

# **Chapter IV**

**THE TECHNIQUE OF AND PROCESS IN PRODUCTION  
OF  
THE MAJOR TRADITIONAL HANDICRAFT CRAFT:  
- AN OVERVIEW**

## **4.0 INTRODUCTION**

The study of technology is an essential key to the understanding of a people culture. It cannot be denied that in man's struggle for survival, resources and technique are his greatest assets (Harskovits, 1911).

The study of the technology of the handicraft has not been made in a systematic manner (Pal, 1969). A good deal of work has however, been done in respect of the artistic appreciation, socio-religious significance and aesthetic appraisal of ancient art and contemporary art, architecture, sculpture, painting etc, but so far as the technology of crafts is concerned, only few casual references from ancient texts or some result of stray investigation of the technology of few excavated and explored artifacts have been recorded without fruitful analysis. As a result, we have long been deprived of obtaining a true picture of the technology of a good number of traditional crafts with special reference to their evolution, development or ups and downs in different epochs of history (Biswas, 2004). Nevertheless, if we carefully examine the materials at our disposal, there are some possibilities of tracing out the sequence of the technology of at least some of the important age old crafts flourishing in different periods starting from the earliest times down to the present day.

In this chapter an attempt have been made to study the technology of some of the most important traditional handicraft of the Darjeeling hill area, such as: Thanka Painting, Kalimpong arts, Woolen carpet, Yatha, Kalimpong bags, Bamboo craft, Woodcraft, Copper-Brass crafts, Black smithy and Silver crafts. These crafts still play an important role in the life and the people of the study area. It is true that many of our craftsmen have given up their traditional occupation and have taken to petty labour, service and even the profession like teaching, shop keeper, medico, etc., however still there are some hundreds of craftsmen who patiently and obstructively play the trade of their fore father, and produce master pieces of crafts specimen with aid of simple age old tools, technique and equipment.

## **4.1 TECHNIQUE OF THANKA PAINTING**

Thanka painting is a distinct art and it is not surprising, that such old Thanka paintings veritably forms the heritage of the many monasteries and are invaluable inheritance. The history of the Thanka painting dates back to ancient time. In fact, the Thanka painting bears their creation to the 12<sup>th</sup> century by some Nepalese painter. The

early Thangka were said to be painted by Nepalese painter in Katmandu, who carried the art to Tibet, where the Buddhism was then just on the verge of propagation (Gujral, 1997). It was the time when the monasteries were built all over. It was then the demand for the painter and artist rose according to the colour code of Tibetan Buddhism. This philosophy of the art and painting has an important role in surviving and spreading the art in the study area (Tamang, 2003).

A remarkable aspect of the Thangka painting is that the nature of colouring follows a strict colour code and that the shades cannot be used at one's wish and fancy. Colours used in past were natural such as that obtained from stone, clay, mud and other materials. Moreover with the growth of demand it is apparent through survey that the colour code against which it is considered sacrilege to paint a Thangka is slowly dying away due to marketing mechanism and variances in consumers' preference. However, the art of Thangka painting has with stood the test of time and evaded death owing to its flexibility to adapt to change and that in itself has given rise to a completely new form of art readily acceptable to the present day taste (Pal, 1969). This form of traditional art is still practiced with a slight modification of technique in the Darjeeling hill areas.

A consolidated account of the technique of Thangka painting followed by most of the present day Thangka painters is presented below:

The first step in the Thangka painting is stretching of the cotton cloth by string (cotton) from all side in a rectangle frame. After the stretching work, artist use zinc oxide along with the paste of distemper and resin with a brush. With the subsequent use of the paste the artisan ascertain the required level and this is left for drying. When the paste dries, rough and groves formed on the surfaces are smoothening by rubbing the shells. This provides a firm base on a piece of cloth for painting.

With the completion of this stage, the expert artist put an outline of image through a draft of design on the surface with a use of light pencil mark. Then the paintings are done following traditional colour schemes, shades and guidelines with the interplay of enamel paint of different colour and shades. While they use various size of painting brush and finally it is customary that some gold dust is put to the painting with synthetic adhesive (fevicol).

## TECHNIQUE OF THANKA PAINTING



**PLATE X** Artisans busy in Painting Thanka



**PLATE XI** An artist performing Thanka painting in traditional Tibetan motif painting is done in cotton cloth fasten in temporary wooden frames using cotton thread.



**PLATE XII** Thanka Painting with a different theme in Kalimpong Town

During the painting a constant interval is required for the colours to dry for another stroke of shades. As a result the artisans usually take up a minimum of three tasks at a time and work interchanging on different paintings. Thangka painting is an intricate art and completion of a piece of painting requires long hours of operation and scores of days. After the work is complete, paintings are mounted in traditional style for ritualistic and decorative wall hanging. Plate X, XI and XII exhibits artist performing the Thangka painting in 10<sup>th</sup> mile Kalimpong

## **4.2 TECHNIQUE OF PRODUCTION IN KALIMPONG ARTS**

The technique in the production of different type of Kalimpong art as follows:

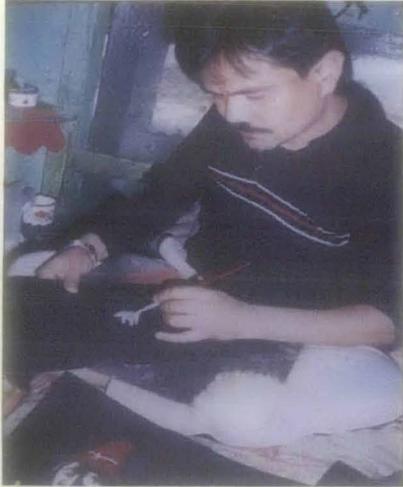
### **4.2.1 Technique of production of Scroll painting**

These arts represent the painting and art of contemporary folk culture depicting the scenes, portraits and dragon picture in cloth or in the canvas (Manjusha, 1992). The artisan uses the black cotton cloth for this art and the philosophy is that the colours can be better represented in the black piece and also the background need not be painted. Various size of the paintings are produce by the artisans. The technique of production is simple and traditional. The expert artist does not even care to draw outline for initial design with arrowroot powder. The artisans draw the different scenes and portrait freely with his hand with the manipulation of different strokes of the brushes and colours.

For smooth and speedy operation the artist, usually keep the draft of outline in tracing paper. These outlines are pierced with the pinholes by pins or needle and it is through these holes the outline of image are laid by sprinkling the arrowroot powder. Arrowroot powder is used because it does not give any stain. Beside, artisans in advance make the loop for putting the scroll stick and the margin is stitch before the painting.

Then various steps followed in production in the sequence are the spreading of cloth in the table, marking of outline, colouring and painting different strokes, drying, subsequent manipulation and drying. The basic idea for the nomenclature scroll painting is that the painting on the piece of cloth is easily scrolled. Some stage of canvas painting is shown in Plate XIII and XIV.

## Different strokes in Kalimpong Arts



**PLATE XIII** Artist marking a initial stroke in black cotton cloth



**PLATE XIV** Spreading out painting for drying after each stroke in Kalimpong arts



**PLATE XV** Portraits in Canvas



**PLATE XVI** Colourful Silk thread



**PLATE XVII** A women- performing Needlework in Kalimpong town

#### **4.2.2 Technique of production of Pasting Art**

This is an improvisation over the scroll painting on which scenes are embedded with the pasting of different figures representing contemporary folklore of the of the Himalaya origin. These figures are made out of printed woolen and cotton cloth. The various figures are first carved out by drawing outline of the image on paper board and cut with blade or scissor accordingly. Padding is followed on with the use of cotton with the aid of adhesive. Well, after the padding is completed the colourful cloths to pasted give to impression human and cultural feature, in between the artisans also use colourful sketch pen to sharpen the features in the art. It is thus artisans' gives perfection to the art. These different models of human and cultural features are further pasted to the scenes associating the themes of life and culture of the hill flock and subsequently framed for the market.

#### **4.2.3 Technique of production of Canvas painting**

The technique in canvas painting is similar to that of simple scroll painting. Only difference to that of scroll painting is in the use of canvas cloth and use of synthetic colour. Basically the artisans use fabric colour and oil paints as it is more durable. The preliminary work is followed by sizing of canvas of painting and drafting of the image in the tracing paper. These images are transfer to the canvas and artisans put on various colour scheme. As in other painting artisans takes a number of painting simultaneously for each strokes of the paint to dry and thus spreading around in the workshop to ease the process. Thus the various portrait of representing, the different ethnic groups are made in the canvas as shown in Plate XV. Canvas painting are not necessarily mounted in the frame which enable it to take to distance place.

#### **4.2.4 Technique of production of Needlework**

This is form of art where artisan uses black background and colourful thread for creating art. In needle work the various techniques involved is as follows: firstly the selection of the figures is done. Then the outlines are drawn with the use of the tracing paper. After this the cloth are fitted to a ring frame which holds the cloth in position. Then artist with his experience and knowledge uses a single staple of silk thread to work out the figure with the needle. Different colours shades and tints are produced by blending of simple colours which lends the output a pleasant, traditional and delicate looks. The artisan mainly uses various human figures as theme of the work. Various

colourful thread used by artisans is shown in Plate XVI and Plate XVII shows a women performing needle work in Kalimpong town.

#### **4.3. TECHNIQUE OF CARPET WEAVING**

The important aspect of work in carpet weaving is to starts his works by spreading of tan (warp) on the loom keeping in mind the size of the carpet to be woven and framing it on the loom. Stretching of the warp can be done for two to three carpets at a time for the carpet depending on the size, one by one all the carpet are woven. While weaving one carpet the warp for remaining carpet is rolled around the upper beam (Census of India, 1981). The whole process of preparatory work of carpet weaving can broadly be divided into following heads.

- **Process of winding**

Winding is the operation of transferring yarn from the hanks to bobbins form the warps. The operation is accomplished with the help of a spinning-wheel (Charkha) and a revolving frame (creel). The hank is smeared round the creel and the winder draws a thread from the smeared hank attached to the bobbin. The bobbin is then placed on the spindle, which is given revolving motion of the wheel. Thus the yarn is passed from the hanks to the bobbins.

- **Process of warping**

Two types of warping are generally practiced now-a -days—the street warping and drum-warping, the latter being the advanced technique. The requirements for street warping are four thick strong posts, some uniformly thick sticks of about 3 feet length and some rope. Two posts are fixed crossing each other. At the top end of these horizontally tied a stick and to this stick is attached a piece of rope which is tied to a nail fixed on the ground. The other two posts are similarly placed at some distance away, the distance being equal to the length of the warp. One end of the warp thread is tied to the horizontal bar placed over the crossed post, and the warper then moves towards the other pair of crossed posts with the creel in the right hand and the leasing frame in the left. At suitable intervals between these posts are placed some pairs of lease rods to enable the warp threads being maintained in their respective positions. As the warper reaches the lease rods, he raises the lease-frame held in his left hand which result in a division of the warp thread, putting an equal number of threads, enough for

the width of the cloth to be woven, is secured. The warp is then wound in the shape of a ball without affecting the leases that are maintained by inserting thicker threads in place of the bamboo lease rod, these being retained only at the end of the warp.

- **Process of Denting**

Denting is the process of drawing warp-ends through the dents of the reed. For this two persons are required: one for picking up the threads in tows in succession, and the other for drawing them through the reed with the help of a hook. The process is repeated till the warp ends pass through the reed.

- **Process of Beaming**

It consists in winding of warps threads on warper's beam. The warp is stretched to full length, and the ends of the threads nearer the reed are tied to the beam and the beam is then wound. The other end of the warp is held tight by tying it to a sufficiently heavy piece of stone or wood or it is tied to some pillar. As the beam is wound, the reed is moved forward to make more of warp available for further winding. Thick paper strips or thin bamboo strips are put in between the layers to prevent the layers of threads from stopping at the extreme ends of the beams.

- **Heald -knitting**

The purpose of this process is to keep the warp threads parallel to one another and divide them into sheds while weaving is done. The healds are knitted in halves. The warp threads are drawn through the eyes of strings of the heald with the help if a needle or a wire hook specially made for the purpose. The knitting of the heald is done in halves, and the order of the draught commencing on the left hand is 1-3, 2-4 and so on, i.e., leaving one eye of the strip in first process of knitting one half of the heald. The remaining eyes of strips are used when the knitting of the other half is done. When all the threads of the warp are drawn in, they are tied with the reed. The care to be taken in heald-knitting is to see that no more than one threads of the warp should pass through the heald.

- **Final Check-up**

Before starting weaving, the weaver has to ensure if the parts and accessories of the looms are in proper order and placed in their appropriate position. Warper's beam or back-rest is fixed at the other end of the loom. The reed and heald are drawn nearer to

the weaver's beam, the reed is placed in the groove of sley, and the heald is attached to the lever of the loom by rope. The lower portion of the heald is connected to the treadle by rope. It is checked if the warp's threads are properly fixed in the groove of the warper beam. The picking strings are properly adjusted so that the shuttle has free, unrestricted movement during weaving. The pirn containing weft-yarn is placed in the shuttle and one end of it is drawn through the eye of the shuttle. The weavers also check up if the balls of warp are properly hung and there is enough thread for weaving.

- **Process of Weaving**

After the warp has been spread on the loom and all the instruments used ready, weaving begins. Three primary motions usually govern the art of weaving, viz, the shedding motion, the picking motion and the beating motion. The shedding motion consists in depressing the treadle by one foot which results in making an opening in the warp threads. The picking motion consists in propelling the shuttle by giving an oblong pull to the handle. This results in a push to the shuttle in the shuttle-box and lets the shuttle run across the opening to the other side. The beating motion consists of beating up the weft threads by drawing the sley forward.

The weaver either gives motion to the loom through the treadles by his feet or by his hand by working the treadles the weavers' raises or lowers the threads of the warp. The heddles, the treadles, and the threads of the warp are all inter-connected and each alternative motion for raising or depression the warp threads forms the shed. There is shuttle boxes at the ends, and through the shed the shuttle is pushed from end to end across the sley by pickers attached to a string arrangement pulled with right hand from side to side, while beating is done by putting the sley with the left hand. The process is continued, and as the weft-thread passes from side to side, now over one set of warp threads and under another, and then under the first set of threads and over to the other set, the network that forms the fabric is produced (census of India, 1981).

The actual carpet weaving work is taken up after completing preparatory work that includes coil making of cotton and wool yarn and stretching of warp on loom. The preliminary work takes about one to two days depending on the size of loom or the size of carpet. Generally, women and children assist the weavers in opening of yarn and coiling while stretching of warp (Tan) on the loom is done by the weavers themselves according to the size of the carpet to be woven. Warping is done with cotton thread, in

the initial stage of weaving a narrow band of about one inch is woven in with thinner cotton weft to secure knots at the end of the carpet. This band initiates the woolen weft to begin with for weaving. The method of weaving consists of weaving a row with woolen yarn by giving Knotting (Gatho) followed by passing a row by pulling out and in the warp of the loom. Thicker woolen yarn is used to accelerate the process of weaving. Weavers generally use Persian knot which is tied with a strand of yarn around two adjacent warp threads leaving some of the thread free at either side for the lateral selvages (census of India, 1981). The method of knotting in Carpet weaving is shown in fig. 4.1

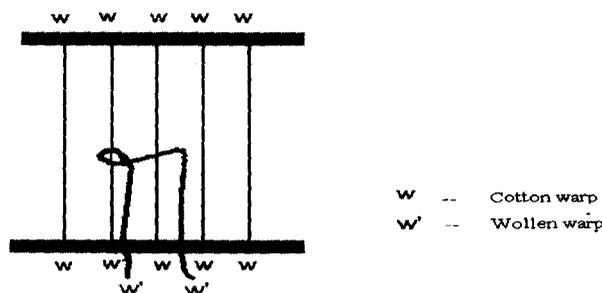


Figure 4.1 Method of knotting in carpet weaving

The design map is hanged on the wall with peg in the front of the weaver. The shade to be given to the carpet is indicated in the left side corner of the design map while the colour combination is indicated in index of the design map. The weaver uses colourful woolen yarn in weaving very carefully avoiding the incidence of overlapping of shades. The length and breadth of carpet and the number of knots to given in per square inch and quality of woolen yarn are main criterion for determination of the quality of the carpet. If the number of knot is higher and the quality of woolen yarn is better, the quality of the carpet will also be better. It is always better to start weaving from southwest corner. However, it can also be initiated from the centre or south east corner. Weaver has to hold woolen yarn in left hand and knife in right hand. The Lachhi (coil of woolen yarn and cotton yarn) are hanged from the ceiling of house with peg in order to remove the strain from the hand. Only an end of the coil is left hanging in front of the weaver for the use while weaving. The weaver draws yarns from the coil according to his convenience when needed. After giving knot he has to cut the woolen yarn with knife efficiently and quickly without committing tukra (piece/waste piece) and at the same time he has to take care of his fingers of the left hand so that they are

not injured. Irrespective of all precaution during the process of weaving particularly the new entrants has to face the problem of scratches on fingers of left hand.

The process is repeated during the course of weaving. The sequence of using woolen weft, thinner cotton weft and then thicker weft remains the same till the whole carpet is woven except both the edge (Pheri) which is woven with thinner cotton weft. After weaving a few rows, beating with metal comb (Panja) is also repeated frequently so those knots are fixed properly. As the weaving work progresses the weaver performs beating of weft followed by clipping at his level and warping the carpet in roller (lower beam). The final clipping is however, done in the work shed of the weaver. The weaver initiate the design by using the same colour combination of woolen yarns as depicted in the carpet design map at the time of the weaving. The carpet design map is generally varies from small piece to one fourth the size of carpet to be woven. The craftsman completes the weaving process of the carpet on the basis of design. The expansion of the design into full size in actual weaving needs a high standard of skill, proper colour combination makes the carpet makes attractive and fascinating. Weaving a band of about one inch with cotton weft closes the weaving process.

- **Final Processes**

After the weaving is done, final clipping is done with scissor and embossing the design follows the process. A special skill is required to make a perfect embossing; mastery over the embossing fetches a better market value. Carpets are valued in terms of knot, design, wool quality and embossing skill. To make the carpet marketable the other important processes are discussed here under:

- **Clipping**

Under the process unwanted woolen yarn are removed from the surface with the help of scissor. (if necessary Sujja is also used for adjusting threads spreading over the surface of the carpet) the process is performed very carefully and minutely. Clipping is locally known as chatnu.

- **Brushing**

Brushing is done for making the carpet dust free. Brush is used for removing woolen fiber.

- **Washing and Drying**

Farwa (wooden Spade) is used for washing. Woolen carpets are washed with caustic soda, bleaching powder, acetic acid, soap and water. After washing, it is left for drying in the sun. Moreover, the artisans facing the water problems in the hill normally sell after brushing which lowers the margin of profit.

- **Embossing**

Embossing is a additional design which is done on the surface of the carpet design. In the hill unlike the carpet of Banaras all the carpet produced are embossed. It gives worth and makes them more attractive and good looking. Scissor (Kainchi) is the main tool used in embossing.

- **Finishing**

Finishing is the last stage of manufacturing process of carpet. At this stage carpet is complete in all respect. Along the edge two to three cotton warp tied together to make fringe knot (ghumka badnu / pheri casnu) so that the knots of the carpet are perfect and safe. Thereafter it is finally ready for sale.

#### 4.4 TECHNIQUE OF YATHA WEAVING

Yatha weaving is done on loin loom or Back strap loom. In this loom the warp of manageable length and breadth is fastened at one end generally to a wall of a house, while the other is tied to the waist of the weaver with a cotton or leather belt. This loom has no frame or superstructure. It generally consists of two fixed post, two ropes, six wooden or bamboo bar and a belt. No reed is used, and shed is affected by half-heald process operated by hand. The weft yarn is inserted in the shed by means of one bamboo tube, and a wooden string is used for beating up of the weft.

The technique of weaving Yatha is quite simple it is different from those prevalent in other parts of India (Census of India, 1981). The technique of weaving can be broadly divided into three parts, such as spinning of Yarn, Setting of loam and weaving. These parts are explained separately as under:

- **Spinning of yarn**

In olden days the spinning of woolen yarn was a vital part of the weaving. But since the mill yarns became readily available in the market at a cheaper rate, people

almost have given up spinning yarn. Beside due to the easy availability of coloured yarn in the market, the dyeing of yarn is not so common at present.

- **Setting the loom**

To set up the warp of this type of loom, first a bar of bamboo or wood nearly 80cm long and 30cm thick diameter, which serves the function of the warp beam to be replaced by the proper warp beam after, the warping is completed, is firmly set upright on the ground. A similar bar used in place of proper cloth beam is set up in same manner at a distance of 1.5 meter or little more than the half of the require cloth to be woven. In between these two bar, the head stick and an extra warp beam of the same length as that of the bars are fixed upright on the ground in the same line. The lease rod which is a bamboo tube 1 meter long and 3cm in diameter is used at the time of setting the loom as a jacket of heald stick so that spiral loops formed by the twine could be made loose. However, the bamboo tube jacket of the heddle is removed and used as a lease rod by inserting it into the warp between the heddle and extra warp beam as soon as the warping is complete.

Now the warp is taken in hand. The weaver first ties one end of the twine on the heald stick at the bottom about 10cm above the ground. The weaver sit on a the low stool facing the loom on whose right side is the warp beam and to her left is the cloth beam. To basket bearing one full ball of yarn each are placed near each end of the loom. Now the weaver picks up the two end of the yarn ball and ties them on the left of cloth beam. In the same way one of the threads is wound on the extra warp beam while the other yarn goes inside the heald. Both the yarn are wound together on the warp beam which is on the warp back straight to the cloth beam on the left. The same process is repeated again and again swiftly till it attains the require size. After the warping is completed the bamboo tube used as the jacket covering the heddle is pulled out and all the bars and sticks are removed from the ground and the warp is set up in horizontal position. Now, the warp beam is replaced by a longer and thicker beam about 1 meter long and 4 cm in diameter and fastened on the wall or on the two posts. The other beam, which is used as the cloth beam is also, replaced by another hard beam with 80cm long and 3cms thick. Another cloth beam of the same size is placed over the cloth beams, which is held together by the belt made up of hide or cotton. The weaver now sits on the stools and fixes the belt. By bending a little forward she releases the

tension a little and raises the extra warp beam by the right hand and lease rod is inserted into the warp through the shed so formed. Now the loom is set and ready for weaving.

- **Weaving**

Weavers starts weaving by sitting in convenient place and fixing the belt and grapes the lease rod together with the heald stick and moves them up and down the warp sheet so that they work smoothly. First the weaver insert the sword along with the lease rod and turns the sword to it's edge and shuttle is thrown through the shed so caused from right to left. The first the weft is beaten down by the edge of the sword very gently to the level of the cloth beam. As described in the setting of the loom, the heald string holds some of the yarns with the heald string and leaves other. The second weft is required to be inserted along with the heald stick. While doing this the weaver bends a little forward by which the tension of the warp is released, the fore finger rest on the lease rod, the thumb raises the heald stick along with layer of the warp and then the sword is inserted through the shed so formed. The loom is then stretched again. At this stage the warp yarns 1, 3, 5... from the upper layer and 2, 4, 6... the lower layer. The sword is again turn to its edge and the shuttle is thrown from the left side by the left hand and is beaten twice with certain amount of strength. While inserting the sword it is always done from the right side with the right hand whereas the shuttle is thrown alternatively from right to left and from left to right. The sword is first inserted along the lease rod and secondly by lifting the heald sticks. The process continues till about 20 cm of the cloth woven. At this point the weaver loosens the tensions of looms and the woven cloth is slipped down towards the cloth beam by holding the two end of the sword. The heald stick, the lease rod and extra warp beam are adjusted to the original position. The weaver is to keep in mind the spread the warp at extra warp beam so that the uniformity of the breadth of the cloth is maintained. The process is continued till the end. When the whole of the warp is woven leaving about 15cm, it is cut at the middle by a bamboo knife or blade. This unwoven yarn later on forms the fringes at the breadth side of the cloth (Census of India, 1981). Plate XVIII, XIX and XX exhibits artisan in Back strap loom weaving and processing Yatha. Generally it takes nearly 15-20 hours for an expert weaver to weave a complete strip of ordinary Yatha. For a good quality Yatha, one requires nearly 30 hrs to complete a full size Yatha depending on the nature of design.

## TECHNIQUE OF YATHA WEAVING



**PLATE XVIII.** Yatha Weaver in a Back strap Loom  
in Bhalukhop



**PLATE XIX** Yatha weaving in progress



**PLATE XX** Final checking by artisans and folding of  
Yatha for selling by weaver in 10<sup>th</sup> mile  
area of Kalimpong

#### **4.5 TECHNIQUE OF PRODUCTION IN KALIMPONG BAGS**

The manufacturing of utilitarian bags with traditional shade and impression has the long years of development in the Darjeeling hill areas (Manjusha, 1992). It is the typical designs of cloth and the pattern that embrace the customers since long. Earlier the weaver locally weaves much of the cloths used by the artisans. Moreover with the availability of substitute cloth from textile mills, now much of the produce is made out of the textile produce. These products are much cheaper than the handloom produce. In the process the artisans starts with the cutting of all the accessories according to the traditional designs and shapes manually by scissor. For cutting, they normally use different frames to outline the designs. Then the outer layer (traditional cloth) is pasted to paperboard with either homemade gum or by synthetic adhesive (fevicol). Instead, cotton padding or sponges are also used to give puffy look. The pasting is done to ease the process of stitching.

Thus, the final stitching follows with the fitting of zipper, border stripe of nylon, inner lining cloth of linen, loop etc. In addition, the clips, buttons are fitted later. Ultimately jumka in some bags are unfurled with the use of needle head. It is through these techniques that variety of kalimpong bags is produce. Wallet, Pencil and Pen case, Toilet bags, Wastebasket, Magazine holder, Ladies bags etc are produce in traditional style.

#### **4.6 TECHNIQUE OF PRODUCTION IN BAMBOO CRAFT**

Basketry is an old art and indispensably necessary for household, plantation and for packaging of various goods in the hill region of Darjeeling Himalaya. It is however; little importance is given to the development of the craft. The manufacture of the bamboo basket is still carried on in the same way as it has been done in the traditional past. No effort has been made to improve its art of production so far. The process of making the article is still in a very crude state and followed through hereditary guild (Chhetri & Sao 1995).

The weaving of basket work is done in following method: i. Plaited or woven, ii. Wicker, and iii. Coiled and iv. Twined method.

i. Plaited or woven method

Plaited work consist of two sets of element which are called warp and weft crossing each other forming different designs such as checks, twilled, twisted.

## ii. Wicker method

In wicker method the warp is not pliable but stiff one, while weft is pliable which passes over and under alternatively on the warp. The stiffness of warp depend upon the sturdiness require for the basket.

## iii. Coiled method

Coiled method the weft is twisted and coiled around to make it more sturdy. The main varieties used in the process are:

- a. Checked in: Which the warp and weft pass over and under each other singly like the rand wicker work. This includes wattle, in which the warp stakes are planted in the weft branches bent in and out between them.
- b. Twilled-in: Which each weft passes over and then under two or more warps producing varying width.
- c. Warp in: Which flexible weft are warp in passing.

## iv. Twined method

When two or more weft pass alternatively in front of and behind each of warp crossing them obliquely. Twining with two or three weft is technically called 'Fitching' and waling respectively. There are many varieties in twin work e.g., plain twined and twilled- twined, when two warps passes over each time; while two warps may be upright, crossed or split. In warped- twined khongi, bird cage and doko work the foundation count of both horizontal and vertical element; often rigid at the crossing of which the weft or warp may be warped and twining are often indistinguishable on the surface, though it may be distinguishable in reverse side (Census of India, 1981).

In the study area following process is being undertaken during manufacturing of various items of basketry

Firstly, fundamental to the bamboo craft is the sorting and collection of full-grown green bamboo from the field as shown in Plate XXI. Subsequently the stock of bamboo is brought to the courtyard and splitted to several small pieces that are meant for skinning to make stripes. This is one of the most tedious processes in basketry work. After the skinning is done, the second important process is seasoning the stripes. This is done by smoking the bunch of stripes over the Bhar (shelf for drying over the fire place in the kitchen). Smoking provide resistance and make it pest free. Care is taken to avoid any flaw while skinning and to avoid any injury. Plate XXII, XXIII and

XXIV exhibit the subsequent process of sizing, splitting, stripping and smoking of the bamboo for weaving various articles.

Weaving always proceeds with the weaving of mat by lying of stripes straight on the ground and alternatively by putting across another stripe squeezing through up and down rhythm as shown in Plate XXV, XXVI and XXVII. After a certain level these mat is folded upward and stripes are woven around radiating out and finally margin / border are made by twisting and folding the 'pat choya'. While weaving weaver, also keep a pot of water to sprinkle the stripes to make it flexible while weaving. This is how that much of the baskets are woven.

Moreover, there are certain specifications for the use of raw material for producing some durable craft product. Like in Nanglo weaving, the akhi (central part) where the fall of stress is more chee-pay-ko bash (Mature bamboo) of nearly twelve year old are used. It is then woven with less mature bamboo of nearly six years old. Ring for the margin is made out of ka-lee-lo bash (of maturity of one to two years) and knotting stripes is made out from one year old bamboo as it is easily folded, twisted, squeezed and it is not breakable. This specification is equally true for the production of Thunchay and other durable article.

Nanglo is a winnowing round tray used exclusively all community irrespective of caste colour and race. It is also used for husking and drying purpose. The average size of Nanglo is approximately two feet in diameter. Nanglo weaving is done by placing the flat strips crossing one another at right angle. Subsequently strips are added as such weft and warp are alternately crossing each other over and then under two or more forming checks design as mat. After a mat is woven, it is compressed by hitting with wooden mallet from the edge. The mat as woven of size 2x2 feet is then laid flat and squeezed in between two ring of bamboo approximately of two feet in diameter and thickness of about one inch. The unwanted portion is trimmed and simultaneously knots are placed around the tray firmly while piercing the cane strip. A complete process of Nanglo weaving is exhibited in Plate XXVIII XXIX, XXX, XXXI, XXXII, XXXIII and XXXIV

Doko is an inverted pyramid shaped perforated basket and flat at the base. It is commonly used for ferrying goods and packaging in the hill. Weaving of doko is done by placing the flat strips crossing one another at right angle. About four to six flat strips are kept in this position. This depends on the requirement of sturdiness. These strips are

bit tough. These flat pliable strips are passed alternatively over and under stiff flat strips, which are used as warp. This keeps the warp in rigid position. Keeping in view the size of the basket the warp strip are bend upward to ensure flat bottom. The pliable strip weft forms the outer body of the basket. The weft runs obliquely from right and left end. The twilling is continued until the top of the basket. The stiff warp is cut to size, margin strip is added around top, and this is reinforced with the weft strips twisting and coiling. Further, an additional base is added to provide firm base and finally hard strip is inserted from base to make it stable and tough. This hard strip used in doko is locally called as Camro.

Thunchay is an imperforated basket for carrying food grain and storing it. It is some what inverted pyramidal, flat with stand at bottom and round at top. Thunchay are woven by lying of warp strip alternately and these are closely woven forming the design of check, twilled and twined. While weaving precaution are taken to smoothen the edge of each strip to ensure tight and fine weaving. Special care is taken for the use of material as it provides better durability.

Thus, this is how various articles are produce following different method for the carrying, storing, collecting, decorating, packaging, drying, planting and other uses. These articles are used in household, plantation, construction, trade and other activity.

#### **4.5 TECHNIQUE OF PRODUCTION IN WOOD CRAFT**

The techniques of the wood craft as practiced by the present-day craftsmen in the study area are mainly traditional (Chamling, 2003). The accounts of technique as followed by the artisans in the study area are follows:

The fundamental to woodcraft is is right selection of planks in the market and the seasoned of planks. The artisans normally keep some stock of plank in advance to keep the pace of work. Seasoning plank sized to pieces using marking string and hand saw.. The piece is carefully trimmed with the adze to give the desire shape; it is thenfollowed by smoothening the surface. Craftsmen then, outline the draft of design by means of tracing paper on the plank. These outlines are marked firmly and in the area of deep cutting nail hole are made with the use of hand drill so as to enable the blade of Fred saw machine to work on with. Two type of Fred saw machine are used by much of the artisans- manually run machine and mechanically run electrical run

machine. The use of machine has provided much ease to the prelim work of the artisans. Plate XXXV and XXXVI exhibits artisans and Fred saw in use by the artisans

Now the real technique and skill lie in the subsequent operation by the artisans. As it depends on the artisans true knowledge of the form and correct use of the tools (Sen, 2003: Shah, 2004), which would enable him to deftly take out the unwanted portion by means of gauges and chisels of different shapes and size. The artisan toils with the manipulation of different strokes through the movement of hands. Starting with broad outlines, the artisans proceed from simple to intricate carvings. Beginning with large tools he progressively uses their finer chisels, smoothening tools, drill, carving veins giving light and shade, chipping of spaces in the recesses or decorating the background, the chisel in hand, lightly held and freely manipulated by the fingers, is tapped by the mallet with repeated strokes, light or heavy according to necessity. Thus, the craftsmen works from low to moderate and moderate to high relief and carries out low and deep undercutting as require by means of very simple tools. The finishing is done by innumerable patient strokes of finer chisels of various shape and sizes are used as in Plate XXXVII.

Of the tools use by the wood-carvers for minute details, special mention may be made of chisels and gauges of various shape ranging from the point of a needle to three fourth of an inch. They also vary in number according to the extent of artistic ability of the artisans, the nature of carving and the quality of wood on which they work. Different sizes of chisels are also used for the different purposes. The largest sizes of chisel is of 8cm at the edge is generally used for leveling the surface. Chisels of smaller size are used for different purpose like rounding the edges, cutting timber in pieces, making holes and for other purposes.

The Wood craft artisans are skilled in carpenter. They uses common tools like hand saw, adze, plane, chisels, drill, vase and other tools including center-bit, screw driver, various type of hammer, foot-rule, measuring tape, iron files, pliers, various frames for holding chisels to work with and hones for sharpening chisels. However, the main dependence of the carver is on a large number of small handless chisel, gauges and punches of various size and shapes worked with the help of a mallet of wood used to strike the chisels. It may be noted that for carving of finer item like eye, ears, nose, lips etc in statue or mask, sharper and tiny tools are require (Rai, 2003). In the process when the rough figure is shaped, a finer variety of chisel with thinner and narrow

## TECHNIQUE OF PRODUCTION IN BAMBOO CRAFT



**PLATE XXI** Collection of bamboo from the field



**PLATE XXII** Artisan working with bamboo in 12<sup>th</sup> Kalimpong



**PLATE XXIII** Sizing, Splitting and stripping of Bamboo



**PLATE XXIV** A typical village kitchen seasoning bamboo stripes in smoke chula, Sindaybong



**PLATE XXV** Master craftsman I. B. Subba of Rousay bazaar stripping the fine bamboo stripes for manufacture of woven paper



**PLATE XXVI** Fine Bamboo stripes for making woven paper



**PLATE XXVII** Fancy looking letter pad on bamboo paper (woven) shown during survey in Sindyabong

## MAKING OF NANGLO (A type of Bamboo craft)



**PLATE XXVIII** A bamboo hut - multipurpose shed in hill village



**PLATE XXIX** Women-weaving mat in. iIn Payong Busty



**PLATE XXX** A scene of unaccounted family cooperation



**PLATE XXXI** Fitting the ring on edge of winnowing tray (Nanglo)



**PLATE XXXII** Reinforcing the Temporary knotting



**PLATE XXXIII** Providing temporary knot



**PLATE XXXIV(a)** Final knot is provided with the cane-stripes encircling edge



**PLATE XXXIV (b)** Open air work shed

## MAKING OF WOODCRAFT



**PLATE XXXV** Artisan attentively revealing the investigation



**PLATE XXXVI** Hand saw machine used in wood craft in Baghdhara, Kalimpong,.



**PLATE XXXVII** Wood Craft-Carving by chisel in progress



**PLATE XXXVIII** A stock of wooden artifact ready for marketing Kalimpong. Khasmahal

cutting edge is used in the same manner for carving the details of the design or the figure. A rough surface is then smoothed by rubbing it with sandpaper. A small quantity of fine yellow clay (pila mati) and varnish is now mixed to make it a paste. This paste is smeared on the surface for filling up the holes or uneven surfaces. The sand paper is once again applied, and the article is then given oil or varnish paint and finally fitted with loop for hanging on the wall. These pieces of carved artifact are also fitted to furniture to bestow added ritualistic and aesthetic value. The stock of decorative wooden is exhibited in Plate XXXVIII

#### **4.7 TECHNIQUE OF PRODUCTION IN COPPER & BRASS CRAFTS**

The technique of production followed by the artisans in copper & brass craft in manufacturing of handicraft are age old and out dated technique (Census of India, 1981). These techniques are simple and crude. The technique and process as followed in the craft are through hereditary guild. The essential technique in the manufacturing processes of copper and Brass crafts are assaying of metal, cutting of sheets, Joining of sheet, Carving, Joining, filing, washing, cleaning and polishing. Plate XXXIX, XXXIX to Plate LII exhibits various processes followed in the copper and Brass craft by the artisans

- **Assaying**

Assaying is a process of testing of metal or ore to determine the quality. Before producing any Copper-Brass artifact, it's assaying is very important. The quality of the copper-brass can be ascertained by its softness. These can be easily ascertained by the experience of the artisans by folding the sheet. If during folding or making a bend the sheets breaks it is said to be inferior quality. It is also the elastic property of the metal, which determines the quality. Another method of testing purity is that if more of the scraps are produce during annealing the metal is said to be impure.

- **Ascertain Design and Cutting of sheets**

Artisans after ascertaining the final design of the artifact cuts the copper/ brass/ white metal with the scissor. The thickness of the sheet ranges from 20 to 24 gauges.

- **Intermediate Joining and designing of artifact:**

After cutting is over the cut sheets are joined appropriately according to shape size and design of the final product. A special alloy is prepared for joining these called

## TECHNIQUE OF PRODUCTION IN COPPER & BRASS CRAFTS



**PLATE XXXIX.** Technique of making Sanai in skin blower in Gandhi road Darjeeling



**PLATE XL** Assembling various parts of Sanai/ Radung/ Geiling



**PLATE XLI** Re-heating while shaping and designing of sanai/Geiling/Radung

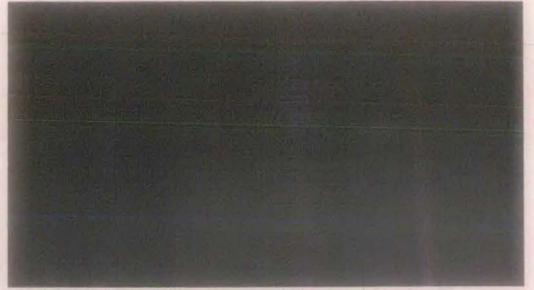


**PLATE XLII** An old artisan in the process of producing agricultural tools, Gandhi Rd, Darjeeling

## THE MAKING COPPER ARTIFACT



**PLATE XLIII** Process of manufacturing musical instrument in progress. Bagdhara in Kalimpong



**PLATE XLIV** Assembling the parts of Tibetan ritualistic instrument



**PLATE XLV.** Master craftsmen Hastaman Bareily upholding the the age old craft tradition



**PLATE XLVI** Joining of nozzle of the Phumba (kettle) - a Tibetan ritualistic artifact



**PLATE XLVII** Making of Kangling a copper made ritualistic artifact

## CARVING OF BRASS ARTIFACT



**PLATE XLVIII** Carving in and shaping Brass artifact



**PLATE XLIX** Artisan in pursuits of saving age old craft in Darjeeling Town



**PLATE L.** Carving and embossing in semi processed Brass artifact used in making Sanai/Gaeling (Tibetan ritualistic instrument) design in Tibetan motif



**PLATE LI,** Various tools and accessories used by artisans i



**PLATE LII** Carving and embossing traditional floral design

locally as Pine. The main ingredients of these soldering agents are in the following proportion approximately—Brass 200gm. + Zinc 100 gm. + Silver 6gm + Bromide 250gm. These joining give the artifact the first preliminary shape. Further processes continue with constant heating, cooling and hammering in different type of anvil until desired shape is retained. These processes of hammering reduce blistering of the sheet. Unlike ironwork in copper brass and white metal hammering is done after cooling due to its property of softness. These processes manufacture intermediate parts these intermediate parts of artifact are then ready for carving.

Beside, Carving, Joining, filing, washing, cleaning and polishing in the copper & brass craft is similar to silver craft as the designs; motif and the metallic texture of the craft are basically related.

#### **4.9 TECHNIQUE OF PRODUCTION IN BLACK SMITHY**

The technique of the craftsmen remains stagnant and passed on to generation to generation. The craftsmen remain sluggish due to lack of information and technical knowledge (Sao, 1992). Plate LIII to LXII exhibits the working of black smith in the process of heating and reheating in the manufacture various articles of daily use. The basic technique followed by these craftsmen is simple, crude and intensive and are presented below.

The basic technique followed by these craftsmen is simple, crude and intensive, and are presented below.

Iron is the basic metal used in the black smithy for the manufacture of artifacts tools and implements. Craftsmen in Black smithy usually first verify the purity of the metal by the process of assaying. The quality of the iron is ascertained by its hardness especially for the manufacture tools and implement used in various activities by man. To testify quality annealing process is imperative, while in the process if the iron blisters out or bends easily it determine poor quality. Then after, the artisan perceives design and unwanted portion is chisel out when iron is red hot. The process of shaping continues with constant annealing in anvil (Lee falam). It is common for all blacksmith workshops in the study area that the hearth is fitted with skin blower. The artisans constantly uses skin blower and require sufficient charcoal as fuel. However, non-availability of charcoal is the reason for the shift in the fuel to coke as an alternate fuel. Preliminary work is complete when the iron takes a desire shape. Small hammer are

## PROCESSING IN BLACK SMITHY



PLATE LIII I Artisan negotiating with the customers



PLATE LIV Heating and testing of iron



PLATE LV Tempering Technique of blacksmith – sprinkling with cold water in red hot iron tool in progress

## MAKING OF KNIVES AND KHUKRI



**PLATE LVI.** Technique of shaping and designing with chisel and hammer in manufacture of household tools. Harsing hatta



**PLATE LVII.** Artisan setting up wooden handle in cutting tool



**PLATE LVIII.** Connuous process of reheating in Blacksmithy (ironwork)



**PLATE LIX** Different type of anvil Murdkhi and arani used in miniature work



**PLATE LX** Investigating artisan in work shed in Lebong



**PLATE LXI** 'A' Shaped anvil stands for horizontal setting of anvil used in Metal craft

then used for final and designing. After the design is over artisan uses different grade files: for rubbing and sharpening of the edge. Ultimately tempering of the tools is necessary and thus when in red-hot state a technique of tempering by sprinkling the cold water at the edge of the tools. The artisan ascertains the tempering by flow of colour in the edge Handle is then fitted for cutting tool like Kukri, Bhala. Hasia, Patang, Kachia, tabal, Banchoro, Bamfok, Khurpa, and other cutting tools. While in the case for manufacturing agriculture implement the process of tempering is rarely followed. As the articles produced by the Blacksmith mainly caters to the category of utility implement for use in the daily work of life finishing are much less desirous than the other crafts artifact. The purpose of the utility thus reduces the work of artisans as finishing process consumes much of the artisan's working hours. This is one of the reasons for less price of the local produce of the black smith which is reflected in the poor condition of the craftsmen.

#### **4.10 TECHNIQUE OF PRODUCTION IN SILVER CRAFT**

The artisans have always explored the craft of making various artifacts on the preference of customers following some ritualistic codes and designs (Sao & Chhetri 2007-08). Like many other craft, this craft has also passed on from one generation to another generation as hereditary guild. The age-old techniques as followed by ancestors are still practiced by the silver artisans in the study area (Pal, 1968), Plate LXIII to LXXIV shows the working of the silver artisans in manufacturing various artifacts. A consolidated account of the technique of the silver crafts/artifacts as followed by most of the present day artisans is presented below:

- **Assaying of Silver**

Assaying is a process of testing of metal or ore to determine the quality. Before producing any silver artifact, it's assaying is very important. Rubbing the metal on touchstone is the most familiar method. It is a piece of soft black stone on which silver leaves a mark, by a colour of which the quality of metal is judged. Silver can also be tested by its ring or by cutting it. If it cuts soft, there is probably a zinc alloy, if it is cut hard, copper alloy is indicated. Copper alloy shows blackish tinge and yellowish colour shows zinc alloy.

To test the purity of silver sulphuric acid is also used. The silver is first rubbed to make a streak out or slightly filed at a place and then touched with the acid; no

reaction would appear on the surface if the silver is pure. However, on the silver with copper in it the acid would show some brisk action. The spot changes into light deep bluish colour in a relative proportion. Heating also tests the purity of silver. When pure silver is heated, they do not change colour. Because of other properties in the metals, these become oxide and changed grayish colour would indicate the impurities present

Another important method of testing silver is by listening to the vibration of sound. If the vibration of sound is high pitch and piercing, when silver coin is thrown on hard stone or an anvil, it determines impure state. However, in case of pure metal the fall produces dull sound.

- **Alloying**

After the metal is tested it is necessary to give certain hardness to make it fit for the ordinary wear and tear as well as working intricate design on it. In making silver artifacts of various type and design copper and sometime zinc alloy is mixed. The proportion of alloy varies in all type of artifact as it gives the toughness to the metal.

- **Refining**

Lead is used as an agent to purify silver. The following steps are necessary for the refining of the silver:

Firstly, the impurities are ascertained. If the content of the base metal is one fourth of the metal double the quantity of the lead is require. If the impurities are less an equal quantity of lead is sufficient to cleansing.

Secondly, crucible (Carua) containing silver is place in hearth (Bhati) of charcoal and blast of air is given with skin blower or blowing machine. In short, time when silver melts, an equal quantity or double the quantity of lead is added. The heating continues until the lead is burnt to ashes. A yellowish smoke comes out from burning of alloy. As soon as yellowish smoke stops, it shows that part of the lead has been burnt. The silver would look like red bright thin liquid. Then the crucible (Carua) is removed from the hearth. Metal is poured in earthen ring for casting (Gharua) in molten state, which is placed over iron plate and left for cooling. After it is taken out, ashes and some clay and sand particle stuck to it are removed by striking it against the anvil (lee). The silver is again melted in crucible. To prevent splitting up of metal borax powder is added to it. Now the molten silver is poured into Gharua in require quantity

## CONSTANT HEATING AND REHEATING (in Black smithy)



**PLATE LXII** An old artisan engage in making knives at Harsing , a Traditional skin blower and a continuous process of annealing in manufacturing of khukri

## SHAPING OF SILVER ARTIFACTS



**PLATE LXIII** melting of old silver artifact in carua over hearth fitted with machine blower



**PLATE LXIV** Reshaping old article in Garua(frame)



**PLATE LXV** Annealing Silver and making of sheet



**PLATE LXVI** Investigating silver artisan in Tripai



**PLATE LXVII** Artisan applying mild heat in between the designing process

and left for cooling and the piece of the metal is ready. In this way, solid metal can be used for making silver craft.

- **Refining of Old Ornament and Artifacts as Raw Material**

Observations have shown that most of the artisans convert old article of silver into new. The artisans put the pieces of old artifact and ornament of silver in Carua for fusing. Some powder of borax is put with it for melting of the metal. Sometime there are certain base properties such as bronze, brass or tin in silver. Their presence may splits up the metal. To prevent the splitting of metal borax powder is mixed. Crucible containing the old metal is kept over the hearth (bhati) and a blast of air is given with skin blower or blowing machine. Then a stage would reach when some vapour would appear floating on the melted surface. This would be an indication to remove the crucible from the hearth. Molten metal is then poured into the Garua. The metal thus poured into Garua takes the shape and become solid to work with.

- **Process of Annealing**

Metal become hard by hammering or by drawing it often to make a wire out of it. In case the process is continued without re-heating metal, it is likely to break. To prevent metal from becoming brittle, re-heating is done. This process of softening metal is called annealing, metal become ductile and easier to work on. Thus, the artisan constantly forges the metal, and in the process, the artisans hold the metal with pincer on one hand and hammer on other hand. Metal are heated them to dull red in between the soft flames of charcoal. It is witnessed during survey that artisan keep one assistant while forging. The process continue until require gauge or thickness of sheet is obtained. It may be noted that it is not necessary that the metal should be hammer while it is red hot. The annealed metal can be worked easily as there is less chance for breaking or cracking. Moreover, after every 30 to 40 strokes re-heating becomes necessary to avoid cracks, splits and stresses.

- **Designing of Artifacts**

Annealed silver is forged constantly over a different type of anvil viz., ground anvil, horizontal anvil, small pointed, flat anvil and elongated anvil of various shape and size. The artisans shape and design step by according to design of different artifacts. It is clear that whole range of article is produced from the blocks, which are reduced to sheet by hammering. The wire are also made from these sheet prepare. It is

also true that majority of the artisans does not possessed any mechanical device for drawing sheet and wire. All the work is done manually. Various gauge and dimension of sheet are required in producing artifacts. It is from the sheet prepared by the artisans various geometrical shapes as require by the artisans are drawn. These shapes are again worked to form various depressions, viz., concave, convex, conical, semi sphere, ornamental, floral design and other. For shaping the articles, a number of implements are used to give a shape to a sheet. Depending on the size and the shape of article, following tools of various sizes are required viz., hammer, mallet, anvil, chisels, pincer, pliers, forceps, punches and impression needle and other.

Wires of different thickness in round and half round shapes are prepared and then plated, knitted and twisted according to the design of the artifacts. These sheets are prepared with special scissor or chisels (Cheno) from the large sheet.

This is how the different shapes are produced for a single article. These different pieces are washed with swag (bromide) to erase impurities and a trial is ascertained for it is final shape and fitting.

- **Processes of Carving:**

The carving entails the processes: i. Preparation of mould, ii. Casting and iii. Carving

1. Preparation of mould: Before the carving is laid preliminary, work is preparing the moulds. Moulds are prepared by mixing sal resin (sal dhoop), brick dust and mustard oil in the ratio of 2:1:1 respectively. These mould is prepare by thoroughly mixing and heating in the hearth over a carai (semi-spherical vessel used for cooking) until a certain consistent thickness is attained, which the artisan with his experience ascertain.
2. Casting: These molten hot moulds are used for casting on the different pieces of artifacts and left for cementing. The piece of artifact is ready for carving. The casting of the mould facilitates to avoid the hollowness of the artifacts while laying down the intricate pattern of design.
3. Carving: The carvings of the artifacts are done in either piecemeal or at stretch. Carving of the artifacts starts with the drawing of rough outline with the pencil and compass. Various tools require for carving are hammer, mallet, numerous chisels, scrapper, scribe, punches, impression needles and other tools. Beside carver uses

## PROCESSING IN SILVER CRAFT



PLATE LXVIII Technique of intermediate designing and Joining of a artifact (Lac) on



PLATE LXIX Designing and infilling of Mould for reinforcement semi-finished artifact to ease carving



PLATE LXX Cleansing and Brushing (Brass Brush) in Sulphuric acid



PLATE LXXI Final washing in Ritha (Soap nut ) water



PLATE LXXII Artisan in pursuit of carving and embossing of artifact in blue lamp<sup>8<sup>th</sup></sup> mile, Kalimpong



PLATE LXXIII Picture depicts narrow workshop with small working table and



PLATE LXXIV Manually operated wire machine used in Silver craft

numerous handle less chisels, gauges and punches of various size and shapes to translate the intricate pattern into perfect designs. For this it require a true knowledge of the form and correct use of the tools, which would enable him to deftly and engrave and carve with the manipulation of different strokes through the movement of hands. Carvings are a strenuous process and consume much of working schedule for completing an artifact.

- **Processes of Soldering**

When the carving and engraving is over, the mould are drained by heating and burning by blue lamp and wash again with soda and bromide (swag) to erase the impurities and left to dry. Then pieces of the article are arranged and deftly joined together. This is done some time done at the initial or middle stages and sometime after carving is done. Joining is done in piecemeal or at stretch.

The process of joining of metal is interesting. Firstly an alloy (silver pine) is prepare as soldering agent, with the mixing of silver dust, zinc (khaprang), and brass at a ratio of 2:1:1 respectively in a pot with water. Before application, the artifact is clean well and tightly held the joint by hand or tightly tied with an iron binding wire. The whole piece is properly cleaned with swag and soldering fragment is put to area. Having soldering fragment firmly stick to the area are dried well and heated for soldering. During soldering artisans carefully monitor the heat flow, thus only the appropriate area get the soldering temperature. To ascertain the require temperature and heat, blowpipe are also used. This help to throw heat at right place. Precision is required to get the work done. Beside the artisans is also very careful that the heat is not directed at the solder, otherwise tiny bits of solder would melt and fall. The smallest flaw in soldering particularly of minute an elaborate piece ruins the whole work. In that, the work is taken up a fresh. Great deftness is shown in carrying out the soldering job, as there is a very minute difference in the melting temperature of the metal and solder. Whatever be the processes involved, it is the correct judgment of an artisans who knows what to do and when.

Simple and small article are solder by putting them in charcoal or asbestos block held on wooden plank. The flame is produce from kerosene lamp or in the hearth. While when the pieces are minute and need elaborate soldering, the parts of the pieces

are placed close to each other on a tin plate having a thick coat of clay and then only soldering process is taken up.

- **Processes of Filing, Washing and Polishing**

After the shaping and carving, the article reaches the stage of filing and scrapping. This process removes edges, scratches; ball-up spot of solder and perfect the surface and curve according to the shape. For this the artisans use different number of needle files, some flat, round, half round, triangular, concave and other with varying edge. Emery papers of different grades are also used. In this way, scratches produced by the use of rough abrasive are removed. The artisans do this work with care otherwise over filing may spoil the whole piece.

On completion of filing and cleansing processes the artifact is ready for polishing. For the polishing artisan prepare the solution of Sulphuric acid –1840 and water in a ratio of 1:2 and the articles are boiled in the solution for 5 to 10 minute. Then it is being clean with water and brushed (with brass wire). In the due course the artifact is washed with soap-nut water (Ritha pani) to be ready for market.

#### **4.11 CONCLUSION**

The technique in the manufacturing of these traditional handicrafts in the study area was in a manner acknowledged as an important part of rich cultural heritage of this region. Now though this sentiment continues to be repeated there is pronounced change in the general attitude towards crafts, which is completely unsettling our basic sense of life values. For though handicrafts fulfilled a positive physical need in the daily requirements of the people of this region, they also served to satisfy the aesthetic hunger in man and provided a vehicle for his urge for self-expression which reveals a conscious aesthetic approach. The concept behind the handicrafts of this region as originally conceived was imbuing everything used in the daily life, no matter how common or insignificant with touch of beauty to add brightness to an otherwise dull and drab existence. The handicrafts of late got partially submerged under the rising forces of modern industrialization with its high mechanization, and lost their basic role in the over all perspective. Efforts are to be made to find new market now for these handicrafts of the study area; hence it is necessary to adapt certain changes particularly in the forms of improved product, design, efficient production technique. At the same

time scrupulous care is being taken to prevent any violence to the folk character and rustic vitality of these handicrafts and preserve their beauty of form and colour, perfected over long centuries. Craftsman of this region are however needs to be trained to use, in articles of modern use traditional motifs and designs without vulgarizing them.

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