) Ibid, p. 206.

- (11) Ibid, p. 207.
- 12) Kling pp.30-31.
- (13) Ibid pp.18-19, 33, 39, 53-54.
- (14) Ibid, p.19.
- (15) Ibid, p. 66.
- (16) Ibid, pp.61, 67.
- (17) Ibid, p. 61, 68, 110-111.
- (18) Ibid, p. 65, 72.
- (19) Novak p. 81.
- (20) Kling, p. 174-78.
- (21) Ibid, p. 210
- (22) Ibid, p. 220.
- (23) Ibid, p. 193.
- (24) Novak, p.81.

IV. The Mirror of Indigo.

- (1) Ash, Beryland and Anthony Dysen. *Introducing Dyeing and Printing*. NY: Watson Guptill Publications, 1970.
- (2) Bonta, Marcia. *Dyes From Nature* . Brooklyn Botanical Garden , 1990.
- (3) Bremness, Lesley. *Herbs*. London : Dorling Kindersley, 1994.
- (4) *Colonial Dames of America. Herbs and Herb Lore of Colonial America*. NY: Dover Publications, Inc., 1995.
- (5) Faragher, John Mack, ed. *The American Heritage Encyclopedia of American History*. NY: Henry Holt and Co., 1998.
- (6) "Indigo." *World Book Encyclopedia* . Chicago: World Book, 2000.
- (7) Kling, Blair B. *The Blue Mutiny*. Philadelphia: University of Pennsylvania Press, 1966.
- (8) Myers, Diana K. "Dyeing in the Himalayas ." *Dyes From Nature* . Brooklyn , NY : Brooklyn Botanical Garden , 1990.
- (9) Naha , Arun and Joe Ward, Asia Study Group Tour . Dhaka : Nov. 18, 2001.
- (10) "Nikomol." (flier) Mohammadpur, Dhaka : MCC.
- (11) Novak, James J. *Bangladesh: Reflections on the Water*. Bloomington : Indiana University Press, 1993.
- (12) Ross, Gary V. "A Blue Future for Mexican Indigo." *Dyes From Nature*. Brooklyn , NY : Brooklyn Botanical Garden , 1990.
- (13) Sandberg, Gosta. *Indigo Textiles: techniques and History*. London : A + C Black, 1989.
- (14) Siddiqui, Lt.Col. Faiz. *The Lost Nilkuthis of Jessore-Kushtia (1795-1895)* . Dhaka :Jesmeen Ahmed, 2001.

Glossary of Terms

Aranya – “forest” in Bangla ; name of the natural dye store

Banani – a suburb of Dhaka where the natural dye store is located

Bangla – language spoken in Bangladesh; center of the “Language Movement” in 1971 during the War of Liberation

batik – cloth printed with wax, then dyed, then ironed

Bengal – the region including eastern India and Bangladesh; before Partition the most celebrated part of India, known for its artists, poets and musicians

cha dokar – tea shop

gamelon – Southeast Asian instrument ensemble, including percussion and string instruments

Garo – tribe living in the hill tracts of Bangladesh

Gulshan – suburb of Dhaka where the author lives

Kulna – southern central city in Bangladesh

kafta – man's loose long shirt

lalsag – dark green spinach with bright red veins

lungi – long tube of cloth traditionally worn over the legs by men in Bangladesh, tucked in at waist

nilkuthis – “bluehouses” or indigo factories once used for indigo production in Bengal

orna – scarf thrown over the shoulders, traditional dress for women in Bangladesh

Rangamati – hill tract area in northeastern Bangladesh

shamayana – large tent erected for celebrations in Bangladesh

samosa – potatoes, peas and other vegetables covered with pastry and fried, traditional Bangladeshi and Indian snack

shalwar kameez – outfit worn by women in Bangladesh: baggy pants, long dress with slits at the sides, orna scarf thrown over shoulders

taka – unit of money in Bangladesh; 58 taka equivalent to 1 US dollar