

# The Natural Dye Project: Bringing together a global team

Catharine Ellis

I'd like to relate a story of how a fair trade organisation, three American natural dyers and weavers, a young Mexican designer, an American yarn shop owner, a Danish textile chemist, a weave designer from California, a Guatemalan natural dyer and a group of Guatemalan backstrap weavers came together to help change a local economy.

Mayan Hands, a fair trade organisation, was started in 1989 by Brenda Rosenbaum, a Guatemalan anthropologist, and her husband Ferdy. The group currently works with about 150 women in Guatemala, helping them to develop products and markets. The women have skills in weaving and other crafts. When appropriate, Mayan Hands helps them to develop new skills in order to create viable products for the global market. The women use their income to support their families and educate their children.

I have been aware of Mayan Hands for a long time because of personal connections. Deborah Chandler, well-known author of *Learning to Weave*, became the Executive Director in 2003 and Mary Joan Ferrara-Marsland, the US Marketing and Distribution Director, was a former student of mine. Mary Joan and I had discussed earlier attempts to introduce natural dyeing to Mayan Hands artisans.

In 2012 I attended a *Weave a Real Peace* (WARP) meeting in Boulder, Colorado. WARP is an international networking organisation composed of weavers and other textile enthusiasts who are interested in improving the lives of artists in the developing world. Deborah Chandler, one of WARP's founders, was at the meeting. She had brought some naturally dyed cotton yarns that represented Mayan Hands' early attempts at re-introducing natural dyes to Guatemala. The colours of those yarns were pale, unsaturated, and generally uninteresting. They were very much like the natural dye colours that I had been getting on cotton fibres a few years earlier, before I learned better techniques from Michel Garcia of France.

I mentioned the possibility of going to Guatemala to teach natural dyeing and some of the skills I had learned from M. Garcia. Donna Brown, natural dyer and colleague from Colorado, had also been talking with Mayan Hands about natural colours. Donna and I volunteered to teach a workshop in Guatemala in early 2013. Since neither of us spoke Spanish, we spent the first week in Antigua, immersed in Spanish language classes each morning. We spent every afternoon in the studio of Olga Reiche, a native natural dyer of Guatemala. We used this time to learn and absorb culture, language and information.

The following week we went to San Rafael, a small, isolated village several hours from Guatemala City. Deborah Chandler, now retired from the directorship of Mayan Hands, was available as our guide and translator. We were to teach a three day workshop to a group of local women, all skilled backstrap weavers who were not able to earn enough income from weaving alone. Mayan Hands had organised previous workshops in natural dyeing with an original group of over 20 women from this village. Olga Reiche had taught a workshop in the village the previous year. She had brought the women energy-efficient wood stoves for their dyeing that eliminated smoke and

conserved precious fuel. We found the women ready and eager to learn more.

One must be very sensitive when going to an underdeveloped country to teach a skill. We would never have considered this project if Mayan Hands and its new director, Julio Cardona, had not already determined that it was appropriate and they had the infrastructure in place to lend support and continued help with workshops, market development and acquisition of supplies.

As soon as we arrived in San Rafael, Donna and I taught the women how to make an organic indigo vat, using local bananas



Indigo dyeing  
Photo: Rocío Mena Gutierrez

as a reduction material. We showed them how to properly scour and apply tannin to cotton yarns in preparation for mordanting. Joy Boutrup, of Denmark, provided us with a mordant recipe that was economical and very effective on the cotton.

We dyed the yarns using indigo, cochineal, osage orange, madder and pomegranate rind, achieving brilliant and saturated colours. The hues were similar to the bright palette that we associate with Guatemala, but somehow softer and gentler. We were very conscious of providing the women with enough information and procedures that they could continue on their own after we had gone home. Working with environmentally benign materials was very important in this setting since used dye pots were simply poured out behind the house, close to the creek where the villagers bathe.



Above: Scouring yarn  
Photos: Rocío Mena Gutierrez



Right: Overdyeing indigo to make greens

Before we left San Rafael we were already thinking about the next very important step: how to market and sell a product. Without this, there would be no value in the skills; the women needed to make an income from their work. We contacted Irene Schmoller of Cotton Clouds, a yarn and supply company in Arizona which specializes in cotton. Irene was immediately involved and ready to help the women. She believed that selling naturally dyed yarns, rather than any product made from them, would be the best way to engage others and tell the story of the women and their dye project. She conceived of a Friendship Towel and contacted Sarah H. Jackson, a weave designer from California, who volunteered to design a woven towel project with the naturally dyed yarns that could be sold in kit form.

The women would spend the next months working on their own, practising their techniques to be sure they could get consistent, repeatable colours. Back at home in the US we did thorough light- and wash-fast testing of the dyed yarns. We tried to answer questions from the dyers from afar but it became obvious that they would need more instruction and more importantly, affirmation.

One year later Donna Brown returned to San Rafael along with Diane DeSouza, a natural dyer from New Mexico, and Rocío Mena Gutierrez, a young designer from Mexico City. There had been some inconsistencies in the dyed yarns in previous months and the reasons became obvious immediately. We had taught the women to use soda ash (sodium carbonate) in both the scouring process and the mordanting process. They had been using baking soda (sodium bicarbonate) and chalk (calcium carbonate). These were easy mistakes to make when the ingredients were unfamiliar and looked very similar. It emphasized the need for continued support.

Rather than return to Guatemala myself, I had felt that we needed a young dyer who was a native Spanish speaker to join the team. I had kept my eyes and ears open all year long as I taught in various settings to identify the right person, and had finally found Rocío Mena Gutierrez, who I met at the *Couleur Garance Forum for Natural Dyes* in Lauris, France. Rocío had done an internship at *Couleur Garance* the previous year and had also been a student of Michel Garcia.



Above: Packing the kits  
Photos: Rocio Mena Gutierrez

Left: Kit preparation

Rocio shared a language with the women in San Rafael and connected with them immediately. After her initial trip to Guatemala she came to my home in North Carolina for several weeks to refine her own dyeing skills and then returned to Guatemala for a two month stay during the summer of 2014. She lived with the women, participated in their lives, and dyed with them. The time Rocio spent in San Rafael was key in helping the women refine their process and take it to the next step. They dyed quantities of yarn, wound it into balls and then packaged the yarn for kits right there in San Rafael. The dyers developed confidence and their business was fully launched.

One of the huge dilemmas for Donna and for me from the beginning was the fact that we had never been to Guatemala before and did not know local plants. Yet we needed the women to be successful in this venture. The cotton yarns are a product of Guatemala but we made the difficult (and possibly controversial) decision to bring dye extracts and tannins with us as opposed to harvesting natural dye plants locally. We experimented with the local banana trunk as a tannin source

but it proved to have too little tannin content to be effective. Ultimately we would like to identify some local plants that the women could use, but that will require a different set of skills and someone on the ground who knows the local plants, understands the growing seasons and how to harvest and dry plants for consistent results. Gathering or harvesting of plants can be a time-consuming activity and the production of food takes precedence. Consequently, the yarns and kits produced by the women are priced to reflect the cost of the imported dye materials.

Has the Natural Dye Project been successful? Of the original 20-plus women who began to learn natural dyeing several years ago, there are now five women completely engaged in the project. Last year each of the five San Rafael weavers earned approximately US \$300 per person from weaving scarves. Since they began producing dye kits later in 2014, each woman from the group earned over US \$1,100. They are actively filling more orders in 2015. Yes, I would dare to say that this project has been successful but the momentum must continue.



San Rafael dyers  
Photo: Rocío Mena Gutierrez



The author, Catharine  
Photo: Donna Brown

None of us could have carried out this project by ourselves. It required various skills and the collaboration of many. Each workshop gave the women a bit more knowledge and confidence, to the point where they are now able to carry on the project with minimal help. We all worked as volunteers and continue to do so in order that the lives of five women in San Rafael will be better and richer for themselves and their children. There is now a version of the Friendship Towel kit that may be woven on a rigid heddle loom and a garment design that uses the yarns. The community continues to expand, and includes those who hear about the Natural Dye Project and decide to weave their own Friendship Towel as they become a part of the team and the story.

Currently the dyers of Rabinal are independently investigating the use of local plants for their dyes and working to develop new products for the marketplace.

For more information please visit

The Natural Dye Project Blog

<https://naturaldyeproject.wordpress.com/our-story/>  
Mayan Hands

<http://www.mayanhands.org>

Tintes Naturales *Friendship Towel* kits at Cotton Clouds  
[www.cottonclouds.com](http://www.cottonclouds.com)

#### Notes on Health and Safety

When using any natural material for dyeing, dyers should fully inform themselves as to the possible toxicity of plant material they are choosing to use. They should be aware of local environmental law on the collection of material from the wild – and adhere to it. For information on safe handling of plants, the chemicals used in dyeing and for recipes, dyers should consult the most up-to-date natural dyeing reference books and refer to their health and safety sections. Older information may be inaccurate, or otherwise misleading.

#### Potassium aluminium sulphate mordant for cellulose

This is the mordant recipe Joy Boutrup provided for the San Rafael dyers. It is an old recipe which was used industrially, is inexpensive, yet very effective. The recipe is for 100 grams of fibre. Scour and pre-wet cellulose yarn thoroughly by boiling in a solution with a small amount of soda ash (sodium carbonate) and a surfactant such as Synthrapol.

**Apply tannin.** Measure 15g of tannin (gall nut or sumac) and add to 2 litres hot water. Water should be about 60°C – but will cool off in the process. Soak the fibre in the tannin bath for 1-2 hours. Remove the fibre, squeeze out excess tannin solution without rinsing, and dry the fibre if possible.

**The mordant:** Make two separate solutions.

##### alum solution:

12g potassium aluminium sulfate  
120ml boiling water

##### soda ash solution:

1.5g soda ash (sodium carbonate)  
400ml hot water

Dissolve alum in boiling water. While stirring constantly, add the soda ash solution. When these two solutions mix together a lot of bubbles will be produced so be sure to do it in a large enough vessel. Add an additional 550ml hot water. Mordant should be 35-40°C. Soak the fibre that has been pre-treated with tannin in the mordant solution for two hours. Rinse, and proceed to dyeing.

#### About the author

Catharine Ellis has always combined both weaving and dyeing in her work. For the last 10 years her focus has been on natural dyeing and she continues to research and develop new applications for the use of natural dyes in her own textiles and teaching. Catharine is the author of *Woven Shibori* (Interweave Press, 2005). A new, updated version of the book that focuses on natural dyes will be released in 2016.  
<http://blog.ellistextiles.com>