

Professor Mary Hark and Michael Adashie

Developing a Hand Papermaking Cottage Industry in the Greater Ashanti Region of Ghana: A convergence of craft, art, and environmental conservation

Mary Hark a practicing artist/craftsman will share the challenges and successes of the initial phase of the project with a presentation strongly supported by visual material as well as a portfolio of the handmade papers being developed.

Introduction

Mr. Michael Adashie, MFA and PhD candidate from the Department of Painting and Sculpture at Kwame Nkrumah University of Science and Technology and I are working to create a model cottage industry hand paper mill, with the intention of producing a strong, beautiful paper, unique to Ghana, with the physical qualities to make it appropriate for use by professional printmakers and other artists. The long-term intention of this project is also to support local farmers interested in using free, abundant materials to produce these papers for sale, and to assist in a larger initiative that is focused on containing the growth of an invasive plant. This project has drawn together the university art community, the Forestry Research Institute of Ghana, and local subsistence farmers. This presentation is the story of the first part of this project.

I am a practicing artist/craftsman, as well as a member of the Design Studies faculty at the University of Wisconsin-Madison. My studio work is twofold – I work as a production papermaker, designing and making small editions of high quality flax and linen papers for fine press books and unique papers commissioned for special artists projects. I also create one of a kind artworks: constructed paintings made of heavily worked paper and fabric, which I exhibit. I am a studio artist with a practice that draws heavily on textile traditions and processes. In 2006, supported by a Fulbright Senior Research Grant, I lived and worked in Kumasi, Ghana for one year with the intention of studying the vibrant and historic cloth traditions. During this year of research and studio production I studied the Adinkra cloth making tradition in the small village of Ntonso, sat with cloth vendors in open air markets, made friends with seamstresses, and moved about in a place where cloth is fully appreciated; a place where color and pattern are an integral part of life. I lived and worked in this place where making things by hand is understood and practiced to some degree by many, many families.

Kumasi, Ghana is in the center of the Greater Ashanti Region. The Ashanti culture has an historic and lively entrepreneurial arts and crafts scene. Weaving, dying, basketry, printing, painting, sewing, woodcarving, bronze casting and other activities are very much part of an active local market place. All of this activity is produced in family workshops. Having spent a year living with an Adinkra cloth-making family, in a village where virtually every family was also involved in this production, I have seen first hand how the family enterprise is a strong and elemental part of the rural economy. People here understand and value craft activity; and these items are valued for their ascetics as well as their usefulness.

Beyond these master weavers, cloth-makers, carvers and so on, the role of making in this part of the world is understood as the most economical way to get the items one needs for daily living. While money is tight, time is available. Shoemakers, key cutters, woodworkers, sign painters, tin-smiths, seamstresses, and many others provide the necessary goods and services households use everyday. This is a place where making things is deeply embedded in ordinary life.

During 2006 I was also invited by the Department of Painting and Sculpture at Kwame Nkrumah University of Science and Technology in Kumasi to conduct a workshop in hand papermaking for fine arts students. Teaming up with Mr. Michael Adashie, lecturer in printmaking, and forty, third-year undergraduate art students we set out to make a paper from indigenous material that would be strong, beautiful and have an aesthetic particular to this area. For six weeks, with just a few basic tools that were shared among all the students, we focused on botanicals found on or near the K.N.U.S.T. campus. We wanted to develop a handmade paper with the integrity appropriate for use by professional printmakers, bookbinders, sculptors and others, and that also had an attitude that was unique to this place.

A Few Words About Handmade Paper

Paper might be most commonly thought of as substrata material, understood as a platform for drawing, printing or other content, a modest material, easily taken for granted. The paper historian Dard Hunter describes true paper as "thin sheets made from fiber that has been macerated until each of the individual filaments become a separate unit; the fibers are then intermixed with water, and by the use of a sieve-like screen, are lifted from the water in the form of a thin stratum, the water draining through the small openings of the screen leaves a sheet of matted fiber on the screens surface. This thin layer of intertwined fiber is paper."

Handmade paper is made in individual sheets, one at a time, using historic processes that have changed very little in hundreds of years. Briefly, this process involves making the pulp, forming a sheet, then pressing and drying. Before becoming pulp, the raw fiber is softened by cooking and/or retting. Then the fiber is beaten while it is suspended in water, breaking down the fibers and becoming paper pulp. This beaten fiber is then put into a vat containing roughly 90% water and 10% fiber. At this stage a mould – which is essentially a frame covered with a mesh – is used to scoop fiber from the solution in the vat, disperse it evenly, and allow the water to drain. Finally the pulp is pressed onto a felt, and the process is repeated until a stack of felts is ready to be pressed. The papers are pressed, and dried. The process is slightly different following the Asian traditions.

While this process of making a sheet of paper is relatively simple, making high quality paper requires a thorough understanding of the raw materials, of the processes and physical control of tools. It requires practice and discipline to do well, and a vision, an aesthetic, a clear idea of the physical properties that the finished product will carry. A handmade paper can be tough, bark-like, tactile, and aggressive. It can be smooth as ice with a hard, dense, surface. It can appear to be fragile and airy. It can be soft, pithy, and absorbent. Do you want your paper to carry ink, to be able to fold? Do you need transparent qualities? How will the sheet sound as you page through a book? The qualities possible with handmade paper are limitless. The fiber one chooses is the major component in the attitude the final

sheet of paper will carry. Color, elasticity, and tensile strength can all be products of the raw fiber choice. Other qualities such as tactile qualities, weight, density, and absorbency can be affected by processing choices. Making informed decisions and maintaining high standards of craftsmanship are critical.

Making Paper in Ghana

In our initial papermaking workshop in Kumasi, the participants teamed up into twenty pairs. Paper is made from bast fiber, which may be the inner bark of a plant, or leaf or grass fiber. We looked for plants that were abundantly in and around the KNUST campus, and began the processing: cooking, rinsing, beating, pulling sheets, pressing and drying. We kept records, paying attention to strength, smoothness, color and processing particulars. Collecting and documenting the fibers, cooking to clean and break down the fibers, rinsing and beating the cooked fiber by hand in the large mortar and pestles used to prepare the traditional fufu or palm oil. We processed plantain, avocado, cashew, kapok, maize, and many others. When we found a beautiful color, we tried to mix it with a fiber that might have less-attitude but great strength; and so we worked for six weeks. By the end of the workshop we had produced papers with a great many compelling qualities, but it was also clear much more work was necessary to truly develop a high quality product. It had been a very labor intensive experience, but we had generated some very serious interest in the craft of papermaking and the work suggested that there was great potential to develop a high quality local product.

In Ghana high quality paper is just not available. Artists have to order paper at great expense from Europe. Even ordinary printer paper is not the ubiquitous, throwaway item that I am used to in Madison, Wisconsin. Many of the fine art students, as well as the faculty who worked with us on this first attempt, had never worked with a high quality paper for printmaking, drawing, or other purposes. Most had not understood the great range of possible physical properties a handmade paper could yield. As we finished this first six week workshop, Michael Adashie and I realized that not only was there a great quantity of appropriate raw material available, but tremendous serious interest. If we developed a product, the largest and most important Department of Fine Art in Ghana would clearly be interested in purchasing it as substrata. Beyond that, the students had had a taste of the possibilities for using pulp as an art medium in and of itself.

When I came to Ghana in 2006, I brought many studio supplies, not knowing for sure what I might need over the course of a year. One of the boxes I shipped from the States was full of Kozo fiber. Kozo is a traditional Japanese or Asian papermaking fiber; a bast fiber from the inner bark of a plant related to the common Mulberry bush. Papermakers use the inner bark of a two or three year old plant. I order this inner bark from the Philippines or Japan, partially processed –stripped from the stalk and slightly cleaned - and that is what I had with me. The Kozo fibers are long and strong. A very thin sheet of Kozo, what we often call rice paper, has the air of fragility but tremendous strength, and can have an elegant, smooth translucency. Adding a bit of Kozo to other botanicals exponentially improves the strength of a sheet of paper without adding bulk. We processed some of this Kozo, and added it to some of the local plants that yielded interesting textures or color, but did not on their own have strength - and the results were beautiful. Michael Adashie and I took the Asian Kozo to the Forestry Department on campus and asked them if they knew of any botanical in Ghana that was similar.

To our astonishment, Kozo was growing in Ghana. Growing out of control! *Broussonetia Papyrifera* or Paper Mulberry, a woody perennial native to Japan and Taiwan, thrives well in a wide range of habitats including humid tropics, sub-tropics, and temperate environments. In 1969, the Forestry Research Institute of Ghana (FORIG) brought fourteen pulp-mulberry plants into the country and planted them in a forest preserve with the intention of evaluating their potential for paper production. Before this plan could be implemented, those directing it fell from political favor. For several years the plants languished in the forest preserve under the thick forest canopy. In the mid seventies a severe drought in Ghana led to forest fires that raised these dense jungle covering. With access to the sun, the Pulp Mulberry began to thrive.

In Ghana, both male and female Mulberry plants were introduced, increasing the invasive potential exponentially. The tree fruits twice a year and the seeds are dispersed over long distances by birds and bats. While the seeds rarely germinate in dense canopy forest, in farmlands, roadsides, and gaps in the canopy regeneration is prolific. The rapid spread of Pulp Mulberry in Ghana has also been facilitated by the high rate of deforestation in recent times. In addition, Pulp Mulberry has the ability to re-sprout from roots. Trees form a dense mat of roots, which shoot up randomly at short intervals when growing conditions are right. Paper Mulberry competitively prevents the regeneration of most indigenous species.

These plants have thrived, dominating the forest preserve and aggressively moving into plots of land that are used by farmers growing food for their families as well as to sell at local markets. Talking to several of the men who at the beginning of their careers had hoped to facilitate a paper industry, we learned that forestry and conservation officials had been working now to identify ways to manage and control this plant whose alarming growth is dominating the areas in and around two forest preserves, and whose original use had never been tapped.

Pulp-mulberry has become the most serious, invasive, non-indigenous woody plant in the closed forest zone of Ghana is the very plant that has been used for hundreds of years in Asia to produce a lovely, fine-textured, soft, naturally warm colored, lightweight paper. It is a long Mulberry has a long fiber and thus produces a strong paper hat has traditionally been the choice of printmakers; used by sumi painters, for lithography and chine colle. It stays strong when it is wet which makes it appropriate for water or oil based block printing. This invasive weed is one of the very plants that have yielded some of the most beautiful papers in history.

For the past two years Michael Adashie and I, along with a group of dedicated art and biology students have been experimenting with the Ghanaian Kozo, the invasive Pulp Mulberry plant, and other botanicals, working towards the development of a viable paper. Using the university site as our pilot studio, we have been focused on setting up a model cottage industry paper mill. Our goal is the introduction of a hand papermaking cottage industry that supports the control of this serious nuisance plant, provides beautiful and strong papers for the fine art community and beyond, and generates additional income for local farmers.

We have worked to enlist the expertise and professional support of members of the university art and forestry conservation communities who have a vested interest in a successful outcome. With support from these interested communities and we hope for a greater chance of long-term success. With input from the Forestry Institute of

Ghana (FORIG) we have identified local farmers who have an interest in participating. FORIG has helped to identify areas to harvest the Kozo, and offered support in harvesting, storing, and transporting this bast fiber. Members of the Art Education Faculty at KNUST, who see the production of handmade paper as a great resource for teachers throughout the country, coordinated a colloquium this past August, inviting scholars from a variety of disciplines to learn about our efforts and advise us on such critical issues as water conservation. They have invited us to work with their faculty to develop curriculum around the paper mill.

As we focus on the development of our tools and processes, and fine-tune the quality of the paper, we are also cognoscente of the importance of having an understanding the marketplace that we want to access. There is a specific and pressing need for high quality paper within the art community. Art students and art professionals have enthusiastically used the papers that we have produced in our work to-date. This is a market we are confident of, that has expressed significant interest in our product, and that has used the first papers produced. The art department at the university has 40 faculty and several hundred students; it is the largest and most important art department in the country. The initial product development will be focused on this market.

Beyond the fine art market, we believe that if we train family farmers to make paper, they will develop products appropriate to the needs of the community and of the local marketplace. In rural Kumasi, near the Afram Headwaters Forest preserve, family farm operations, and trading are the main income-generating activities. Vegetable, horticulture and staple crops such as plantain, maize, and cassava dominate commercial crop production. This activity generates an average yearly household income of \$400.00. The devastating impact of the invasive Pulp Mulberry has created serious challenges for these family farmers. The need for income generating activity is great.

In addition, Kumasi, Ghana is a growing tourist destination because of the lively arts and crafts activity that I have described. It is my strong belief the beautiful papers developed in these family enterprises will produce items that will be marketed to the tourist trade. Other traditional objects have been modified to be successfully sold in this way.

Finally, there is an export market. While at this time our the focus here is to develop a strong model, we hope that once the model is firmly established and products have been developed that reflect local culture, a larger market can be considered. The precedent is already in place for this with Ashanti entrepreneur marketing via the Internet. A few examples are: woven Kente strips that are produced with colors and symbols specific to American universities that are ordered and worn by graduating college students across the US, baskets produced for sale in Europe and the US, Adinkra cloth produced with symbols appropriate for weddings and other celebrations outside West Africa. These local, traditional artists have in place systems we can borrow and learn from to tap a larger market.

This past summer with support from the University Wisconsin-Madison, we were able to purchase and import a Hollander Beater. This machine, originally used as a tester for industrial papermaking in Wisconsin. Michael Adashie is working with local machinists in Kumasi to develop an affordable replica of this Hollander. The machine will allow the workshop to produce larger quantities of high quality pulp. In the coming year we hope to have this affordable design ready, and with support from the

Forestry Institute set-up the first workshop in the vicinity of the Forest Preserve, at the heart of the Pulp Mulberry infestation area.

Having established keen interest, generous availability of raw materials, and a need for the final product, our current goals are gathering and producing well made and efficient tools, nurturing a culture of attention to high quality craftsmanship, and gathering support from a variety of communities who will lend expertise and support long-term success by becoming stakeholders in the outcome. In addition, we are working to connect the Kumasi papermakers with papermakers in other parts of the world, in order to enjoy a conversation with artists and craftsmen who share a love of paper. Once this foundation is securely in place, attention will be focused on paper products beyond beautiful sheets, and on marketing these products in practical and respectful ways.

While papermaking is not indigenous to Ghana, the resources to develop high quality paper craft production exist. Working within a culture that understands the value in making things by hand, and within an economy that includes fine craftsmanship, supports the success of this project. Add to this the unexpected partnership with the conservation community in addressing the environmental crisis posed by the invasive Pulp Mulberry plant. The challenges include financing the start-up activities, keeping the standards of craftsmanship high while introducing this non-traditional activity, and using water efficiently. Mr. Michael Adashie, the team of Kumasi papermakers, and myself are very hopeful that within five years I can return to report on a lively paper production center in Central Ghana.