STATEMENT OF CASE: (Characteristics and Uniqueness)

Kalamkari (or work with pen). The Kalamkari artisans originating from the specific village of Srikalahasti are mainly to be found in the districts of Chitoor and Nellore.

In principle, Kalamkari is a special technique of treating cloth to render it nondiffusive to aqueous solutions without affecting its absorptivity by using fresh buffalo milk (where the naturally formed milk-fat micelles are intact). It involves unique skills in the manufacture of Kalams from pieces of coarse woollen cloth tied near the centre of bamboo splinters. The art is characterized by the controlled trickling of iron vinegar and/or alum solution down the bamboo splinter of the Kalam to trace outlines on the cloth treated with fresh buffalo milk with tannic acid, and then filling the areas within and outside the outlines by similarly trickling alum, iron vinegar, vegetal dye extracts containing some alum, fermentatively reduced vegetal indigo and mixtures thereof with the Kalam to produce exquisite illustrations on the cloth that are coloured with all colours of the rainbow and combinations thereof. It also involves dyeing the alum painted cloth in a vegetal dye bath and then bleaching the cloth in sunlight to selectively decolourise the vegetal dye in the areas where alum was not applied.

Brief History

Cotton fabrics with designs in fast colours were manufactured in India for centuries and exported to regions in the east (spice producing) and west (trading) of the sub-continent. These designs were made with the aid of a bamboo splinter on which a reservoir made of woollen-rags was fastened. A large number of people were involved in the trade that included merchants, brokers (agents/contractors) weavers, artisans, painters and dyers. They made the product according to the needs of the client and the style of their designs varied according to the markets they were sold in and the price they received. Initially all the lines were drawn freehand. When demand increased, production of identical designs was aided by forming the preliminary outlines with charcoal powder that was dusted through the perforations of stencils. Later, to cater to increased demandwith economical pricing, the black outlines and patches of alum mordant and resist were applied with carved blocks that were dipped in metallic mordant mixed in gum on cloth that was impregnated with tannic acid. The assimilation of these innovations saw the transformation of making cloth with designs from the Kalamkari technique to the easier block-printing technique. To stay competitive, many of the block-printers later switched to screen-printing.

The Coromandel was the most important production area (from *chola-mandalam* meaning realm of the Cholas) of painted cloth and its artisans knew the preferences of the spice island clients. Persians and Arabs carried out the trade between this area and the Malay islands and the area (also known as Golconda) was ruled by Muslim rulers of Persian lineage after the collapse of the Vijayanagar empire. The artisans of Golconda were scattered around in the villages and the trade was carried out mainly through the port at Masulipatam. The artisans had to contend with the oppressive revenue collectors and would readily relocate to dominions that were less oppressive. Many moved to the smaller adjacent Hindu kingdoms and one such kingdom that attracted the

cotton painters was Srikalahasti. Another upheaval occurred when the Moghuls subjugated Golconda; and the British around 1700 invited the cotton-painters from around Madarasapatam and from Golconda to settle in the Forts of Madras so that they could meet the increasing demand back home.

The invention of block-printing, screen-printing, mechanised dyeing methods and synthetic dyes in the last 150 years drove the authentic Kalamkari style to near extinction. In 1915 there were only three families in Masulipatam who could make hand painted canopies and screen cloths to order. Today artisans in this town use the kalam only to fill the areas outside the blocks and not to sketch the lines. This process is locally known as "Addakam".

Srikalahasti being a temple town, located near Tirupathi and Tirumalai, had a demand for paintings with a religious theme. A Kalamkari master-craftsman Shri J. Gurappa (alias) Neeli Gurappa was able to eke out a living by painting panels depicting stories from the great epics of Ramayana, Mahabharata and Bhagavata and the Tree of Life. In Srikalahasti, the style used to draw the figures is short and curvaceous to accommodate the depictions in the panels. The background was coloured red to enhance the contrast with the gods who were painted in blue.

At the time of India's independence, i.e., 1947 the Kalamkari tradition in its pure form (known locally as "Rathapani") passed through a bottleneck. It was reduced to three artisan families in Srikalahasti. Neeli Gurappa taught the art to his sons Shri Jonnalagadda Lakshmaiah and Jonnalagadda Ramaiah and two students Arani Kalappa and Jampala Yanadi. As the dyers and craftsmen were accorded a lowly status in the social hierarchy, these exponents abandoned the tradition. Shri Jonnalagadda Lakshmaiah became an elementary school teacher. The works of father and son are found in the Victoria Albert Museum, London. It was the late Smt Kamaladevi Chatopadyaya who coaxed Shri J. Lakshmaiah to return to his tradition and teach it to others. The All India Handicrafts Board set up a training centre at Srikalahasti in Chitoor district for this purpose. This centre has trained a large number of artisans and has led to the revival of this tradition. Presently there are 35-40 master craftsmen (artisans who are able to select a theme, conceptualise the design, sketch it and dye it as per the tradition) and approximately 100 assistants who are exponents of this tradition. All the present Kalamkari artisans can trace the lineage of their craft to this school. The Andhra Pradesh Government closed down the centre in 1998. At the forefront of the revival of the Kalamkari tradition is Shri Guruppa Chetty, Shilpaguru who was a school teacher for the want of income, and an exponent of the art to keep the tradition alive. His son Niranjan Jonnalagadda is a leading practitioner of the art and the secretary of KARUNA, the Society in Srikalahasti that represents the interests of Kalamkari artisans.

The future of Kalamkari:

In order to eke out a living it is essential that the craftsmen shift from painting the low volume wall hangings to making high volume products like furnishings and apparel. For this purpose they have to be organised differently. They have to be linked to marketing outlets and design schools; the fastness of the applied dyes has to be improved and reproducibility of patterns has to be achieved.

The reproducibility can be attained with the use of perforated stencils; the fastness can be improved by linking up with current initiatives being executed to revitalize the use of natural dyes.

In this regard an India Canada Environment Facility (ICEF) project has the Kalamkari Research and Training Centre (KRTC) in Srikalahasti as one of its partners for imparting technological innovations to the artisans.

Finally, the artisans have to receive a continuous supply of contemporary designs that can be marketed. In this regard the KRTC is being linked to the market through the activities of the other ICEF project partners, which is a three-year pilot scale model demonstration activity.

THE KALAMKARI TOOLS, MORDANTS, DYES AND PROCESS Tools

The only tool used by the Kalamkari artisan is a kalam that is made from 4-6 inches long bamboo splinters sharpened to a tip of desired thickness (old bamboo culms are preferred). At a distance of 1-1.5 inches from the tip is the reservoir made from small rags of coarse woven wool that are wound around the splinter in an ovoid manner (2" long and 1.5" diameter) and tied in place by wrapping it with cotton thread. This reservoir absorbs and retains the dye solution. (Cotton cloth cannot be used, as it has no resilience and due to its higher adsorptive capacity would release larger amounts of dye when squeezed). The skilled artisan regulates the flow of the dye down the splinter by controlling the squeezing pressure. In this manner he can vary the thickness of the lines he draws while he pulls the nib over the outline. The kalams with thicker nibs have a slit from the tip to the dye reservoir that is filled with a few strands of hair or thread to facilitate the flow of the black dye. The reservoir of the kalam is never allowed to dry. It is washed if it has to be dried and stored.

In the past when the cloth was coarse the artisan along with his assistant would beat the cloth with a wooden mallet to smoothen the surface. With the availability of mill cloth this practice has fallen into disuse.

The outlines are drawn on the non-diffusive cloth with a charred tamarind twig pencil. To prepare this pencil, dried twigs that have fallen around the tree are gathered and broken to a length of 3-7 inches. To char the twigs a shallow circular pit is scooped out in the dry soil and a heap of sand is kept besides the pit. The dry twigs are piled up to a height of 2 inches (< 3") above the ground level. Some newspaper is also placed among the twigs to facilitate their ignition. When a light breeze blows the scraps of paper are set aflame and the twigs catch fire. Sand is thrown over the ash coloured twigs in those sections of the pit where the yellow flames die down. The entire heap of charred material is covered with sand and the twigs are cooled in the pit for 3-4 hours. This slow cooling makes the pencils tough. The ash coloured twigs are then uncarthed and rolled between the fingers to remove the greyish bark and reveal the black pencils. The pencils so prepared can be stored until further use (the bark is not removed before charring; else the twigs will turn to ash).

<u>Mordants</u>

Tannic acid and alum are used as the mordants.

The alum solution is prepared by dissolving 50 g of potash alum in 1 L well water. The solution can be stored for 6 months in glass containers.

The tannic acid is extracted from immature T. chebula (myrobalan) fruit in fresh, unheated, high fat buffalo milk. Powdered immature T. chebula fruit (150 g) is made into a paste with buffalo milk. This paste is then mixed in 2 L of buffalo milk and the suspension kept for 1 hr to extract the tannic acid.

<u>Dyes</u>

Iron vinegar (ferrous acetate) is used to obtain black, powdered manjistha (stems and/or roots) together with powdered root bark of V. maderaspatana are used to obtain the maroon. Yellow dye is prepared from leaf galls of T. chebula, or mango bark. Blue is obtained by oxidising vegetal indigo that is reduced in a fermentation vat. Over dyeing yellow with blue yields green and application of diluted iron vinegar results in grey. Cutch extracts are used for browns and lotus leaf extracts for elephant grey.

The artisans prepare the iron vinegar (kasimi) from scrap iron and jaggery solution in earthenware pots. Scrap iron $(\frac{1}{2} \text{ kg})$ is heated till it is red hot in a charcoal fire. This will burn off adhering organic material (oils and grease). The glowing iron is removed from the fire and quenched by sprinkling water over it. This activates the surface. It is then cooled. 250-300 g of palm jaggery and 200-250 g of sugarcane jaggery are powdered together and dissolved in a vessel (aluminium, /earthenware, / plastic /, SS) containing approximately 10 L well water. The jaggery solution is poured into a 15 L earthenware pot and the cooled activated scrap iron is submerged in it. The mouth of the vessel is tied with a piece of cotton fabric and the pot is left undisturbed in a dark and cool corner for 10-12 days. If the pot gets hot during the incubation, the iron vinegar will be of poor quality. After 10-12 days the pot is uncovered and the froth is observed. Formation of froth up to the mouth indicates a successful fermentation. The iron vinegar is strained through a cotton cloth into another pot or bucket made of either earthenware, plastic or SS (brass and copper have to be avoided). The filtered iron vinegar is best stored in glass containers and will keep for up to a year in a cool place. The oxygen that diffuses through the walls of plastic containers will slowly oxidise the ferrous to an insoluble reddish brown ferric precipitate. The scrap iron left behind in the pot can be reused. The iron vinegar is poured into cups when required. The contents of the cups are never poured back into the storage vessel.

The yellow dye solution is prepared by extracting the dye from finely powdered T. chebula leaf galls. (The artisans call them myrobalan flowers). The galls are powdered in stone or SS 316 grinders and sieved. 1/2 kg of gall powder is boiled in 5 L of well water in a tinned copper vessel for 45 min. Water is added to compensate for evaporative losses. The extract is left undisturbed to cool (2-3 hr). The supernatant is decanted and the sediment is discarded. It is poured into glass vessels or aged earthenware pots (non-absorptive) and matured for a week, after which it can be used. The yellow gall extract can be stored for 6 months in a cool place. A thick scum can form on the surface (fungus can grow on the surface exposed to air). This is to be discarded and the underlying liquid used. This extract yields a darker yellow. The yellow gall extract is poured into cups when required and potash alum (1.5% w/v) is dissolved in it to prepare the working dye solution. The contents of the cups are never poured back into the storage vessel. On storage a scum will form on the working solution that has to be discarded and the underlying liquid will give a darker shade. The working solution can also turn green and this solution will give a greenish hue on application.

The leuco indigo is prepared by adding 1/2 kg of powdered vegetal indigo (30-40% purity) to the gruel in a 15L earthenware pot. The Cassia tora seeds are gelatinised by boiling 2 kg seeds in 3-4 L of water for 30-45 min in an aluminium-cooking vessel. Salty alkaline water (SAW) is prepared by slowly trickling 10 L water through 5 kg shell lime + 8 kg crude washing soda (saji khar - an efflorescence scraped from river banks or fields) contained in an inverted round mud pot, the mouth of which is covered with cloth and the bottom of which is broken [the curved broken pieces are placed within (on the neck) the inverted bottomless pot so as to bear the weight of the shell lime + saji khar and provide a channel for the filtrate]. Powdered indigo blue is made into a paste with SAW (in a plastic vessel /mud pot). Additional SAW is added to the paste to make a properly dispersed fluid suspension of indigo blue. This indigo suspension is poured into an empty earthenware pot/jar (the vat) that is buried with its mouth protruding from an earth-covered pit filled with sheep dung. The gelatinised Cassia tora seeds are added to the pot and the contents are stirred twice daily with a wooden stick. When there is a perceptible change in smell, slaked lime suspension is added till the original smell returns. In 7-10 summer days (or 15 wintry days) the scum formed will be greenish thereby indicating that the contents are ready for use.

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The brown dye is prepared by boiling 150 g catechu powder in 3 L water for 10-15 min and aging the cooled solution for a week. A working solution is prepared by adding alum at the time of use (one teaspoon alum/L can be used).