THE ORIGIN AND TECHNIQUES OF TAPESTRY WEAVING AND ITS USE IN CONTEMPORARY DESIGN

by

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CHAPTER I

INTRODUCTION

One of the first ways in which people of early civilizations expressed their artistic feelings was through pictorial tapestry weaving. Long before the Christian era the tapestry technique was known in both the Old and the New World.

Even in those early periods the tapestry technique showed variations, variations still in use today. Up to the twentieth century there have been no major changes in the tapestry technique, but the general appearance and use of the tapestries varied considerably throughout the ages. The technique has been practiced by primitive people, by peasants, as well as by royalty, and is becoming a very popular technique in the making of wall decoration for modern interiors. In its contemporary use a few new trends are noticeable; trends which may change the traditional tapestry structure.

As in early times the weaving of tapestries is still a handicraft, and this may be a major reason for the contemporary popularity--it could be a revolt against the modern machine made products.

Purpose of the Study

The author has undertaken to study the origin of tapestry weaving and its development throughout the centuries. Special attention has been paid to the tapestry techniques as well as to the design motifs and the use of tapestries as these factors are influenced by one another.

From the above mentioned study has been determined to what extent the traditional tapestry techniques are still used today, what the modern trends and technique changes are, which countries have had and still have the main influences on technique changes, and whether contemporary tapestry designers and weavers have been influenced by the earlier techniques and design motifs of tapestries.

It is also hoped that the report will offer some ideas for contemporary tapestry design and techniques. Some samples of tapestry weaving done by the author are included to show the tapestry techniques and possible adaptations for contemporary use.

CHAPTER II

IN DEFINING TAPESTRY WEAVING

Definition

There is a tendency to use the term tapestry in referring to any large wall-hanging, wall decoration, furniture and cushion covering. The function the piece of fabric fulfills is therefore described, without considering the actual structure of the fabric or the technique used. In this way different embroideries, as well as brocaded fabrics are wrongly called tapestries. The actual difference, however, is to be found in the structure of the material. (86, p.1)

The weaving technique is used in tapestry making. However, A. Varron, in an article in Ciba Review, described the technique as being midway between weaving and embroidery, (94, p.156) because more actual handwork is incorporated than in real weaving.

A tapestry is a simple fabric, woven by hand, in which the pattern is formed by the crosswise threads (weft). The weft threads are regularly over one lengthwise thread (warp) and under one as in plain weaves[1], but

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[1]There are exceptions such as tapestry twills, Scandinavian tapestry variations, and Soumak weaving, described later in this text.

the threads do not run from one selvage to the other as generally in weaving; each color thread is only woven back and forth around the warp threads of the area where it is needed. (75, p.9) Different techniques are used to join two color areas and in a few exceptional cases floating threads on the wrong side will be present. The widely-spaced warp threads are covered entirely by the weft threads (73, p.88) but two threads are never used together as one. (74, p.52)

A contemporary French designer, Jean Lurcat, in defining tapestry, also mentioned size, and called a tapestry "a very large work of woven and coloured (sic) wools". (57, p.2) According to him tapestries are not associated with slender proportions; tapestries "must live and be seen on a grand scale--like a fresco". (57, p.3)

Various needlework hangings in different embroidery techniques such as grospoint, petitpoint, and other canvas embroideries (7, p.395), and cross-stitch embroidery (73, p.88) are often called tapestries, as well as the famous Bayeux tapestry[2]. (62, p.72-74) As clearly stated by

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[2]The Bayeux tapestry is in picture a representation of the conquest of England in 1066, embroidered by Queen Mathilda (as generally accepted), the wife of William the Conqueror. It is more than seventy yards long and about eighteen inches wide and is embroidered on a linen background.

W. Gordon Hunton, it must be borne in mind that

> in embroidery a pattern is produced by threads on a material already woven or netted; whereas in tapestry the material is made at the same time as the pattern is formed. In tapestry the work covers every point, whereas in embroidery the work is partly over the surface of the material employed. (42, p.3)

Some kinds of canvas embroidery such as grospoint and petit-point are exceptions in that the entire surface is covered by embroidery stitches, but the work is done on previously woven canvas.

Tapestry resembles brocading to a certain extent in appearance in that the weft threads do not run from selvage to selvage. (74, p.52) The difference is that, in brocading, the design thread is an additional thread, added to the background weft, while in tapestry the design thread, is the only weft thread used in that area. (75, p.9) Contrary to brocade, the design for tapestry is the same on both sides, even if it is somewhat obscured on the wrong side by floating threads or loose ends. (74, p.52) In both cases the "design is an integral part of the fabric", (13, p.3) but brocading is usually machine-made and thus a mechanical repetition of the same design. (62, p.xi) While true tapestry is handwoven with individuality characteristic of all handmade articles, very seldom will a design repeat be an exact copy of the

first.

By way of summarizing, the definition composed by Dr. Junius B. Bird[3] provides a good overall picture:

> Tapestry, structurally, is a woven fabric, usually patterned, in which weft yarns of contrasting shades, colors, or textures are restricted to certain areas and do not pass from one side selvage to the other. In this respect it differs distinctly from plain weaves although the movement of the weft in relation to the warp is usually the same as in plain weaves--regularly over one under one. Weft count is generally higher than the warp, sufficient to completely hide the warp. Exceptions with square count occur, so tapestry cannot be defined just on the basis of texture or of high weft ratio.

Changes in the way of living and in the interiors of modern homes and buildings brought about certain changes in the appearance of tapestries in general, and in the technique of tapestry weaving. In contemporary tapestries there is a tendency not to cover the warp completely as in traditional tapestries, but to let both the warp and the weft serve as decorative elements. (99, vol. 17, p. 23) Parts of the tapestry are often left open or are filled by some kind of open work to serve as part of the

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[3] Bird, Dr. Junius B., Curator of South American Archaeology at the American Museum of Natural History, New York. Personal letter, August 10, 1960.

design. The contemporary variations are more completely discussed in Chapter X. Many contemporary weavers, however, still use the traditional tapestry technique.

The Use of Tapestries

While wall hangings are not necessarily tapestries, the converse is also true; all tapestries are not wall hangings. It was, however, the main use throughout the ages. As early as the ancient Egyptian and Greek periods, tapestries were used in the form of draperies on walls or in the tents of wandering tribes, as partitions in the absence of interior walls, and also to protect alternately from sun and cold. (62, p.4) The medieval householder used it for similar purposes--to cover the bare stonework of the walls. (32, vol. 28, p.10) Because of the necessity to have removable insulation to be used in the winter and, if necessary, removed in summer, the closely woven tapestry developed. However, real tapestries were not the only fabric used for this purpose. Up to the Middle Ages all fabrics, used as draperies, were called tapestries. (62, p.4)

Tapestries were in general use, not only on the walls, but also as rugs on the rough floors, as seat covers, table and chest covers, cushion covers, knee rugs, horse rugs and saddle blankets, blankets, shawls, chair backs, and

to cover shelves to prevent dust from the open roof from falling into the food. (37, p.3172 and 51, p. 2425-2428)

Among the rich, tapestries became more than just functional fabrics. Their main use was as decoration to serve as background for the rich furniture in temples, palaces, and cathedrals (62, p. 4-19); as decoration for the pavilions that encircled the arenas; as street decoration during festivals; and as precious gifts. (62, p.xi-xiv)

The uses, mentioned above, were actually not the original uses of the tapestries. In the ancient Egyptian civilization, before the Christian era, the tapestry technique was probably used in the making of garment decorations. The oldest tapestry example from the grave of King Thotmosis, considered to have been made 1400 B.C., is a linen sheet with a multicolored pattern. (93, p.161)

In the first centuries A.D. tapestry decorations on garments were in general use, chiefly in the form of bands and medallions. This was true not only of the Egyptians, but also of the Peruvians. (20, vol. 12, p.38 and 5, vol. 12, p. 21-25)

The tapestry technique was also used for the making of different garments and wrappings such as by the Tlingit Indians of Alaska in the Chilkat dance blanket and the Chilkat sleeveless shirt. (25, vol. 8, p.66) Tapestry

blankets and wrappings were, and still are, used in different parts of Northern and Central Africa (30, p. 738-760), and by tribes of the American Indians. (54, p.3249-3253) Accessories such as bags, belts, garters, and hair-cords are common among the American Indians, although they are not necessarily made in the tapestry technique. (54, p.3251)

The word "tapestry" is derived from the French word "tapis" which means "a carpet". (7, p.394) In certain areas the tapestry technique was, and still is used in the making of certain kinds of rugs and carpets, for example Persian tapestry rugs and Navajo rugs.

Tapestries in their main use as wall hangings, have changed considerably since the ancient periods and Middle Ages. With the discovery of other methods of wall decoration, tapestry artists tried to modernize tapestries by imitating oil paintings of the great masters and by trying to create a three-dimensional effect. Without a personal style, and with no definite function to fulfill, a decline in tapestry as an art followed[4]. (32, vol. 28, p.10)

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[4]This was not in the workmanship, only in the artistic value of the design.

Today, however, new needs have arisen that inspire technique variations. A need for "an optical division of space in open floor plans" has brought about the development of woven fabrics suitable for modern interiors. (14, vol. 114, p.91) It is still in the experimental stage, with many contemporary weavers interested in developing a technique. Thus, in modern homes, tapestries serve as movable walls and doors, as insulation which is an important concern for modern sound effects, and to a certain extent as insulation for heating. (99, vol. 17, p. 23-24)

Jean Lurcat, a contemporary French tapestry designer whose designs are used in the still active Aubusson factory, compares tapestries with pictures. His meaning is that a tapestry, because its position is more carefully worked out and considered by the architect, is more permanent and of more "architectural significance" (57, p.4) than pictures. "Tapestry is stirring because one feels it is 'incorporated' in its setting and has a chosen place". (57, p.4) They are not meant to be framed; pliancy is typical of tapestries. (62, p.xii)

Tapestry Looms

With the exception of a few modifications, the basic tapestry technique has not been changed for many centuries (62, p.356) According to the method of working,

tapestries are divided into "high-warp" (hautelisse) and "low-warp" (basselisse). These terms actually refer to the looms used in the manufacturing of the tapestry.

The high-warp or vertical loom is the oldest type. It consists of two wooden or cast-iron uprights which support two movable cylinders. The main design lines are generally traced on the warp. The weaving starts from the bottom, each color is woven in separately, and several weavers can therefore work simultaneously. On an average a medieval high-warp weaver produced twenty-eight square centimetres a day. (62, p. 356-366)

In variations of the high-warp loom, the warp threads can be regulated by means of cords hanging above the weaver's head--every second warp thread is alternately moved forward and back in order to introduce the design threads and to obtain the plain weave necessary for tapestry. (94, p.156)

The weavers work from the wrong side. A mirror is placed in the front of the tapestry to enable them to get an overall picture of the completed right side. The design or cartoon (as it is called) is generally placed behind the weavers. The finished part rolls up, and while working for several years on a large tapestry, the weavers actually never get a complete view of it. (94, p.157)

The high-warp technique, called Flemish weaving in

Sweden, was generally used in Flanders[5], then adopted by France and finally spread to other European countries such as England and Sweden. (97, p.17-18) The famous Gobelins factory in France always used the high-warp method. The simple upright loom used by the early Egyptians, can be classified as high-warp. It was, however, much smaller than the looms used by the Gobelins, and, according to early Egyptian paintings, the weaver sat in front of the loom, opposite to the practice of the Gobelins, where the weaving was done from the back. (31, p.6) Egyptian weaving also commenced from the top instead of from the bottom as the case of the Gobelins. (93, p.162)

The low-warp or horizontal loom differs in many aspects from the high-warp. The warp is stretched horizontally and the threads are raised or lowered by means of treadles. The cartoon is fastened under the warp, and the work is also done from the wrong side. This method takes about one-third the time required for high-warp work, mainly because the weaver has both hands free to handle the weft. A disadvantage of the low-warp method is the difficulty to judge the result before the work is completed

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[5] A separate country in early Europe; now included in Netherlands, Belgium, and France.

and off the loom. Therefore low-warp is often described as a spiritless copying of the cartoon. (62, p.356-366) The name low-warp was used since the sixteenth century, but the looms were actually used since the fourteenth century when the products were still called treadle tapestries, referring to the treadle attachment which regulated the warp yarns. (62, p.93)

The low-warp is used in Aubusson and Beauvais factories of France (62, p.364-365), in England, for certain Swedish tapestries such as the Swedish "rölakan" (31, p.11), and in many other countries. The majority of the contemporary weavers probably use the low-warp.

It is very difficult to judge from the finished product what method has been used. The high-warp method is generally preferred for very large tapestries. (94, p.157)

Primitive looms, most of which can be considered as high-warp variations, were used by the early inhabitants of Peru and Mexico, by the Tlingit Indians of Alaska (the latter so primitive that it can hardly be called a loom), and are still in use among different tribes of the American Indians. They all work basically on the same principle. The loom used by the early tribes of Peru and Mexico, for example, was also called the backstrap loom. The construction is described by Raoul

d'Harcourt as follows:

> The warp was set up between two parallel sticks, the ends not being attached to the sticks themselves but to a coarse string secured to the sticks at a number of points. One of the sticks was tied by two long cords to a stake or hurdle while the other was held in place in front of the weaver by a stout braided strap passed round her waist.

The tension of the warp was thus easily adjusted. (20, vol. 12, p.9)

There are various other primitive looms described. The loom still in use by the Navajo weavers consists of two posts, firmly set into the ground, with two cross pieces to which the warp-threads are tied. (54, p.3250) As in all primitive looms, this loom has no heddle devices, and the weft is inserted after the weaver separates the warp threads by means of a stick. The method is often referred to as "finger weaving".

CHAPTER III

TAPESTRY TECHNIQUES

Hatching

In experimenting with color-shading in the tapestry technique, a system of "hatching" or "hachure" was developed in Flanders. These terms, which are used synonymously, are really descriptive of the technique, but are today more generally associated with the appearance of the tapestry piece, such as the terms "impressionism" and "realism" which are used in art.

The method is used where a gradual change of color is desired because it serves to merge the colors rather than simply place them side by side. (94, p.158) The process is intricate; the weaver actually divides the detail into long and short lines, parallel to one another and at right angles to the warp, to act as a dividing line between two colors in the design instead of making a distinct dividing line between the colors. This gives a soft line and the same effect as used in long-and-short stitch, an art needlework technique.

The technique first appeared in about the thirteenth

century in Flanders and soon became widely imitated[6]. It reached its height in the sixteenth century. H. E. Kiewe claims:

> .....it is only in virtue of his use of hachure that the tapestry weaver achieves the characteristic "tapestry" effect, in contrast to the light and shade effect of a painting..... (48, p.21-22)

In the seventeenth and eighteenth centuries the technique was abandoned in favor of imitation of oil paintings. In this way the real tapestry effect was lost. In contemporary tapestries--for example those of the Aubusson factory and others--this technique is again in use. (48, p.21-22)

Traditional Tapestry Techniques

As defined, a tapestry is a hand-woven fabric in which the warp threads are placed relatively far apart and are covered completely by the weft. The weave used is plain (tabby) weave, but the weft threads do not run from one selvage to the other; they form the design and are used only in the area where the particular color is needed, and they fit rather loosely around the warp threads. Technique variations occur where two colors join.

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[6]Some experts say it was already used by the early Egyptians (Copts). They used a similar method. Alternate shoots of linen and wool threads produced the same shaded effect.

For the warping, a strong thread such as linen is desirable. Other threads, even woolen yarns, had been used in earlier periods. For the weft thread, wool is traditional and more often used, but various other fibers had been used and are still used. For example, linen was used by the early Egyptians; wool, linen, and cotton by the Copts (early Egyptian Christians); cotton and wool by the early Peruvians, and silk by early Chinese weavers. (6, p.162)

After the loom has been warped with a strong thread, the weaver traces the outline of his design on the warp or fastens the cartoon at the back of the warp. Then he is ready to start with the actual weaving. The weft threads are used in relative short lengths and special tapestry shuttles are used to insert the weft threads. A tapestry shuttle is cone-shaped with a long, and relative sharp point in order to pick up the warp threads easily. The other end is in the form of a spool on which the weft threads are wound. (73, p.88) However, weavers often prefer the simple "butterfly". It is a small skein, made in the form of a figure eight around the thumb and little finger and tied in the center with the end of the yarn. It unwinds easily from the starting end and is used instead of a shuttle. (71, p. 166, 141) For traditional tapestries, the weft threads are regularly inserted over

and under one warp thread, and when a full row or a row in a particular color area is completed, a reed or tapestry fork is used to beat the weft back. The latter is a broad fork, with tines spaced to fit between the warp yarns. (7, p.399)

Since the weft threads do not go across the whole width of the fabric, it is usually necessary to do some kind of interlocking where two colors join. The way in which this interlocking is done usually determines the character of the tapestry, and tapestries are often classified according to these techniques, although two or more techniques frequently are used in the same piece. There are three basic techniques:

In the first, the slit or Kilim technique, the weft threads of adjoining color areas turn around the warp at the edge of the color area, leaving an opening in the weave (See Plate IIA). If there is a straight, vertical line in the design, and this is done between the same warp threads for a distance, a slit is formed. These slits are often used to accentuate the pattern, for example in certain tapestry technique rugs woven in the Near East. Often the two sides of a slit are later sewn together. If the design is such that very short slits form, they are not perceptible. (74, p.52-53) The two sides of the slits are sewn together by using a buttonhole stitch on the wrong

side of the tapestry, or, as for the French Gobelin method, an overcasting stitch is used in such a way that small parallel stitches show on the right side. (7, p.401, 445)

The name Kilim is probably derived from the oldest rug weave of the Near East. The finest rug of this type is the "Sehna Chileen", also known as Kelim, Killim, Khilin, Gilim, Gileem, Ghileem, and Chileen. (6, p.166)

The diagonal slit technique is a version of the Kilim. The method is the same: the weft threads do not interlock, but they progress forward one warp thread on each following row. In this way no slits are formed. (6, p.166) (See Plate IVB)

What Lila M. O'Neale referred to as "eccentric weaving", is often used to fill up slits left by the Kilim method. It consists of a thread, usually in a contrasting color, woven in the direction of the slit to fill it up or to serve as an additional pattern element. For example, this method was found in early Peruvian tapestries, made before the Christian era. (105, p.89-90, 163) It is illustrated in Plate IIB.

The second method is called dovetailing or the warp interlocking method. The weft of the two adjoining colors turn about a common warp or around two adjacent warp yarns (See Plate IA). This technique produces a serrated

edge, leaving no slit between the color areas, but a hard ridge can be felt. The method is also used on the diagonal. It was used by the Gobelins factory, and is used by the Navajo weavers, often combined with weft interlocking--one technique on the one side and the other on the other side of the rug. (7, p.401-402)

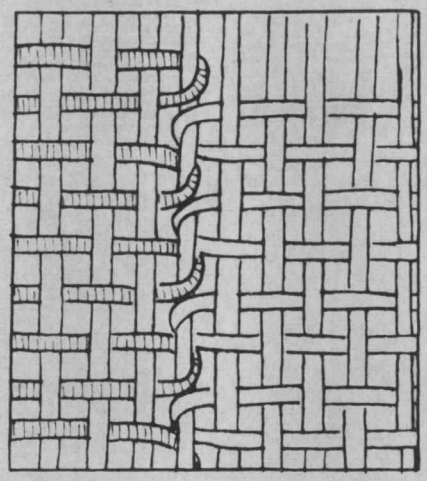
Weft interlocking is a third method. The threads of two adjacent colors interlock at the point where they meet, leaving no slit. Interlocking can be single, at alternate inlays thus, or double where interlocking is done at each inlay. (See Plate I, B and C) Both variations are commonly used in Scandinavian weaving; the former is reversible and usually used for Norwegian rölakan or åklae; the latter is non-reversible and used in Swedish rölakan. (18, p.186-191) Weft interlocking, mostly single interlocking, is also used by Navajo weavers. (7, p.402)

Some authorities consider the inlay technique as another basic technique for tapestry weaving. Contrary to true tapestry weaving a separate weft thread is used in the design areas. This weft thread passes regularly over two to four and under one to four warp threads for a few consecutive rows--usually until a row of design squares is

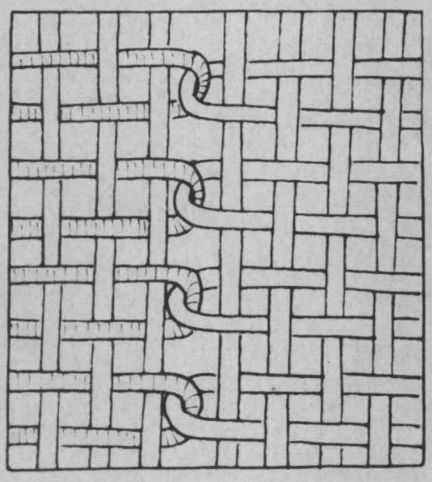
formed. Between each two of these rows, two rows of regular tapestry weaving is used, done with the actual weft thread. The method is described in Chapter VII.

These are the basic techniques; many other variations exist as indicated in Plate III. These variations are discussed later in this text.

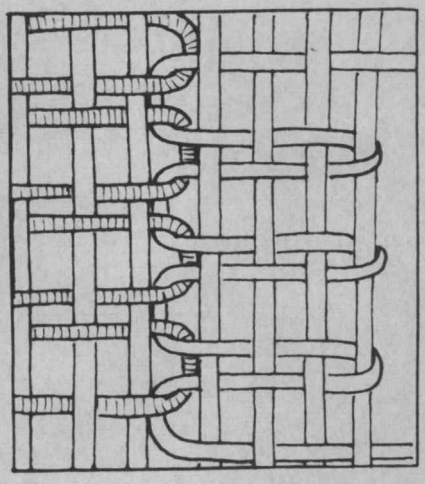
Plate I



A. Dovetailing.

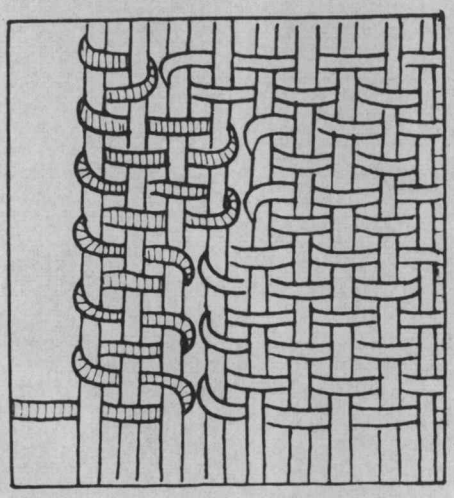


B. Single Weft interlocking (reversible)

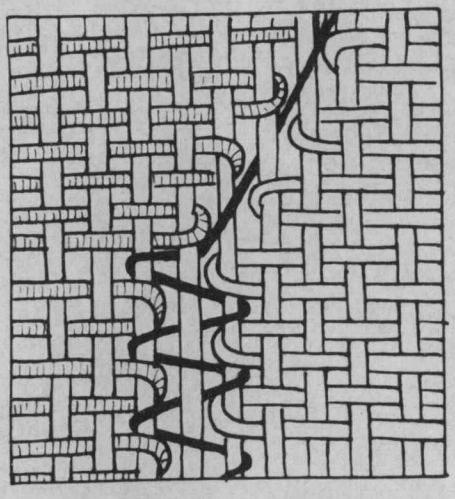


C. Double Weft interlocking (non-reversible)

Plate II



A. Slit or Kilim.



B. Eccentric Weaving.

PLATE III

TAPESTRY TECHNIQUES: THE MAIN USES IN DIFFERENT COUNTRIES

	Early Egypt	Early Peru	Near East	Flanders	France	England	Sweden	Denmark	Norway	Finland	Poland	Roumania	East	Cashmere	American Indians	Chimayo	Guatemala	Chilkat	Contemporary
Dovetailing	X		X	X	X	X	X	X		X					X	X	X		X
Diagonal dovetailing	X					X									X				X
Single weft interlocking				X	X	X	X	X	X	X			X		X			X	X
Double weft interlocking				X	X	X	X	X		X			X	X					X
Slit (or kilim)	X	X	X	X	X	X					X	X	X		X				X
Diagonal slit	X					X													X
Eccentric weaving		X																	
Inlay	X						X	X		X									X
Hatching	X			X	X	X													X
Soumak	X		X				X										X		
Twill			X						X					X					
Toothing									X										
Weft rows not parallel									X						X				X
Warp not completely covered																			X
Open weave		X																	X

CHAPTER IV

THE GENERAL DEVELOPMENT OF THE TAPESTRY INDUSTRY

It has been difficult to determine the country where the tapestry technique originated; however it has been generally accepted that it was used originally in the East. Early paintings and literary records have been the main sources of information in this respect. (93, p.161)

The oldest existing piece of woven tapestry was found in the tomb of Thotmosis[7] in Egypt, and authorities generally agreed that it was made about 1400 B.C. (93, p.161)

From discoveries made in 1941-1943 in Peru, archaeologists have learned that there were inhabitants in the Ancon and Supe regions[8] in the first millennium before Christ. They were not the first inhabitants of Peru but they made textiles, among which tapestry decorations were found, although the actual period when the tapestries were made is uncertain. (105, p.3, 14, 86, 163) Tapestry weaving in Peru survived until the

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[7] Also spelled Thutmose, Thotmes, Thoutmosis.

[8] An area stretching from 25 kilometers north of the port of Callao to 125 kilometers north.

seventeenth and eighteenth centuries, however, European influences brought definite changes. (20, p.13)

In the Near East tapestries apparently were produced in many areas during early times. Babylon probably had the first rug-making industry in the Old World. The oldest piece of this variation of the tapestry technique was found in ruins of Eastern Turkestan; another, dated about 400 B.C., was found in Crimea[9]. (6, p.154)

Another important group, the Coptic tapestries, were made by the Egyptian Christians during a period stretching from the second to the ninth century A.D. These tapestries were found in the graves and were probably preserved from rotting because of the dry, sandy soil in those areas. (31, p.2) These tapestries reflect the intermingling of cultures in those early periods, in that there are definite Hellenistic and Near East influences. (5, vol. 12, p.25-26)

Slowly the art of tapestry making spread through Europe. One theory is that this type of weaving, which had been used in Egypt mainly, spread through Europe as the Mohammedan army conquered different countries. This explains how the weavers of Aubusson started in 732 A.D., however still on a small scale. (55, p.203-204) It was

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[9]Located on a peninsula on the north side of the Black Sea.

shortly after Spain was conquered by the Arabs in 730 A.D. that tapestry making was practiced there. (85, vol. 26, p.255) The Spanish tapestry art showed a strong resemblance to the Coptic tapestries, mainly because both had a strong Arab flavor. Among others, the Spaniards produced fine tapestries in silk and gold. (85, vol. 26, p.255)

In many European countries during the early Middle Ages, tapestry weaving probably was a household occupation, like that of the peasants of quite recent times in the Scandinavian countries. (86, p.3) People were illiterate, and written records in this respect are rare, vague, scattered, and incomplete.

The monasteries of Germany, The Netherlands, France, and England also produced tapestries during the early Middle Ages. (86, p.3) Monastic records showed documents referring to tapestry weaving since the ninth and tenth centuries, and remained in the hands of those weavers until late in the twelfth century. (85, vol. 26, p.255) This led to the forming of guilds and the later tapestry manufactories.

The Middle Ages, with the rise in chivalry, the increase of wealth, the building of big castles, and the emphasis on court life, brought the nobles who became the

"patrons of the tapestry weavers". (85, vol. 26, p.255) The workshops, now mostly independent of the church, were organized in guilds. Paris was probably first to start with the organized guilds in the thirteenth century. (85, vol. 26, p.255)

During the fourteenth century there were three main tapestry centers in Europe: Arras (Flanders), Paris (France), and the lesser one in London. (86, p.3) Flemish weavers were considered the best and other countries welcomed Flemish emigrant weavers in their countries.

The fifteenth century was known as the Golden Age of tapestry weaving (62, p.116), with the high-warp manufactory of Arras as the leading tapestry center. The words Arras and tapestry were even used synonymously. During the second half of the fifteenth century there was a slow decline of the Arras factory. A number of weavers emigrated, and other centers like Tournai and Brussels became important in the early sixteenth century. The latter "obtained a mastery which they held for over a century". (86, p.3)

In Paris the tapestry industry was practically dead the first half of the fifteenth century, but the sixteenth century brought a renaissance in the art of tapestry making in France. Weavers arrived from the Arras manufactories and some were also imported from

The Netherlands. (86, p.3)

Towards the end of the fifteenth century and especially in the sixteenth century Spain and Italy became known for tapestry weaving. Ferrara, Florence, and Sienna were the important centers in Italy and emigrants from the Arras factories settled there. (86, p.3 and 62, p.158) Germany had no large workshops and The Netherlands, Denmark, and Sweden never had very important industries. In the Scandinavian countries tapestry weaving was chiefly a domestic craft. (85, vol. 26, p.260) In the New World, the art of tapestry weaving spread from Peru to Central America and parts of North America, where primitive weaving was practiced among the different tribes of Indians.

The seventeenth century was important in tapestry history. Great royal manufactories were established in France and England. Mortlake in England was established in 1619; in France the Gobelins was founded in 1662 and Beauvais in 1663. The already existing Aubusson and Tours in France also became royal workshops. France now was unmistakably leading as far as tapestry weaving was concerned. During the seventeenth and eighteenth centuries magnificent tapestries were made on a large scale.

The French Revolution at the end of the eighteenth century, and unrest in general, brought about a decline in the art of tapestry making in the royal workshops and

elsewhere. Eugene Muntz described the situation as follows:

> On the one hand fashion, with its innovations and its inconsistency; and on the other, the loss of large fortunes, and the demand for cheapness, were the chief causes of a revolution which led to nothing less than the disappearance of the art of the weaver.

(62, p.353)

Oil paintings then took the place of tapestries, and the efforts of tapestry designers to imitate oil paintings only hastened the decline of tapestry weaving as an art.

Vandalism was general. In Milan young people at social meetings, amused themselves by unravelling the tapestries which took their ancestors years to make. (62, p.354)

In 1797 the market for tapestries in France was so dead that authorities decided it would pay better to burn the tapestries containing gold and silver threads, than to sell them. Many magnificent tapestries were destroyed in this way. (40, p.16)

Since early in the twentieth century attempts have been made to revive the tapestry art. Jean Lurcat of France, followed by others, has been active since the 1930's in this respect. The great French Tapestry Exhibition of 1947 shows that there is already an impressive group of contemporary French tapestries. (85, vol. 26, p.259)

COUNTRIES AND PERIODS OF IMPORTANCE IN THE DEVELOPMENT OF THE TAPESTRY TECHNIQUE

CHAPTER V

EARLY CIVILIZATIONS

Ancient Egypt

As far as tapestry weaving of the early period is concerned, Egyptian methods and designs dominated the Northern part of Africa, and spread even to Europe. Rare examples exist of tapestry decorations made since the fifteenth century before Christ, but examples of tapestries made in the Christian era are rather numerous.

There are differences of opinion as to whether the real tapestry technique was used in making the tapestry decorations in the period before the birth of Christ. Some authorities stated that the pieces were not woven, as in real tapestries, but actually darned in, following an embroidery technique in applying the decoration on the linen background. (55, p.7 and 29, p.735)

There is however no doubt that the real tapestry technique was used in the products of the Egyptian Christians, generally known as the Copts. In the Coptic period the tapestry technique was also mainly used as garment decoration. (55, p.91) The garments were found in the graves of the Copts, and they were made, according to authorities, since the second century in the Christian

era. Pieces made as late as the ninth century were also discovered. With the exception of one silk piece (an influence from the Near East), most pieces were made of linen warp and woolen weft. (55, p.91) The silk piece which was made before the eighth century, is preserved in the Museum of the Gobelins. (31, p.2) Since the sixth century series of larger scale tapestries were made as well. (5, vol. 12, p.10)

The tunic tapestry decorations were either applied or interwoven. The rest of the garment was usually in a plain weave linen. Heavy woolen threads were then used for the decorative part, which gave an embroidered effect on the garment. The woolen weft was not carried from selvage to selvage, but only to form the decoration. This method is named "Inlaid weaving". (55, p.90-92) The technique is practically the same as that used at the height of the tapestry art in Europe in the fifteenth century. The methods used to join two color areas were mostly either the slit technique or diagonal dovetailing. (See Plates IIA and IVC) While the slits were usually left open, some were sewn together. In some cases a technique, later known as "hatching", was used. Alternate shots of the natural color linen and of wool were used, which produced a shaded background. (5, p.8)

Among early Egyptian weavings of 960 B.C., 300 B.C.,

and of the early Coptic period, rare examples of a technique similar to the later Soumak and Snärjvav techniques of the Near East and Scandinavia, respectively, were found. The technique was more generally practiced in the latter areas and is described later in this text under Near East tapestries.

The inlay technique with its brocaded appearance, so commonly used in the Scandinavian countries since the Middle Ages, can also be traced back to the Coptic period. Textiles showing a strong resemblance to the later Dukagång, Halvkrabba, and Krabbasnår of Scandinavia, were probably made by the Copts in the period between the fifth and the tenth centuries A.D. (97, p. 7, 31, 34, 35) These inlay techniques, not considered true tapestries, are described later under Scandinavian and Peasant tapestries, as they are typical of Scandinavian weaving.

Information on Coptic looms is non-existent, but there is little doubt that they were the same upright types used by the earlier Egyptians (8, p.31 and 31, p.6)--thus high-warp looms.

Various geometrical designs, such as the swastika and the running scroll were used, as well as rather schematic animal and human figures. Characteristic were the portraits with large eyes and a shadow effect around the eyes. The artistic quality of the designs is

remarkable but a general decline is noticeable in examples of the period after the sixth century. (31, p.4)

The linen warp yarns were used undyed. In the woolen weft the Copts used solid colors, probably from vegetable sources, cochineal, and indigo. About twelve colors were used, and seem very durable because no color changes are noticeable in comparing the two sides of the tapestry. (31, p. 3, 7, 8)

The Coptic tapestries, by some described as primitive, really have a remarkable artistic quality and show outstanding workmanship. At present these tapestries are studied carefully by weavers and in many cases act as inspiration for contemporary tapestries.

Ancient Peru

There are surprising similarities between ancient Peruvian and Coptic tapestries. They were made about the same period of time, although the period of tapestry making in Peru is more uncertain. Archaeologists have found that as far back as 8000 B.C., the higher valleys were inhabited. (20, vol. 12, p.4) Coastal areas, more specifically the Supe and Ancon regions north of the Port of Callao, were estimated to be inhabited during the first millennium before the birth of Christ. Tapestry fragments were found in the sandy soil of the burial

grounds of these areas, but the actual date when these tapestries were made is uncertain. (105, p. 3, 14, 163) The main weaving period of the Peruvians was apparently only since the Inca Empire was founded, about 1000 A.D. (55, p.100)

Although the Peruvians were cut off from the rest of the world, they used, as far as tapestries are concerned, basically the same technique. Like the Egyptians, they also interwove pictorial tapestry decorations into their tunics. (55, p.101)

They used the basic tapestry technique, mostly with cotton warp yarns and woolen wefts[10]. Among others, the Kilim technique was practiced (105, p.89) and, to eliminate the forming of slits, various methods were used. In the first place, practically every design showed a diagonal, and slightly terrazed line. This method still allowed slits to form, but they were small and inconspicuous. Another method was to pass a fine weft thread every three to four rows from selvage to selvage. This thread was practically invisible, but kept the structure of the fabric firm. (20, vol. 12, p.13) Eccentric weaving (see Plate IIB and IVA) was another method, used in rare cases.

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[10] The local cotton in the natural white and brown colors was used, and the wool of the llama, alpaca, and vicuna of Peru.

A separate yarn was used, not only to outline the motif (20, vol. 12, p.11), but also to fill up the slits left by the Kilim method. (105, p.89) This yarn was darned in according to the direction of the slit, straight or diagonal, but often zigzag to cover a few weft yarns. The latter really resembles single weft interlocking or dovetailing, according to the method used. See Plate IB and A.

Tapestries, in which a loop-making technique was used to simulate for example the fleece of an animal, were not uncommon. It is Raoul d'Harcourt's meaning that the loops were formed by wrapping the weft thread around a rod between every few warps, before reinsertion in the warp. In this way the uncut pile, a Turkish towel effect, was formed. (20, vol. 12, p.13-15)

To produce decorative patterns they often combined tapestry weaving with other types such as gauze weave. (20, vol. 12, p.13) This could have been the original inspiration for contemporary tapestries in which an open weave is so often combined with the real tapestry weave.

The backstrap loom, a high-warp type, described on page 14, was used by the early Peruvians. The same loom is still used by certain tribes of South America, Central America and Mexico.

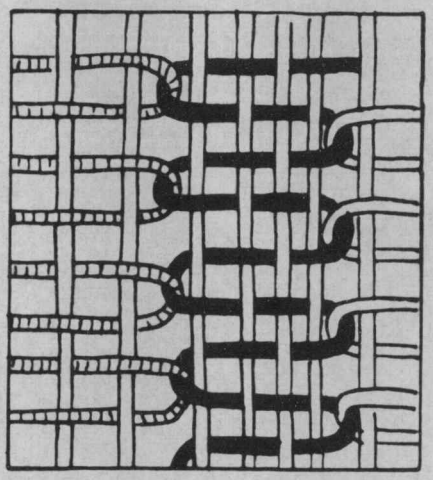
In their designs, birds, fishes, cats, and other animals, as well as human figures and various typical

motifs such as the elongated S were generally used. The designs were all stylized with the typical diagonal and terrazed outlines (55, p.102) to facilitate the weaving technique.

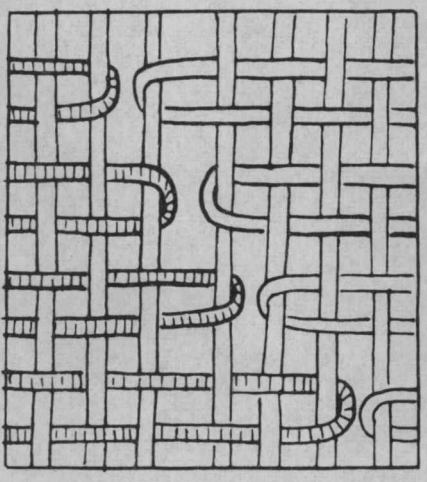
As sources for dyes, vegetable material such as the bark of the pepper tree for yellow and indigo for blue, was used, as well as other sources like cochineal for red and black. Yarns in the natural color of the fiber, were used commonly. (20, vol. 12, p.7-9)

Peruvian tapestry weaving survived until the seventeenth and eighteenth centuries, although European influences were noticeable in the later period. (20, vol. 12, p.13)

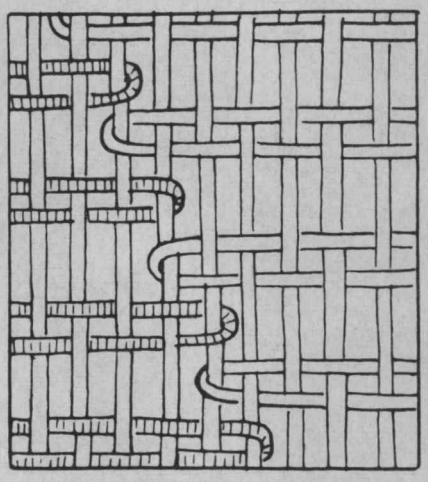
Plate IV



A. Eccentric Weaving Variation (resembling weft interlocking).

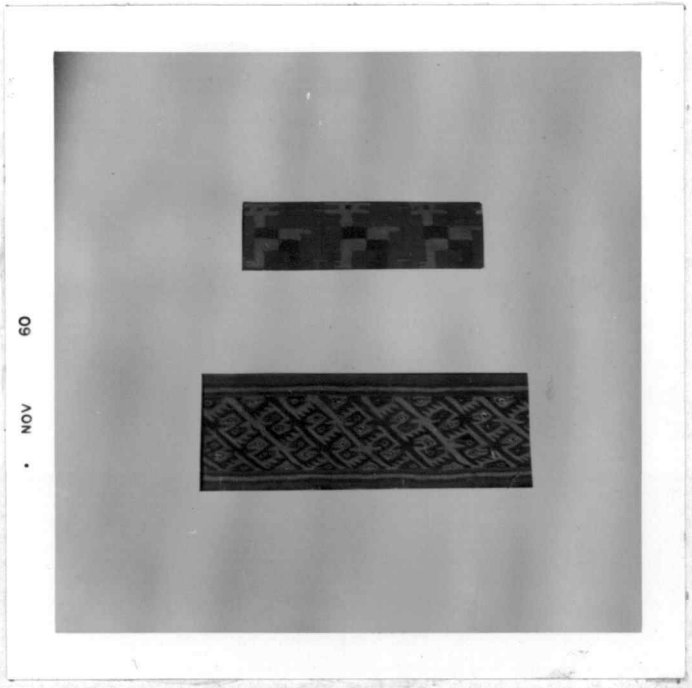


B. Diagonal Slit.



C. Diagonal Dovetailing.

Plate V



EARLY PERUVIAN TAPESTRY FRAGMENTS,
from the historic textile collection,
Department of Clothing and Textiles,
Oregon State College

Ancient Greece

There is no doubt that the tapestry technique was used among the ancient Greeks. It was used for the making of robes, wall coverings, rugs, and decorations to be used in palaces, theatres, and temples. There is evidence that decorative tapestries were used in the Parthenon. (62, p.20 and 93, p.163)

Many literary records as well as the picture on the famous vase of Penelope, refer to Penelope's loom[11]. (40, p.295-296) It was an upright loom, the weaving of which started from the top. Weights were used to keep the warp straight (weighted warp). It is dated about 400 B.C. (93, p.162)

Roman Empire

Before Christ, Roman tapestries were only used in the temples of gods; but later they were also used in palaces and private dwellings. (57, p.30) The tapestries served the purpose of wall decorations in the place of paintings. There is also evidence that a reed, a shuttle,

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[11] Penelope was said to have been working daily on her picture tapestry, but unravelled it secretly each night because its completion would have forced her to keep her promise to choose from among her suitors a successor for her long-lost husband, Ulysses.

and a comb were used with the loom, thus all the basic essentials as used today. Generally a combination of woolen and gold thread was used. (62, p.30-34)

Near East

The Near East has always been famous for rugs and carpets, the technique varying from pile rugs to flat-surfaced rugs. The first rug-making industry of the Near East probably was in Babylon. Pieces found in areas near the Black Sea were made about 400 B.C. (6, p.154) As far as is known, the earliest rugs were all flat-surfaced, and among others the tapestry technique was used. It is generally accepted that the rugs which the Queen of Sheba presented to Solomon were tapestries. (6, p.151-152) In these early tapestry rugs the Kilim weaving technique, described on pages 18 and 19, was used. (6, p.154-166)

The East, the land of silk, had a noticeable influence on tapestries. A group of pure silk tapestry carpets was made in Persia during the sixteenth and seventeenth centuries. The designs were two-dimensional in character; mainly a combination of floral vines and animals with no light or shade effect. (74, p.7-8) The contrasting shades and colors, sharpened by the typical dark outlines made them very effective. The warp was covered completely by the weft--thus a basic tapestry technique. Dovetailing

was used to join colors--by some authorities described as a variation on dovetailing because the black outline weft was dovetailed over two warp threads between the two main color areas. It can be likened with the variation on the eccentric weaving used in Peru. (84, p.798)

Two examples of twill tapestry weaving done in Persia, exist. The weft thread goes over two or more and under one or more warp threads, contrary to true tapestry where the sequence is always over one, under one. Double weft interlocking was used at the edge of the color areas. (74, p. 43 and 84, p.799) See Plate VI A.

Another technique, often classified as a tapestry technique, was used in the Near East[12]. It is called Soumak weaving and can be likened with stem stitch. The weft thread goes regularly over four under two to give a diagonal effect as shown in Plate VI B. In order to keep the texture firm a row of plain weave is used between each two rows of Soumak stitches. (6, p.169) On this basis it should not be called a tapestry technique although the product resembles a tapestry rug.

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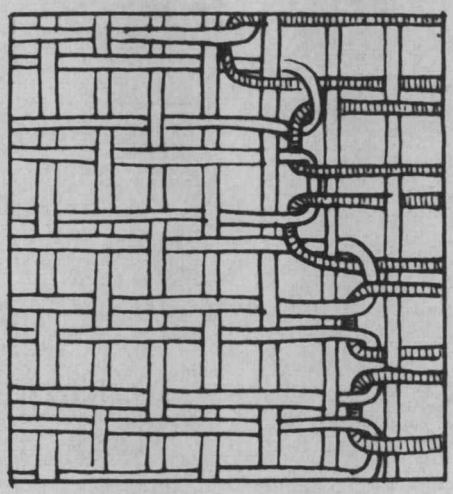
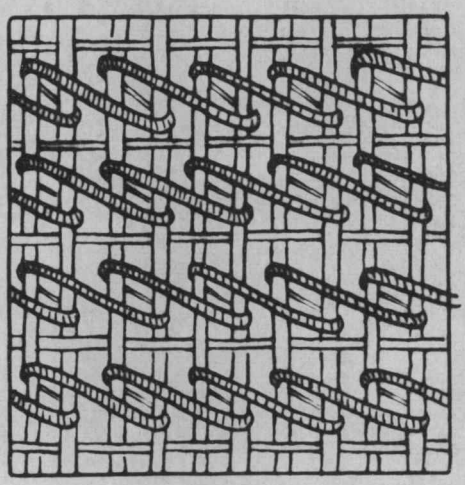
[12]It was originally done in Soumak, a province near Baku.

Plate VI



A. Double Weft interlocking in tapestry twill.



B. Soumak Weaving

A KILIM RUG
from the historic textile collection,
Department of Clothing and Textiles,
Oregon State College

A SOUMAK SADDLE BAG,
from the historic textile collection,
Department of Clothing and Textiles,
Oregon State College

Northern Africa

Information regarding the origin of tapestry weaving in most parts of Africa is scarce. In the North African states such as Morocco, Algeria and Tunisia, early tapestry weaving showed Arab origin and Mohammedan influence from the Near East and Egypt. (30, p. 739) Both in color and texture there were striking similarities, for example between Egyptian and Moroccan tapestries. (29, p.735)

The main tapestry products of the Northern Africa states were tentcloth, rugs, blankets, saddle blankets and saddle bags. Fibers such as rushes, flax, cotton, silk, goat hair, camel hair, grass, and palm fiber were used, all dyed with natural dyes. A crude type of upright loom was used for the weaving. In the early periods the Near East and Egyptian design motifs were dominant, but later a combination of stripes and geometric designs became popular. A smooth type rug and a striped blanket were among the most characteristic woven pieces. For the Tunisian rugs for example, a central motif, often hexagon shaped, and four corner motifs were typical. (30, p.738-760) In most of these countries, traditional weaving is still practiced today.

CHAPTER VI

EUROPEAN TAPESTRIES
(France, Flanders, and England)

During the Eastern Roman Empire, especially the period between the ninth and the fourteenth centuries, influences from the East were dominant in Europe. The silk weaving industry was most important. Rich brocaded and damasked fabrics have been made in Byzantium (later Istanbul), as well as in Italy since the twelfth century. Some of them thus classified were actually done in an embroidery technique. During this early medieval period also the high-warp tapestry technique was used in Persia and neighboring states.

Italian, French, English, and German pictorial pieces from this early period were either brocaded or embroidered. In fact, the embroidery technique was well known and widely used all over Europe. (62, p.54-66)

With the use of the brocade and embroidery techniques fine details were possible in designs on fabrics. From these developed the European high-warp tapestries with their characteristic fineness of texture and weave. It is not clearly proved whether the first European pictorial hangings were woven or embroidered, or even where the first were made. (35, p.138) Tapestry is said to have been

used widely in Europe in the thirteenth century, but it is not clear whether the records properly distinguished between embroideries, brocades, and tapestries. (62, p.82-88)

Real tapestry history began in the fourteenth century. In a general classification for tapestries three main periods are mentioned. The first is the Gothic era with the best tapestries made in the fifteenth century; the second the Renaissance tapestry group, many tapestries of which resemble paintings. Of the last group, the Baroque and Rococo tapestries of France, the most important examples were made during the seventeenth and eighteenth centuries. (55, p.204-205)

In the Gothic period Arras was the main tapestry manufacturing center in the fourteenth century[13], with Brussels leading since the second half of the fifteenth century. The origin of these Flemish cities was really due to their textile and tapestry industries, (34, p.472) with the weaving centers controlled by weavers' guilds. In fact, the people of those centers had but two interests in life; their church and their weaving.

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[13] Arras was captured by Louis XI of France in 1477. This caused expulsion of many weavers, and the workshops never did really recover.

Tapestries were mainly used as wall hangings, where they served as insulation and to cover the bare stone walls. Because of the important part the church played in the life of the weavers, and because many of the tapestries were made as church decoration, the religious element was dominant in their designs. Soon the decorative possibilities of tapestries were noticed by the rich and led to the adaptation of secular designs as well. For example, during the reign of Charles V (1364-1380) tapestries, usually with historic scenes, were woven.

In the early Gothic tapestries every inch of space was filled with design. They were woven without borders. The true Gothic tapestries were pictorial with typical and intricate foliage backgrounds. They all had a flat appearance with very little perspective and a high skyline. The famous "mille fleur" tapestries of the fifteenth century are typical examples. Conventionalized foliage and flowers, worked out in the finest detail, cover the entire background, and all have narrow borders. The slender figures of the main design all show a strong vertical line. (55, p.205-207) The most famous of these are "The Lady with the Unicorn"[14] and the

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[14] These tapestries were originally in France in the Chateau of Verteuil, were used to protect potatoes from frost during the revolution, and are now in The Cloisters Museum in New York.

"Cluny tapestries"[15] series made in the later part of the fifteenth century. The latter is a romantic and allegorical interpretation of the five senses. The Le Viste family arms appears on them and they are believed to have been made as a wedding gift for the Lady Claude Le Viste of Lyons on request of her bridegroom. (50, p.85-92) The Unicorn tapestries' origin is unknown, though they were made either by French or Flemish weavers. They tell the story of the hunt of the unicorn[16], a noble animal which supposedly only could have been subdued by a virgin. Hunting the unicorn was the sport of princes, and a virgin was used as a sort of decoy. (91, p.1-4)

The later Gothic tapestries were highly pictorial, with a very fine texture; more colors were used, and the use of golden thread in the tapestries became general. (55, p.207)

With the entrance of the sixteenth century came the next important period, the Italian Renaissance, which had a dominating influence all over Europe. Flemish craftsmen were still considered the best, but Italian

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[15] In the Cluny Museum in Paris since 1882.

[16] The unicorn motif shows a white animal with the body of a horse, head of a deer, feet of an elephant, tail of a lion, and one black horn.

cartoons were used, mainly those of Raphael, for example the famous "Acts of the Apostles" series made for Pope Leo X. Fine details were no longer important. "The new trend was toward bold patterns with sweeping lines, effective as paintings rather than as examples of the fine art of weaving". (55, p.209) Foliage was larger and more realistic and color shading gave the effect of dark and light. The figures were grouped, open spaces left in the background, and there was more emphasis on the horizontal lines. "Romantic and religious scenes gave way to classical subjects." (55, p.209) The wider borders had subscenes and usually a cartouche[17] at the top. (55, p.208-209)

While Italy had the monopoly of design, Brussels had the main factories. (62, p.181) However, there came a decline of the Brussels' workshops in the second half of the sixteenth century, and France became important. (62, p.210-212) The factories of Beauvais, Aubusson, and the Gobelins were the main producers in France, and tapestry making in this country reached its zenith in the seventeenth and eighteenth centuries. (55, p.211)

The development and history of the Gobelins

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[17] A cartouche is an elaborate, scrolled frame around a tablet or coat-of-arms.

manufactory in Paris reflects the development of tapestry weaving in Europe in general since the French Renaissance, through the Baroque and Rococo periods until the general decline of tapestry weaving at the end of the eighteenth century.

Henry IV recognized the economic importance of a tapestry industry for France; and towards the end of the sixteenth century he invited two Flemish weavers to set up sixty looms in Paris. They began training their French apprentices and in 1630 established themselves as "The Gobelins"[18]. (13, p.107) The official foundation by Louis XIV was in 1662, when the Gobelins became a royal manufactory. Colbert, the Minister of State and head of the army, was appointed head of the Gobelins with the artist Lebrun as superintendent. (62, p.250-264) The main purpose of the Gobelins was to serve the court and decorate the palaces. So important was this manufactory that the word "Gobelins" later replaced "Arras" as a synonym for tapestry.

During the early period Gobelin tapestries were noticeable for their close design. (62, p.256) Even the

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[18] The name Gobelins derived from the brothers Gobelin who came to Paris in the fifteenth century to produce a special scarlet dye. They used the same building, the Hotel des Gobelins.

borders became more and more decorative.

The period directly after the official establishment (1662-1684) probably was the height of the Baroque as far as tapestries are concerned. Typical of the Baroque, the designs expressed "force rather than refinement." (13, p.110) Lebrun and the oil painter Rubens were responsible for the most important designs of that period.

Tapestries were made in series; for example, the "History of the King" series which consisted of forty pieces[19]. All the scenes were a glorification of Louis XIV. The original set was done on high-warp looms. The borders were floral and fruit designs and had a strong classic feeling. (13, p.112-114) The colors used were low in number but strong and helped to add force to the designs. It took an average of five years to weave one piece.

After the death of Colbert in the late fifteenth century he was succeeded by Louvois. During the period that followed, mainly Italian (Raphael) designs were used in France. The tapestries showed the strong classic influence present since the Renaissance. This was an uncertain period, and high military expenditure caused

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[19] Actually forty-three because three pieces were added later.

prohibitions with regard to the tapestry industry. The Gobelins factory was even inactive for four years. Then came a period of new success. (13, p.118-123)

With the eighteenth century came the Rococo with its graceful curves and lightness of design. Houses and rooms became smaller, and therefore, smaller tapestries were made. (62, p.308-309) The series "Elements and Seasons" designed by the artists Watteau and Audran, for example, were small tapestries, the dimension of a doorway. The set consisted of eight pieces, four typifying the seasons and four the elements. (13, p.126) In general wide borders came into vogue (55, p.212), often leaving only a small part for the actual design. The Rococo tapestries showed vivid colors, graceful compositions, and lines softened by light and shade effects. (36, p.151)

The eighteenth century also brought the height of the Chinoiserie tapestries. "Chinoiserie" was descriptive of the designs where oriental scenes and motifs were used in a European setting. Even the borders of this group showed Chinese designs similar to those on oriental porcelain cups and tea-pots. (21, p.388)

Slowly but surely, both the designers and the weavers tried to invade the art of painting in an effort to portray the spirit of the time. This was one of the

main reasons for the gradual decline of the tapestry art towards the end of the eighteenth century. During the last quarter of the century tapestries were mainly used as chair and sofa upholstery or as screens. (13, p.135)

Because the manufactories mainly served the court, the tapestry industry was always closely influenced by the ups and downs of the French court. (102, p.2542) The final blow for the art of tapestry weaving, therefore, came simultaneously with the French revolution.

During the nineteenth and twentieth centuries the Gobelins factory was still producing tapestries on a small scale, (13, p.252) but their factory is today mainly a museum.

Apart from the Gobelins there were other workshops in France, of which Beauvais and Aubusson were the most important. Both were declared royal manufactories shortly after the Gobelins. Beauvais specialized in weaving small pieces for furniture, while Aubusson mostly made huge wall hangings and carpets. (55, p.213-214)

The tapestry industry in England developed alongside those in Flanders and France. It is difficult to trace the origin of tapestry weaving in England, but it is certain that there were tapissiers at work during the reign of Henry III (1216-1272). (42, p.1) As in the rest of Europe the tapestries were used as wall hangings, mostly in

Plate VIII

FRENCH TAPESTRY (part of a Portiere), 200 years old,
from the historic textile collection,
Department of Clothing and Textiles,
Oregon State College

ENGLISH WOOLEN TAPESTRY
from the historic textile collection,
Department of Clothing and Textiles,
Oregon State College

the hall or so-called "common apartment" in the Anglo-Saxon homestead. They were also used in churches, for example to be hung about the choir.

Flemish immigrants arrived in England during the second half of the fifteenth century. That was one reason why the general development corresponded with that on the continent throughout the Middle Ages and Renaissance. (86, p.5-35, 46-48) The products were, however, still inferior to the high quality of continental Flemish products of that time.

An important workshop of the late sixteenth and early seventeenth century, that of William Sheldon who was the first extensive tapissier in England, was later absorbed in the royal workshops at Mortlake. (86, p.55-64)

The Mortlake manufactory, near London, founded in 1619 (78, p.167) produced tapestries of excellent workmanship. According to W. G. Thomson they surpassed that of France and Italy in the seventeenth century. Flemish weavers were imported and high warp looms were used. The Mortlake factory flourished under the leadership of Sir Francis Crane, but after his death in 1636 and because of financial problems, it could not compete in the long run with manufactories on the continent. Mortlake lost its importance towards the end of the seventeenth century (86, p.66-108) and closed in 1703. (78, p.169)

No attempt was made to preserve pure English character (78, p.167) but

> English taste seems to have preferred spacer (sic), more open landscapes, smaller figures to match the smaller dimensions of the tapestries, and above all quieter and more restrained borders. (21, p.388)

During the eighteenth century various smaller tapestry weaving establishments existed. In general they showed small figures with landscapes or architectural backgrounds, framed in a border of fruit, flowers, and birds. (86, p.148-150) As in Europe, Chinoiserie was typical. (21, p.388)

European Tapestry Techniques and Characteristics

Since the fourteenth century the terms high-warp and low-warp have been used to describe both the looms and technique used in tapestry weaving. These looms were used earlier but were not named as such. (62, p.93) In many tapestry centers like Flanders both loom types were used. The Gobelins and other Paris studios were, however, known for their high-warp looms; while Beauvais and Aubusson were known for low-warp. (55, p.216) In either case the other type was used to some extent, but not generally.

When tapestry weaving first started in England a loom, much like the ancient Greek high-warp type, with weighted warp was used. (86, p.5) Mortlake factories

used both basic types. (86, p.67-68)

Since the Middle Ages the hard-twist woolen yarn has been traditional for tapestry weaving. During those early periods the finest wools were obtainable from England and Spain, and they were the only ones allowed to be used in English tapestries. (86, p.7-9) The earliest tapestries showed woolen warp threads, but after cotton was introduced in Europe, cotton warp was used. (57, p.422)

Beginning in the fifteenth century gold and silver threads were interwoven in some tapestries, and superb light effects were achieved in this way. These threads were used increasingly during the next centuries. (62, p.122-127) Since the sixteenth century silk was also used in combination with wool. (86, p.50) It was included mainly in flesh tones in the faces of the figures. (55, p.219)

Tapestries made since the Middle Ages differ from the earlier pieces in that the piece is turned after weaving; and thus the warp threads run horizontally in the finished product, giving a horizontal ribbed effect. This is done mainly because of the size of the tapestries.

In the early medieval periods the number of colors was limited but research laboratories which were established since the seventeenth century, led to an increased number of colors, improvements, and new processes.

(36, p.150) Shades and tints, as well as blended threads were also used to obtain new colors. (94, p.158)

Authorities can with relative ease distinguish between tapestries of the various periods. Not only is the type of border an indication, but the colors used are also typical. Gothic tapestries excel in reds, gold thread is used abundantly, and they have narrow borders or none, while whites and golden yellows are typical of the wide bordered Renaissance tapestries. The dominant color used for the Baroque tapestries is blue and they show heavy shadow-and-light bands just inside the wide borders. These wide borders are still seen in the Rococo tapestries, and rose is a favorite color. Tapestries from the later part of the eighteenth century show narrow borders as originally used in the Gothic tapestries. (41, p.2-4) Apart from the colors and the types of border used, the general character of the tapestries is another indication as described earlier in the text.

What is said for tapestry weaving in general was practiced very effectively by the weavers of the Middle Ages and Renaissance:

> The tapestry-weaver's art does not by any means consist solely in transferring the colours (sic) of the cartoon on his tapestry: he must know that the colours (sic) of the wool and silk have their own artistic qualities, that the colours (sic) of the cartoon may produce an entirely different effect when reproduced in thread; in a word, his task is not to copy, but to recreate. (86, p.157)

The technique used then is today considered the standard tapestry technique as described in Chapter III. Tapestry textures were extremely fine. The Mortlake tapestries, for example, had about 23 warp threads and 50 wefts to an inch. (86, p.71)

In tapestries made in the Gothic period, many floating threads show on the wrong side. A thread floated from where it was used to where it was needed again a few inches further. (55, p.218)

The hatching technique (hachure) is said to have been used since the twelfth century (48, p.22) and was developed in Flanders. From the fourteenth century and up to the sixteenth century it was used all over Europe where it was the essence of tapestry design. With the limited number of colors then available, this method served as a transition, to merge colors, and to give a shadow effect[20]. (48, p.22 and 94, p.158)

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[20]Sources are not clear as to whether weft interlocking was used where colors joined in hatching. From descriptions the conclusion could be drawn that this was the case.

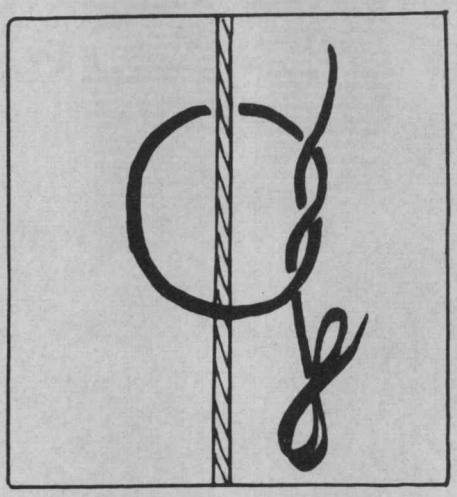
Gradually throughout the seventeenth and eighteenth centuries hatching was abandoned and replaced by the oil painting effect. To obtain the brush-stroke effect of oil paintings, hatching could not be used; a sharper line was necessary. This brought about the use of the slit (Kilim) technique. The latter was not only less durable, but was often, when overdone, also visually displeasing. (48, p. 22) However, it served to create a shadow effect, and for that reason slits were often left open or not sewn together too tightly. An overcasting stitch, forming plainly visible stitches on the right side, was traditional. (7, p.441-445)

Of the other traditional techniques, dovetailing was used in Europe up to the sixteenth century (74, p.8); double weft interlocking was introduced in the Gobelins factory (84, p.798) as well as in Beauvais (97, p.12) in the eighteenth century; and single weft interlocking was probably used earlier--beginning with the seventeenth century. A combination of techniques in one tapestry was not uncommon; a French tapestry examined by the author show slits, diagonal slits and double weft interlocking, while an English tapestry shows slits, dovetailing and single weft interlocking all in one piece.

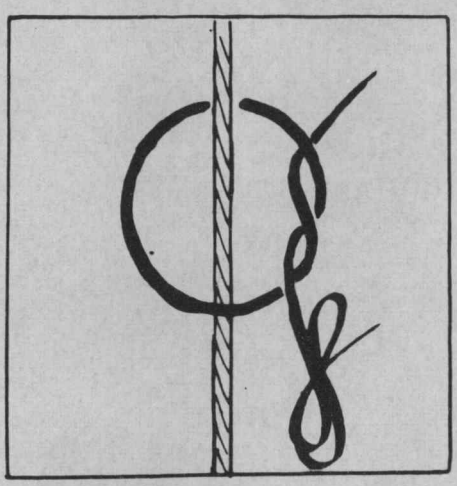
Mary E. Black describes a Gobelin technique, called the "Swedish knot". A very firm tapestry is obtained

by knotting the weft thread around each warp thread as illustrated in Figure IX. The knotting continues row after row across the whole width of the fabric. Where two colors join, warp interlocking is used (dovetailing). The knots are all tied in the same way, and are reversed every second row when working in the opposite direction, to get uniformity. This is a very slow method. (7, p.427-431)

Plate IX



"Swedish Knot"



"Swedish Knot"
reversed.

CHAPTER VII

SCANDINAVIAN AND PEASANT TAPESTRY ART

Tapestries made by the early Scandinavian weavers are the best examples of peasant art in Europe.

Some consider peasant art as the work of "'illiterates' made for individual use, and constituting merely the most primitive link in social development." Others see it as coarse imitations of the "higher styles of art." (52, p.2399) It is however true that tapestry weaving in Europe started among the peasant weavers and it was mainly those "illiterates" who developed the techniques. Peasant art also proves people's desire to be creative, to make life more interesting, and to enjoy art.

Dr. Haavard Rostrup's[21] interpretation of Norwegian tapestries is that there is no reason to look disparagingly at them.

> In their own way they are perfect examples of a splendid form of expression in textiles; in their compactness, their severity, and their simplicity is their strength, and it is interesting to compare them with the most recent products of modern tapestry making, as these latter is (sic) based on a return to the simplicity of pure lines of the Middle Ages. (77, vol. 44, p.160)

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[21] Rostrup, Dr. Haavard, Inspector of the Danish Museum of Industrial Arts in Copenhagen.

Tapestry weaving was practiced in most countries of Europe during early periods. The Scandinavian countries (Denmark, Sweden, and Norway), the Balkans, Finland, Poland, and Germany were probably the countries where peasant tapestry art had more typical characteristics and lasted longer than in others. (84, p.2398-2436) In most of these countries the peasant art had remained untouched until about the last part of the nineteenth century.

Tapestries used in the peasant homes were functional and they filled a definite need, for example to keep the room warm and cosy or to cover the seat of a chair. Peasant carpets, like those made in Norway and Poland, were seldom used on the floor, but as bed, table, or chest covers. (92, p.826-827)

The weavers were mostly women; but every farmer's wife was not a weaver. "The real art weaving was done by specialists, living at certain farms from where their products were spread far around." (77, vol. 44, p.162)

It is difficult to trace the development of peasant weaving or even the origin of their designs. They had no Rubens or Raphael to provide them with cartoons. Their designs and techniques were used many generations without any literary records. (53, p.2433) The traditional motifs were repeated many times, probably changing a little with each repetition. (47, vol. 2, p.490)

The period when peasant tapestries were first made in Scandinavia is impossible to trace. Authorities can only judge by still existing tapestries or the rare written records. A tapestry piece was found in a grave near Birka, which proves that the low warp technique (Rölakan) was used in Sweden as early as the ninth century. (37, p.3180) The Norwegian tapestries are represented by a few pieces such as the Oseberg weavings of the Viking Age and the Baldishol tapestry of the Norman era--therefore about the twelfth century. (47, vol. 2, p.487) As far as Denmark is concerned, a letter from the Duke of Bavaria, dated 1604 mentioned the arrival of twenty-six Flemish tapestry weavers a little earlier. They probably went to Denmark on request of King Christian IV (1588-1648). (62, p.306) This probably was the introduction of the first high-warp looms in Scandinavia. Whenever the period of origin might have been, the height of peasant tapestry weaving was about the second half of the sixteenth century.

The designs used were all very simple. Geometric figures combined with motifs drawn from nature and everyday life were common. Figures were flat and crude. Many designs showed a Christian character like horsemen defending a church, and wild animals representing the forces of evil attacking the church. (22, vol. 6, p.11-14 and

28, vol. 16, p.21) Many motifs probably originated in the dreams of the weaver, in myths, or in legends. (37, p.3175)

As examples of peasant tapestry art the following countries are outstanding:

Sweden and Denmark

Scania, the southern province of Sweden, produced the majority of the still existing peasant textiles, and still has the highest developed peasant culture. Halland and Blekinge were the other two important areas for weaving. These three provinces were under Danish rule until 1658. Up to 1850 the Swedish peasant art had remained untouched by outside influences; then industrialism caused an enervation in the peasant art. (37, p.3166-3168)

Still existing examples of Scania textiles reveal a heaviness typical of the Baroque style, while those of Blekinge have the lightness of the Rococo. Textiles from the northern parts show dull tones as though the forests had a depressing influence on the inhabitants. (73, p.3168) In general the textiles reveal the conservation of the Swedish peasants.

Investigators found that religion, myths, and legends inspired some designs. Foreign influences were however also present. Designs they probably saw in

convent schools and royal workshops, were simplified and actually "grew into a typical peasant art." Rare examples of Byzantine designs like the rondell, the double-headed eagle, and the tree of life; Gothic designs; and Renaissance silk designs like the pomegranate proved that other influences found their way to Sweden. (37, p.3175-3178) One theory is that the early inhabitants reached the East via Russia by way of the great Russian rivers like the Volga, and in that way oriental textiles reached Scandinavia. (22, p.14-16) These rare examples were however not typical among the peasants. More common were the flat two-dimensional figures (always alike), and geometric designs, with the Christian character almost always recognizable. (22, vol. 6, p.11-14) In fact, their techniques lend themselves more to stylized and geometric motifs than to intricate designs.

Wool is considered the oldest raw material used in Sweden and plant dyes like licheu, heather, and the bark, leaves and berries of different trees, were used. Hydrous sulfates of iron and copper as a dyeing matter, as well as alum as a mordant, were probably known in Scandinavian countries as early as the Middle Ages. (37, p.3187-3190)

Finland

The tapestry technique in Finland developed alongside with those of Scandinavia and was closely influenced by the latter. Finland has always been known for their rya (ryijy) rugs and crafts in general but, except for the exceptional beauty of design, no characteristic technique was developed for tapestries.

Norway

As pointed out, Norwegian tapestry weaving can be traced back to the twelfth century. During the fifteenth and sixteenth centuries followed a period of national decline, but the second half of the sixteenth century brought about a renaissance in the tapestry art in Norway. (47, vol. 2, p.486-487) The first stages of this renaissance must be credited to immigrant weavers from North Germany and Schleswig-Holstein. They taught local weavers, and the outcome was a combination of the new renaissance art with the old medieval Norman style and techniques of the native people, and thus a new and independent style developed. The most outstanding examples originated in the northern part of the valley of Gudbrandsdal; probably because of the high cultural level there. (77, vol. 44, p.160)

Dr. Thor B. Kielland[22] summarized it as follows:

> The outstanding achievement of these native weaving sheds was their ability to absorb Renaissance impulses without abandoning the essential two-dimensional character of true tapestry art. (47, vol. 2, p.489)

In the past these tapestries were often dismissed as being crude and clumsy efforts of peasants, but critics did not keep in mind that this clumsiness was due to the use of true tapestry technique. (47, vol. 2, p.489)

Most of these tapestries were based on Bible stories, and themes from Norse sagas and folk tales. Typical were the stark figurative stylizations in rich, brilliant colors. (66, vol. 19, p.24) The women weavers had a special liking for moralistic motifs. The "Virgin tapestries"[23] are probably the most numerous and widely distributed series. The virgins were usually grouped in two rows; their figures are stylized and square-faced and stress the flat character of the weaving in a splendid manner. The red, blue, gold, and moss green colors, rich but subdued, are striking. Human figures seem to have been the most popular motifs, but flowers and animals are also used. (77, vol. 44, p.161-162)

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[22] Kielland, Dr. Thor B., Director of the Museum of Industrial Arts in Oslo.

[23] "The Wise and Foolish Virgins" of which 82 examples are known.

The Norwegians had the custom of draping the walls of their farm houses with tapestries on festive occasions. Apart from wall hangings, tapestries were used as cushion covers and bench covers. In the latter products the weavers were less restricted in their choice of motifs--motifs were not necessarily religious. (47, vol. 2, p.489-490)

Scandinavian Tapestry Techniques

The countries of Scandinavia and adjoining countries are geographically so close together that it is only natural that they would borrow from one another to some extent. This is what happened with tapestry techniques. A specific technique might have been typical of one of these countries, but its use usually was not limited to that country.

A variety of techniques were used, many of which cannot be classified as true tapestries. However, it shows how those skillful weavers had changed the technique to serve their purposes. Among those which qualify as true tapestries, Flamskvävnad (high-warp tapestries) and Rölakan (low-warp tapestries) are the main groups.

Flemish high-warp weavers were responsible for the introduction, in the sixteenth century, of pictorial tapestry work in the Scandinavian countries. This weaving

was at first only accepted by the nobility, the middle class, and the professional weavers, but later was adapted for the peasants' more conventionalized motifs and biblical scenes. Flamskvävnad (Flemish weaving), as it was called, was therefore really a matter of borrowing from another technique. (37, p.3180)

In Flamsk (Flemish weaving) the woolen weft threads were passed regularly over and under the linen warp as in the true tapestry technique, and a technique called "toothing" (or "stepping") was used to join two colors. One use of toothing was nothing else than the widely used dovetailing, but in a product of real toothing the choice of the word is very descriptive. A few consecutive rows of one color area (for example the one to the left) were woven before the same number of rows of the next area (to the right of the first area) were done, all ending around the same warp thread. This being done throughout the tapestry piece gave the characteristic stepping effect illustrated in Plate X A. (97, p.17-18) There are probably more interpretations, because it is also described as a matter of running the colors into each other in order to serve the same general purpose as hatching, but keeping a more distinct line. (83, vol. 5, p.11-13) This toothing technique was said to have been developed by Norwegian weavers (66, vol.19,p.487-489)

and the true toothing is clearly distinguishable in Norwegian tapestries of the sixteenth to the eighteenth centuries. Only in rare examples was weft interlocking used. (97, p.17)

In the above-mentioned Norwegian pictorial tapestries another characteristic technique was used. In this, the Billedvev (or Billedvevning) technique, the weft was not necessarily kept at right angles to the warp; it moved in places in order to shape certain design lines. The weaving was done on an upright loom and a fork was used to beat the threads in place. (65, p.25-26) Toothing or single weft interlocking was used where two colors joined.

The low warp tapestry technique, Rölakan, was generally used in Sweden (mainly in the Scania province) and in Norway. The original meaning of the word "Rölakan" refers to the use of the finished product--the covering of the wall at the back of a seat. (97, p.11) It is also known as Åklae (Aaklae) which means "cover", a name more commonly used in Norway. (7, p.408, 413) The Rölakan or Åklae technique is still widely used today, not only in Sweden and Norway, but also in Denmark and Finland. (65, p.26)

The name Rölakan[24] as well as the patterns on preserved tapestry pieces, points to its descent from the Middle Ages. There is however, a difference in opinion because the weft interlocking technique used is considered to have been used at a later time in Europe--since the seventeenth century. (97, p.11-12) However, a definite piece was found in a grave near Birka, which proves that the Rölakan technique was used in Scania as early as the ninth century. (37, p.3180)

Most Rölakan designs are based on squares, and to join color areas weft interlocking is used. Typical of Norwegian Rölakan or Åklae is the use of single weft interlocking (the interlocking is done while weaving left to right) and all ends are drawn into the fabric. This gives a firm, reversible fabric which was especially suitable for its original use where the housewife wanted a strong, warm fabric which would also lend color and beauty to the rather dark interiors. (1, p.20) See Plate XI.

Double weft interlocking which is more commonly used for Swedish (or Scanian) Rölakan, gives a nonreversible fabric, where the joints between two colors

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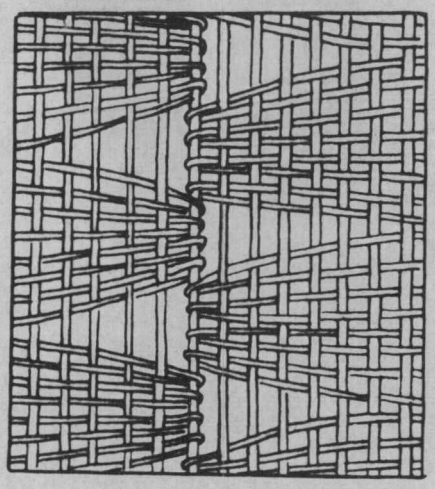
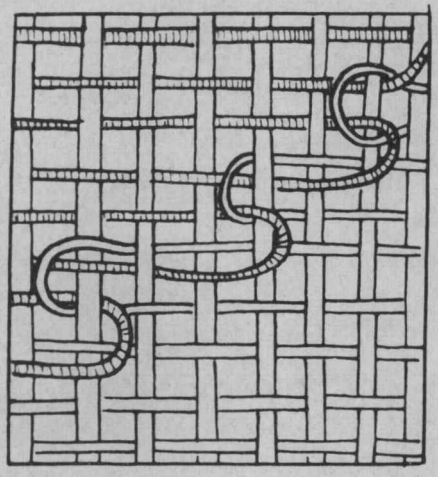
[24] The word "Rölakan" is derived from the old Swedish form Ryglakan.

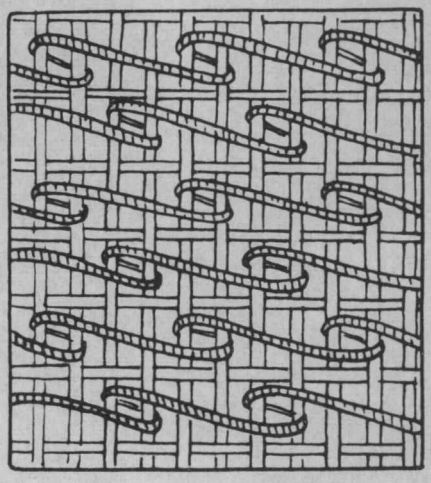
Plate X



A. Toothing.



B. Diagonal interlocking.



C. Snarjvav.

Plate XI

NORWEGIAN RÖLAKAN OR ÅKLAE and
HALVKRABBA or "PARTED DUKAGANG,"
from the textile collection
Department of Clothing and Textiles,
Oregon State College

are not as smooth as in the case of single weft interlocking. (18, p.186-187) See Plates I and XVI.

A Rölakan pattern is not always squared; often it is based on diagonal lines like the eight-pointed star, lightning Rölakan, and zigzag designs. (37, p.3180) The latter was probably inspired by Hungarian point embroidery commonly practiced at that time in Scandinavia and adjoining countries. For these types of designs diagonal interlocking is used; the weft regularly moves two warp threads to one side for each inlay and the actual interlocking is either single or double weft interlocking.

For Rölakan in general, weaving always starts from the lefthand warp thread and in the case of diagonal Rölakan an even number of threads is desirable for each color, because the weft always moves two threads to one side per row. (18, p.187-191) In the actual weaving process "butterflies" are preferred to shuttles because of the number of colors needed per row and the relative small color squares to be woven. The colors used in Rölakan were originally quite somber and dark, but more intense since the nineteenth century.

Snärjväv[25] is another well known type of weaving used in Sweden until the twelfth or thirteenth century

[25] Snärja means "to twine".

and in Iceland as late as the sixteenth century. It is an oriental technique, known in the Near East as Soumak weaving, which reached Scandinavia in the late Roman times, probably through imported oriental fabrics or through imported slaves who knew the technique. (37, p.3181) It has been proved that the same kind of technique was also used by the early Egyptians. (97, p.7)

The simple conventionalized and geometric Snärjväv designs were originally outlined in a contrasting color of the same technique. Basically the technique was the same as that used in the Near East, except that it gave more of the effect of a twill fabric and the stitches were generally longer. Woolen yarns were used for the pattern row and the technique was similar to an overcasting stitch as shown in Plate X C. Between each two pattern rows a row of plain weave in a thin woolen or linen thread was used to ensure a firm texture. (97, p.7) In some cases these background tabby rows were omitted and the other side of the fabric was used as the right side. (65, p.30) In this way a more typical tapestry appearance was obtained but not as firm a product as the former.

There probably was no lack of originality among the early Scandinavian weavers. Many variations on the tapestry technique were in practice; most of which probably originated in an attempt to simplify the Rölakan

technique or to find a less time-consuming method. Along this way techniques as Dukagång, Krabbasnår, and Halvkrabba developed. These Swedish techniques were also practiced in Finland and Iceland, and are still commonly used today. It is more an inlay method, producing a kind of brocade effect on a tapestry weave background. Similar techniques were used by the Copts in a period between the fifth and the tenth centuries. (97, p.31, 34, 35) The Scandinavian people might have had contact with Egypt by sea around the European continent.[26] Another theory is that they reached the Near East via the great Russian rivers, where they either learned the technique or purchased textile pieces. (There always was close contact between the Near East and Egypt)

Characteristic of these inlay technique tapestries of Scandinavia, is the conspicuous parallel lines caused by the inlay threads. The weft threads pass regularly over two to four and under one to four warp threads for a few consecutive rows. (22, vol. 6, p.16) In some cases long floating threads are formed at the back of the tapestry.

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[26] Scandinavian people, and more specific the Swedish, in those days were powerful and possessed a much larger territory than today.

These inlay techniques, which are also called flushing (97, p.31), are not typical tapestry technique; but they are used to form a pattern on a fabric of a true tapestry texture and are thus usually classified as tapestries.

As in all tapestry weaving, the weaving of inlay tapestries is done from the wrong side. The ends of the wefts are fastened by laying them under the nearest warp thread, leaving a short loose end hanging at the back. The background weft thread, which forms the typical tapestry texture, runs from selvage to selvage (unlike true tapestry) and the design thread is an additional thread--an inlay thread used only where the design is desired. At least two tapestry rows are used between each two design rows, depending upon the effect desired or the thickness of the design thread. A single woolen yarn is commonly used for the background, with a two-ply woolen yarn for the inlays. (18, p.203-205)

Vertical stripes in the design are typical of Dukagång. Dukagång has either a tapestry structures background done in woolen weft on linen warp, or a plain weave background in linen. (97, p.31) Originally, however, it was a linen technique. (37, p.3182) The colored design thread is usually wool and is inserted by picking up the warp threads by means of a pointed stick which is

then raised to separate the warp and enable the weaver to insert the weft shuttle. (97, p.31) Seen from the right side the design thread goes regularly over three and under one warp thread for a few consecutive rows. Typical vertical stripes are formed in this way, varying in length and spaced to form a design.[27] (18, p.203)

Krabbasnår (diagonal flushing) is another inlay variation which originated in medieval Sweden. It is basically the same as Dukagång. The designs always have a diagonal appearance, formed by an inlay thread going over one or more warp threads and moving one or two warp threads to one side each row, or after a design square has been completed.[28] (97, p.35)

Another common inlay technique is Halvkrabba or "parted Dukagång" (37, p.3182), where squares form the design. The design thread (inserted as described for Dukagång) goes regularly over two or three, then under two or three warp threads for a few consecutive rows until a row of squares is completed. The next row of squares will be between the previous ones. As in the case of the

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[27] Among the Coptic textiles dated from the fifth to the sixth centuries A.D., linen weavings of similar inlay techniques were found.

[28] Among Coptic textiles dated from the ninth to the tenth centuries A.D., similar techniques were found.

above-mentioned inlay examples, the design thread is used only in the parts where the designs are needed. Two background tapestry rows are used between each two design rows, and where the design thread turns, a small loop is formed on the wrong side of the tapestry.[29] (18, p.203) See Plate XI.

Poland

Another country famous for its peasant art is Poland. The Polish weavers are especially known for their Kilim weaving; in fact, today it is regarded as a Polish national art. (92, p.827) Kilims made in Poland are often referred to as Polish Gobelins, and as far as known they have been made since the seventeenth century. (45, vol. 9, p.9)

Stripes, combined with geometric designs were predominant until the seventeenth century brought a change. Stripes were still used then, but within the stripes easily recognizable, stylized figures such as the tree of life, squares and stars were used. (92, p.827-828) Plant figures (an Oriental influence) also appeared; the leaves and flowers being transformed into geometrical designs in

[29] Coptic tapestries, made in the tenth and eleventh centuries, show strong similarities.

such a way that the original shapes were hardly recognizable. (52, p.2423)

The technique has not changed since the first Kilims were made. Handspun woolen yarns of a high quality, dyed with vegetable dyes, are still used in the weft. The Kilims are woven on horizontal looms (92, p.828) on linen warp threads. (45, vol. 9, p.9) A regular tapestry technique is used for the Kilims but, unlike most tapestries, the entire row is not inserted and beaten down at once--only the part where the weaver is working. Because slits form between color areas, it enables the weaver to complete one specific color area, using a small comb to beat back the weft, before starting on the second area. (92, p.828)

The Polish weaver is always taught that ornamentation has to be "an organic part of the loom technique and that a weaver's art must never lose contact with his craft." Thus, the technique always comes first while the designs are modified to fit the technique. (45, vol. 9, p.9)

Roumania

Throughout the ages, while still called Dacia, the peasants of Roumania were well known for their embroidery and weaving. Since the first centuries A.D. it was ruled

at times by the Romans, Turks, and Russians, and all these countries had their influence on the peasant art. The Roumanian state was founded in 1861.

Among the peasant weavers bright-colored wall hangings and carpets, mainly used as table and bench covers, were the main products. The wool of the Indian wild sheep was used originally both for the weft and the warp, and it was dyed with vegetable dyes. Geometrical motifs were dominant, but in parts (Moldavia) conventionalized plant and flower motifs (Oriental influence) were also used. Ancient motifs from the East were repeated throughout the ages, for example the tree of life motif. In some cases even animal and human figures were used. The eighteenth century brought influences from the West (French Gobelins) when French bouquets, flower vases, and medallions with pastoral scenes found their way into the peasant art.

This peasant tapestry art is still practiced in Roumania in the same way, except that hemp and cotton warp threads are preferred. The Kilim technique and variations of it are used, but only examples made in Wallachia show the characteristic Kilim slit. The weft is usually drawn through the warp by means of a large wooden needle, not with a shuttle. The Kilim hangings resemble Coptic and Peruvian weaves in many aspects.

The Kilim variation, where interlocking of the slits subdue the sharp transition from one color to the other, (103, p.2170, 2193-2198) can be likened with Peruvian "eccentric weaving."

CHAPTER VIII

THE FAR EAST

In the Far East, the land of silk, exceptionally fine and beautiful silk tapestries were woven, even as early as the first centuries of the Christian era. The main silk weaving was done in China and the record of k'o ssŭ (silk tapestry) goes back to the Han Dynasty (206 B.C. to 220 A.D.). (72, p.13 and 6, p.152) This date is not generally accepted; another opinion is that k'o ssŭ dated from the T'ang Dynasty (618-906 A.D.). Since the latter period many Imperial robes as well as draperies were made in the silk tapestry technique. (15, vol. 105, p.3-9) In the Sung dynasty (960-1280) pictorial k'o ssŭ were made. The technique was the same as the other Chinese tapestries, but tapestries of this group were designed as book covers. The designs were usually shrubs and flowers or landscapes. (72, p.17) Many still existing examples of k'o ssŭ weaving were made during the Ch'ien-lung period and this period probably was the height of silk tapestry weaving in China. (16, vol. 105, p.100-101)

Apart from the mentioned robes, draperies, and book covers, upholstery fabrics were also made in the k'o ssŭ technique. (85, p.255) Designs used on tapestries were

all symbolic or related to the Chinese religion, for example Buddha seated on a lotus throne[30], a dragon as the Imperial emblem of China (16, vol. 105, p.95-101), clouds, bats, swastikas, the phoenix bird, conventionalized flowers, and the typical ground-and-mountain design used near the bottom of a garment or wall hanging.

K'o ssŭ is a true tapestry weave except that, instead of the traditional wool, silk is used, sometimes in combination with genuine gold threads--thus an exceptionally rich fabric is obtained. Both vertical and horizontal handlooms were used. The weaving was done very cleverly and it has to be examined closely to determine the method used in joining the color areas. Where one color joined another in a very small point, the two were not connected but tiny slits were left. Where the point of juncture was larger, interlocking of the weft threads was used. (72, p.16 and 15, vol. 105, p.3-9)

In another technique (by some authorities considered a misinterpretation of the actual method used (72, p. 15)) the k'o ssŭ was made by the juxtaposition of the various color pieces. It can be compared with marquetery.

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[30] A wall hanging with the Buddha design was made in the early Yuan time (1298-1368).

Each piece, which differs from the other in size and color, was woven separately but simultaneously connected with the completed part. Even minor background details like a flower might have been composed of ten or more small pieces. The final tapestry was often touched up with paint. (19, p.6)

Most preserved pieces show the ends of the threads hanging loose at the back of the tapestry, only concealed by the tapestry lining. In the case of some Imperial robes however, the difference between the two-sided is hardly noticeable because the ends of the weft were wrapped around the warp and trimmed close. (15, vol. 105, p.5-9 and 72, p.16)

Western influences came with the eighteenth century; European woolen tapestries were imitated and k'o ssŭ became a lost art.

In Japan Tsuzure-ori (tapestry weaving) must have been known as early as the eighth century, judging from an existing tapestry piece, but the earliest date given in records for tapestry manufacturing is 1400. Tsuzure-ori means "patch weaving", referring to the small color areas woven in silk weft on a cotton warp. Chinese influences are apparent in the technique as well as in the designs. (33, p.84-85) Japanese designs are only bolder and stronger in feeling than those of the Chinese.

Plate XII

K'o ssŭ (CHINESE SILK TAPESTRY),
From the Historic Textile Collection,
Department of Clothing and Textiles,
Oregon State College

CASHMERE SCARF
From the Historic Textile Collection,
Department of Clothing and Textiles,
Oregon State College

Typical tapestry weaving was not practiced in India, but techniques similar to tapestry weaving were, and still are used by the Indian sari weavers. Dovetailing is for example generally used in joining the side border of a sari to the different colored center, and single weft interlocking is used where a design joins the background. The sari's are handloomed in a plain weave and the techniques mentioned are the only similarities they have with tapestries.

The famous Kashmir (Cashmere) shawls made in Kashmir[31] during early periods, were either made in the twill tapestry technique or embroidered. The most important period of the manufacturing of the woven ones, was during the reign of Akbar around the year 1556. The technique probably was introduced into Kashmir from Persia. (84, p.799) The wool of a domestic goat, the Kashmir goat, was used, dyed with natural dyes such as cochineal logwood, and indigo. (49, p.3-8) Dark colors were preferred, and even when bright colors were used in the combination, the overall effect was always subdued. (46, p.29-30)

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[31] Kashmir is a small Asian country situated north of India among the Himalaya mountains.

The cone or pine motif,[32] filled with floral forms, was typical of those early Kashmir shawls. They were hand-loomed in small strips to conform to the shapes and sizes of the different pattern pieces, and the strips were later sewn together. (55, p.341) The twill tapestry technique, where the weft passes under one and over two or three warps, was used. Where the color areas join, double weft interlocking, as illustrated in Plate I C was used. (101, p.20)

Since the eighteenth century Kashmir shawls were imitated in Scotland as an embroidery technique on cotton, and later as a woven product of the Jacquard loom. They then became known as the Paisley shawls.

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[32] The later paisley motif.

CHAPTER IX

AMERICAN INDIANS

Today American Indians' weaving is mainly associated with the woven rugs and blankets of the Navajo. But the technique used by the Navajo in making these rugs did not come spontaneously; it was the outcome of a gradual developing art, starting with the early Peruvian Indian tapestries discussed in Chapter V. Weaving might have started in an attempt to do plaiting[33] mechanically and to expedite the process, or a bird's nest might have been the direct inspiration.

Whatever the case may be, the origin of loom weaving in the New World was in Peru. From there it spread to Central America and to the southwest of North America. The weaving products of the Southwest have strong similarities with the former areas, but the actual sequence is still somewhat uncertain. (2, p.1-8, 65) There are also certain influences noticeable on American Indian fabrics which authorities are trying to explain. Especially foreign motifs such as the elephant motif used by the early Indians, prove that there must have been a connection

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[33] Since early times plaiting was a generally practiced craft among Indian tribes.

between America and Asia or other areas where elephants were present at that early time.

One theory is that there was some connection between Asia and the American continent in early times, and that the Indians came to North America about twenty thousand years ago, perhaps by way of the Bering Strait. (4, p.198-199) The people and influences therefore could have reached this continent from the north. As far as is known nothing is proved in this respect.

Another theory is that the American continent had had a close connection with a previously existing continent in the Pacific Ocean. It is almost certain that the South Sea Islands are remains of a sunken continent left exposed above the sea. The similarities of the stone figures, pyramids and other remains of early civilizations in both areas, are strong indications of a previous connection or association. (38, p.3-12) Textile authorities are investigating these aspects, but definite facts are still non-existent.

Weaving must have played an important part in the life of the Pueblo Indians. Pueblo weaving can be traced back about twelve hundred years. (59, p.1) In the ruins of old Pueblo Indian buildings, rooms have been discovered which were definitely built to accommodate weaving apparatus. Those early Pueblos wore cotton garments with

colored borders, and decorations such as headbands and belts in colored patterns. Tapestry weaving was one of the methods used in making these decorations. The actual garments were in a plain or basket weave. (54, p.3249-3250) The techniques, looms, and designs used by the early Pueblos before the arrival of the Spaniards, have strong analogies with those of the early Peruvians. In those pre-Columbian days, the use of cotton and the hair of wild animals was introduced in North America by the Pueblos. (54, p.3252)

Much later the Navajo became acquainted with weaving; possibly after Pueblos, who fled to the Navajo country during the Indian rebellion (1680-1692), visited that area. They made certain adaptations and gradually Navajo weaving developed independently.[34] (59, p.1)

Navajo Weaving

The Navajos first wove blankets to be used as robes. They were warm and "watertight" because of the close weave, the tightly spun yard, and the natural oil left in the wool. (17, p.12)

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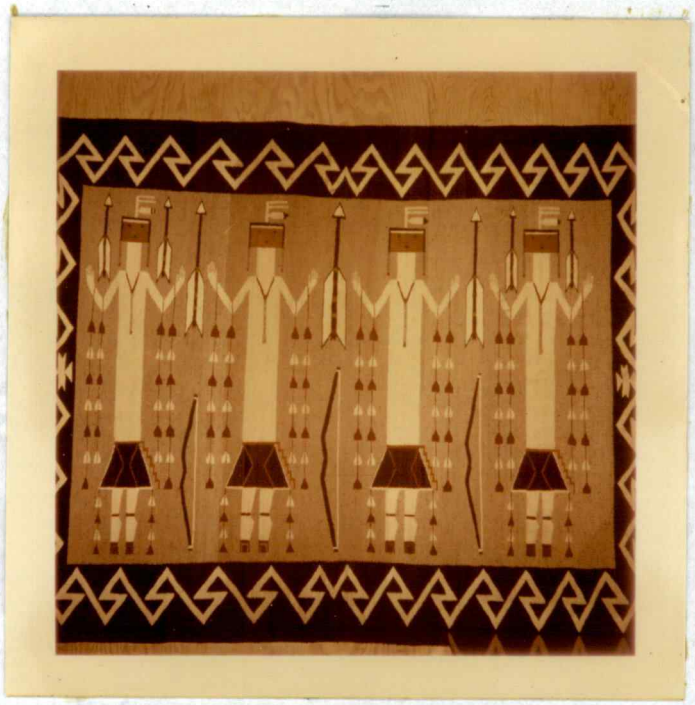
[34] Navajo weavers have only practiced weaving the last two centuries. Woven woolen garments were first mentioned in a Spanish document; it was about observations made not earlier than 1706.

Plate XIII



NAVAJO PICTORIAL BLANKET,
Owned by Mrs. Katherine Beckham of Portland.

The main products from Navajo looms were rugs and blankets, which later became the main article of trade. Smaller articles such as saddle blankets, belts, garters, and hair-cords were also made in the tapestry technique (54, p.3251), but since 1880, weaving has been mainly rugs. (59, p.3-4)

At first cotton was used, but after the Spaniards imported European sheep, wool was introduced. The Navajo weavers were the pioneers in the using of wool in the Southwest. The wool was handspun, used in natural colors or dyed with natural dyes as is still done today.

The uniforms of the Spanish soldiers (traded or obtained from the bodies of their victims) were important sources of red and yellow. The fabrics were ravelled, respun and used in the famous bayeta rugs. In 1880 analine dyes were introduced, that resulted in glaring colors, unpopular among the traders, and natural colors came into use again. (17, p.3-4)

A primitive high warp loom, discussed on page 14, was used, and a backstrap loom was used for the smaller articles. The beating back of the weft was done by means of a wooden fork. (7, p.464)

Most of the rug designs used at the peak of Navajo weaving (1850-1875) and to some extent those used today, have some symbolism. Designs are very stylized and

geometric, and motifs are, for example, associated with rain, clouds, lightning or arrows. Even colors have their symbolism, for example red represents the sun and blue the south. Many of the modern rugs, however, are made to sell--they have no story to tell. Weavers never duplicate a pattern exactly, and they will always deliberately make a mistake to avoid "the curse of perfection--the appearance of rivalling the handwork of the gods." (17, p.7)

Various blankets and rugs[35] were made. For example, the so-called "chief blanket", one of the earlier blankets, was an adaptation of the Pueblo shawls, but woven in wool instead of in cotton, and in the tapestry technique. It was large enough to wrap around the body. (59, p.5-10) The "slave blankets" were made by Indians who were employed as slaves to produce textiles for the Spanish families. Those Indians generally used their own methods. (59, p.21-25) The "poncho blanket" with a center slit was used as an overcoat, and the smaller one as a shirt. The poncho was really a garment of Peruvian origin, also used throughout Mexico, and Central America. (2, p.64)

Some authorities classify the modern Navajo

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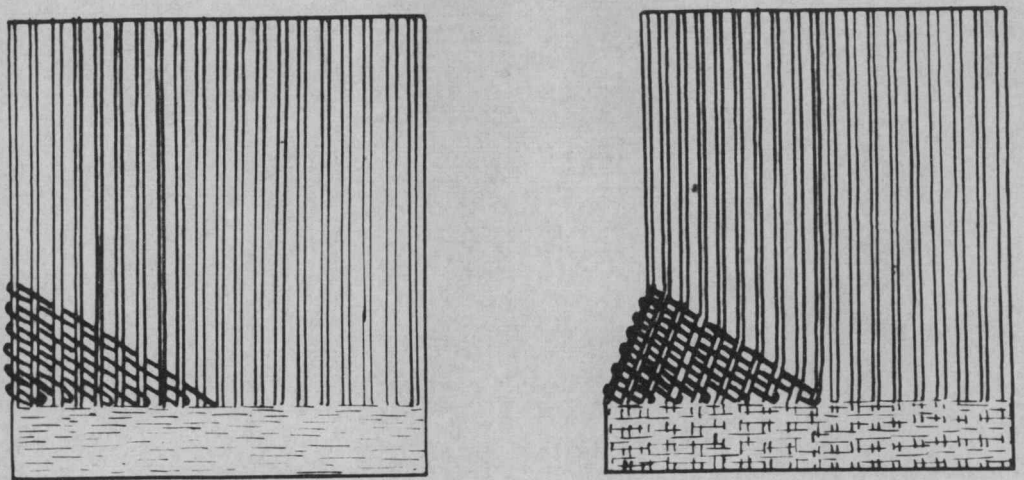
[35] The words were often used interchangeably; in fact, it seems as if Navajo blankets became Navajo rugs in the late nineteenth century.

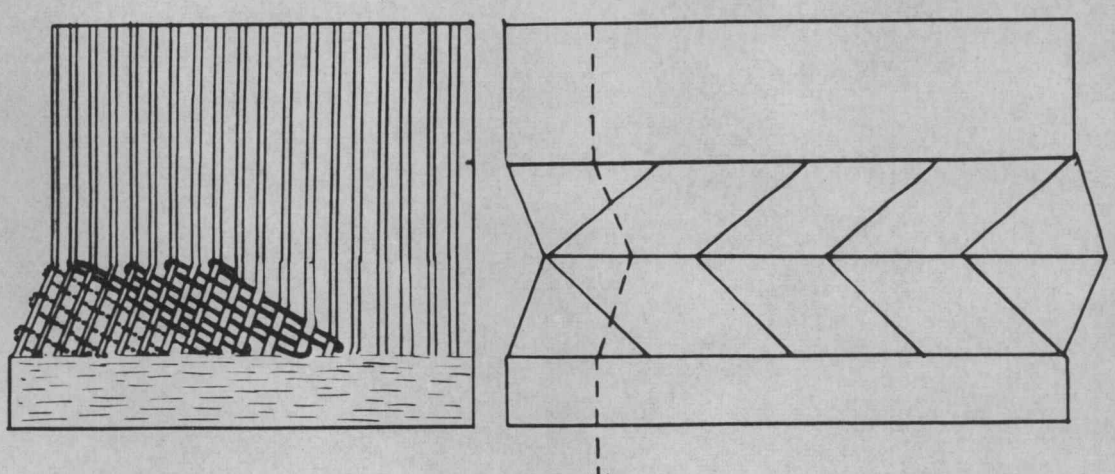
blankets (or rugs) according to the type of design, technique variation used. For example the pictorial blanket, made since about 1864 (43, p.48), shows human, animal, and bird designs. All efforts are made to make the designs as naturalistic as possible. To avoid stepped lines where they would be undesirable, a few strands of cotton often are woven diagonally to the warp (apart from the actual weft), for example for the tail of an animal. These pictorial blankets are not very common. (59, p.28-31)

The wedge-weave blanket is another example. After a section of normal tapestry weaving is completed, a wedge-like section in one color is started in the lower corner. One color area is completed at a time instead of using the traditional method of weaving the entire row. The weaving is such that the weft threads are beaten down on the bias. The hypotenuse of the triangle lies obliquely to the normal weft direction; while the other two sides follow the side of the proposed fabric and the completed part, respectively. As illustrated in Plate XIV A, the rows gradually become longer, including more warp threads each row. By means of this method the warp is also distorted as shown in Plate XIV B. By filling in the second color, this angle is followed and the area is woven up to a predetermined height. See Plate XIV C. The other color areas are woven in the same way, ending

Plate XIV



A. B.



C. D. Warp direction

Wedge Weave Navajo Blanket.

with another triangle. To obtain the wedge effect, the method is now reversed as illustrated in Plate XIV D. The distorted warp threads will really run at right angles to the weft and will cause an uneven selvage.

It is uncertain why this method was preferred to ordinary tapestry weaving. It probably originated in order to avoid constant manipulation of weft strands of different colors. The method was popular in the period between 1880 and 1890. (59, p.42-45)

Where the different color areas join (for Navajo weaving in general) most of the basic interlocking techniques are used, for example dovetailing, diagonal dovetailing, single weft interlocking, as well as slits and diagonal slits. (7, p.464) See Plates I, II, IV B, and IV C. Dovetailing and single weft interlocking are often combined; the one at the one side and the other at the other side of a color area.[36]

Chimayo Blankets

A group of Spanish invaders who settled at Chimayo[37], kept up the Spanish weaving art. The Indian

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[36]This was true of rugs observed by the author.

[37]A place about thirty miles north of Santa Fe.

families of that area were slowly absorbed by marriage, but had no great influence on the weaving; the Spanish character remained dominant. (44, p.167-168) Unlike the Navajo weavers, they used a two-harnass treadle-type loom, the first of which they brought with them from Europe. (7, p.452) They used cotton warp and a rather loosely woven woolen weft. Their rugs were not as firm as the Navajo rugs and were more suitable as wrappings or bedcovers. Their designs were usually small, stylized and geometrical on a background of a basic color. (44, p.169-172) Dovetailing was their way of joining color areas. (7, p.453)

Guatemalan Tapestries

The Maya civilization can be traced back to the fourth century A.D. The people were highly cultured and settled in Guatemala. In the seventh and eighth centuries they moved to the Yucatan peninsula where they developed the second civilization. The Aztec civilization developed from Indian tribes that probably moved down from the northern part of America, arriving in Mexico in the late fifteenth and sixteenth centuries. (104, p.2554-2564)

Among these tribes various crafts were practiced, of which weaving was an important one. True Guatemalan weaving is representative of weaving done in the above mentioned areas.

Tapestry weaving was and still is used to some extent in Guatemala, but is by no means the most important weaving technique there. The tapestry technique is generally used for belts, headbands (6, p.129-130), and the borders of some ponchos (68, p.72), but other techniques are used for the same articles. The Chichicastenango men's blankets are also done in a tapestry technique (68, p.72)

Warp interlocking (dovetailing) is widely used, for example in the Chichicastenango blankets. Characteristic of these blankets are the checkered bands which edge the main border motifs. (68, p.72)

For the tapestry weaving in the borders of some ponchos, the use of the slit technique where the colors join is more common than dovetailing. The slit technique is also preferred in the headbands. These cotton, or cotton and silk headbands show stripes in monochromatic tapestry weaving, with motifs in the center. The actual weave for the latter is twill tapestry weaving. (68, p.72)

Lila O'Neale described a group of cotton huiples[38] which were made entirely in monochromatic tapestry weaving. Some of them showed silk band decoration, woven in tapestry weave. (68, p.72-73)

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[38] An overshirt, waistline or knee-length.

In comparison with other weaves, the tapestry technique is not used too often in Guatemala, and when examples occur, they usually are in small areas. (68, p.73)

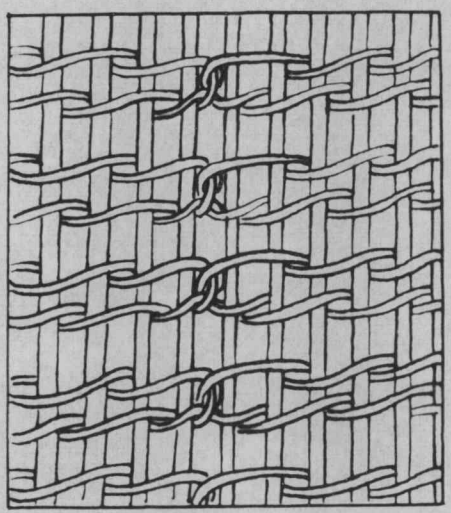
The Soumak technique (well known in the Near East) is often used in Guatemala, but in combination with other techniques to accentuate small areas. (68, p.75-76) It is possible that this might have been in some cases as in embroidery technique, put in by hand after the weaving was completed.

Chilkat Weaving

These famous blankets were made by the Tlingit Indians of Alaska and Puget Sound. They were worn by both sexes and their primary use was as ceremonial robes. The Chilkat apron was a blanket in miniature, showing, as the blanket, the shape of a half circle of which the corners were chopped off, and all had a fringe on the rounded side. A very plain shirt was another garment worn by those Indians and was made in the same technique. (24, p.344-346)

The weft thread used was handspun from the hair of a dog (found on Vancouver Island), in combination with stripped feathers and the wool of a mountain goat. The latter fiber was dominant. The warp consisted mainly of "threads" of the inner bark of the yellow-cedar tree,

Plate XV



Chilkat Blanket
Weaving.

covered with wool fibers. The warp and background weft were used in the natural fiber color, while the design thread was dyed with natural dyes. (24, p.331-337) They used a very primitive loom consisting mainly of two uprights holding a broad cross-piece on which the blanket hung.

The technique is described as "finger weaving" because the weft threads were laced in by hand. A painted board served as the cartoon. (54, p.3250) The first row of a chilkat blanket shows the three-stranded twist weave where the weaving was done with three threads, each of which crossed the other two, and in the process also two warp threads, to go under the third. This technique was probably borrowed from basket weaving. Even the actual weave used in the main part of the blanket is not true tapestry weaving, but a twilled weave done with two weft threads. The two weft threads enclosed a pair of warp threads before they were twisted once. In this way alternating pairs of warp threads were grouped in each successive row; thus giving the characteristic irregularity of the surface. Single weft interlocking was used where two color fields joined. See Plate XV. Three-stranded plaiting, sewn in by hand afterwards, covers irregularities of the weave. (24, p.339-340)

The designs used consist mainly of the conventionalized parts of an animal, woven in different colors. George T. Emmons described it as follows:

> All the parts of the animal are represented, though the members have been separated from their fellows and so distorted in order to meet the demands of the pattern that they are recognizable only by an expert. (25, p.69)

The eye and double eye motifs are the main ones. (10, p. 253) Each Indian family had an emblematic animal which was used as the basis for their blanket designs. (25, p.69) Judging from existing pieces, these blankets were still made late in the nineteenth century, but thereafter this art disappeared.

CHAPTER X

CONTEMPORARY TAPESTRY WEAVING

During the greater part of the nineteenth century tapestry weaving as a craft was of no importance in Europe. Only in the Near East, where traditional carpet weaving proceeded, and especially in Scandinavian countries, was tapestry weaving still an important art and in general practice. In fact, many technique variations developed during this period (as pointed out in the chapter on Scandinavian tapestry weaving); techniques which were later adopted for contemporary tapestry weaving.

Definite reasons for the general revival of tapestry weaving in the twentieth century are difficult to formulate. It might have started as a revolt against machine made products. Perhaps it was only a natural development; the search for something new, something different has always been characteristic of the human race. In this case they wanted something to replace easel paintings. The gradual change in architecture might have been another reason:

> The new materials used in today's architecture contribute to the development of a totally original style which reserves--again as in the Middle Ages--vast surfaces that invite decoration. From this has sprung the revival of frescoes, decorative painting, mosaic, glass work and especially tapestry--at the expense of easel painting. (61, vol. 12, p.19)

Big tapestries are used to break the monotony of large areas of bare walls; a tapestry is also a softer element than a picture in combination with contemporary furniture in which straight lines are dominant.

Whatever the reason might have been, the art of tapestry weaving was revitalized by famous artists such as Jean Lurcat and Marcel Gromaire of France (63, p.62) who re-established a dying Aubusson manufactory in the 1920's. Even government encouragement and financial help was not lacking; the Gobelins manufactory is today entirely subsidized by the French government, Aubusson gets a partial subsidy (87, vol. 1, p.12), and, when the Belgium Government ordered five tapestries for the Belgium pavilion at a Paris exhibition in the late 1930's, they insisted on a real revival in style. (10, p.10)

Contemporary tapestries are not meant to serve the same purpose as those of medieval times; the way of living had changed so that they are needed as sound insulation rather than as heat insulation. The decorative aspect is the main concern today, and that, in combination with the modern needs, are the inspiration for new forms and for the development of new techniques. The technique developments are still in the experimental stage and these techniques are considered variations of the traditional tapestry techniques.

Not only tapestries, but more kinds of wall hangings such as applique work, felt work, embroidered wall hangings, and pile rugs, to be used on the walls, are fashionable today.

The contemporary trend in tapestries is not only towards many new technique variations, but weavers also borrow from earlier techniques and tapestry designs. A large percentage of contemporary designers still use the traditional method, but the trend is towards a looser weave; the warp threads are not completely covered as in medieval tapestries, but both the warp and the weft serve as decorative elements. (99, vol. 17, p.23) In this way a typical shaded effect, caused by warp threads of a light color, is obtained. Some weavers use warp painting if they want to eliminate this shaded appearance. (89, vol. 19, p.23) This method of not covering the warp entirely is more typical of American and Scandinavian tapestries; tapestry weavers on the rest of the European continent and in England are more conservative as far as their techniques are concerned; while weavers of the Near East are still practicing their traditional weaving, both in technique and design.

Another tapestry variation which is often seen in products of the United States, shows tapestry weave areas

combined with large open areas where the warp threads are not covered by the weft. (39, vol. 17, p.17 and 69, vol. 11, p.28)

Apart from the mentioned trends, contemporary designers are borrowing from earlier techniques and tapestry designs. The influences of the widely studied Coptic (83, vol. 5, p.55) and early Peruvian tapestries are noticeable today (100, vol. 71, p.22), as well as adaptations made of primitive art. (11, vol. 13, p.32) Scandinavian tapestry techniques and adaptations of them are also widely used.

Generally speaking there is a tendency towards the use of subdued colors, with the interest obtained by means of light and dark contrast. These interesting shadow effects are due to the adaptation of the hatching technique and by not completely covering the warp threads. The variation of surface treatment, like texture contrast, and the combination of different fibers, add to the interest. (99, vol. 17, p.21) Materials such as jute, coarse wool, linen, dried plant material, and foreign material give interesting texture effects and character to the tapestries.

Pure geometric, graphic, and abstract designs are used to some extent, but there is a noticeable preference

for irregular forms in soft lines. Designs from nature are by no means uncommon, as proved by tapestry titles such as "The Sun and the Moon", "Water Birds", and "Blue Crane". (39, vol. 17, p.14-19)

Scandinavia

While tapestry manufactories of most European countries were just barely functioning during the nineteenth century, Scandinavian, mainly Swedish tapestry weavers, were very active in developing their craft. Because they are geographically so close together, Swedish, Danish, and Finnish tapestry weaving developed together, with Swedish weavers leading in technique, and the Finnish artist probably leading in design. Norwegian tapestries on the other hand, have kept their Gothic characteristics, because the Norwegians, after losing their independence during the Renaissance, refused to adopt the art of their conquerors. They still prefer their designs to tell a story and are using the traditional billedvev technique. (83, vol. 5, p.56)

Scandinavian countries have produced many weavers and designers, of whom the present are very active in developing a true twentieth century technique. The present developments were strongly influenced by the late

Märta Maas-Fjetterström of Sweden. She undoubtedly was one of Sweden's greatest textile designers and, prior to her death in 1941, had her studio in Bastad. At first her designs were versions of the traditional Swedish design. Slowly, but surely, she departed from traditional designs and brought in creative imagination and superlative color sense. She, for the most part, simplified her designs and used brighter, bolder colors instead of the traditional subdued color tones. As many great tapestry designers before her, she also felt that the design should be appropriate for the particular technique. Originally she used the true tapestry technique where the weft are completely covered by the warp, but at times she departed from the traditional technique and did not cover the warp completely. Ever since, this method has caught on among contemporary designers. Apart from this variation, Märta Maas-Fjetterström also used tapestry-like techniques such as rölakan.

For years her work was ahead of her time and over the head of the average person, but gradually the public grew to appreciate it, and to adopt her techniques and she gained wide fame. Her work is now carried on by Barbro Nilson, Ann-Mari Forsberg and Marianne Richter. (28, vol. 16, p.21)

The Märta Maas-Fjetterström studio was responsible

for the large tapestry which hangs in the Economic and Social Council Chamber of the Conference Building of the United Nations. It was designed by Marianne Richter and the weaving was supervised by Märta Maas-Fjetterström. In order to give draping quality to this huge tapestry, the contemporary trend of leaving the warp partly exposed was used, and to join color areas, dovetailing was practiced. The warp ribs run crosswise in the completed tapestry. (9, vol. 4, p.10)

Another name connected with Swedish tapestries is that of Ann-Mari Hoke of Saltslobaden; an interior decorator by profession but also a noted tapestry designer. She studied weaving at the weaving school of Brussons where she became acquainted with the traditional Swedish techniques. Most of her designs, although contemporary, are meant to be made in these traditional techniques. In addition to Swedish tapestries she also has designed modern Gobelin tapestries for various buildings. She uses simple designs and obtains interesting texture contrast by using the pile rug technique in small areas in combination with flat tapestry weaving. (95, vol. 8, p. 20-21)

Two famous Swedish textile authorities, both

teaching at Boras Textile Institute, are Ulla Cyrus[39] and Märtä Ramsbäck. They both have a wide knowledge of Swedish textiles in general, but are especially known for their tapestry weaving. Miss Cyrus is practicing most of the traditional techniques, while Miss Märtä Ramsbäck is famous for rölakan tapestries and pile rugs. Their influence is widely spread; American weavers, for example, often study at the Boras Textile Institute. (79, vol. 9, p.24-25)

Bittan Valberg, a Swedish weaver, came to the United States in 1956 to study trends in textile designs and to adapt them to her own Scandinavian techniques. Her background includes work at the Märta Maas-Fjetterström studio in Sweden, as well as textile studies in Italy, France, and Spain. She is particularly interested in rug weaving--both pile and tapestry rugs. The latter she weaves in Swedish techniques such as rölakan and often in a "happy union of famous old French techniques with a contemporary Swedish design". (12, vol. 17, p.29) Very typical of her work is weft threads which do not run straight but rather are curves following the design lines.

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[39] Cyrus, Ulla, the author of "Manual of Swedish Weaving". (18)

Mrs. Valberg is of the opinion that Swedish techniques can contribute to the art of tapestry weaving, but the designs typical of Sweden should not be copied; other countries should develop a mode of expression typical of the weaving heritage of their countries. (12, vol. 17, p.28-31)

The techniques of Finnish tapestries do not differ too much from those of Sweden, but the Finnish fabrics are noticeable for their high quality of design.

Eva Anttila is a well known tapestry specialist from Helsinki. The main characteristics of her style are a strong linear movement in the designs and muted colors with brilliant color accents. Romantic street and moonlight scenes are among her favorite designs, as well as the folk tales of her country and biblical themes. (65, p.75-76)

Martta Taipale is perhaps Finland's best known tapestry designer. Her work shows a definite Finnish expression and demonstrates the country's feeling for art. As part of her education she attended the Art Institute of Helsinki, the Welterhoff Weaving School in Hameenlining, and she visited Italy and France. She uses a great variety of yarns, from common tapestry fibers to the newest metallic yarns. Her designs are untraditional--she is enthusiastic about modern art and she likes

brilliant colors. She prepares many of her cartoons by means of oil paints on wood, and then transfers the cartoon to a piece of celluloid by pressing it against the wood. In weaving she uses a small comb to beat back the threads. This treatment is necessary because the weft rows are not straight; they follow the design lines. In order to get this effect, short rows are necessary to build up the wider parts of the design, and every now and then a long thread is thrown in to accentuate the curved effect. See Plate XVIII.

Most of Martta Taipale's tapestries, with their religious motifs, are woven for churches, and many have the appearance of altar hangings.

> Her work has an earthy, primitive look which isn't earthy in the borrowed sense as one who draws from African or early pagant (sic) art; rather, it has the primitive quality of an unaffected approach to the serener aspects of nature. (56, vol. 12, p.18-19)

Poland

The traditional Polish kilims described under Peasant tapestry art, are still made today. The same technique is used, but the designs show contemporary adaptations of the traditional motifs. Kilims were originally used as rugs, but today are used as wall hangings, table covers, and bedspreads. The modern

Kilims are lighter in weight and reversible. Generally, bright colors are used, but they are combined with darker tones and yarns in their natural colors. (60, vol. 11, p.61)

The Polish weaver, Krystyna Sadowski lives in Parana, Brazil, but practices her native country's traditional Kilim weaving. She uses both the upright and horizontal looms, with usually a linen or hemp warp and a woolen weft. She prefers the hard, handspun wool of Poland (which is better for tapestries and takes dyes more easily than the Canadian wool she has to use). (82, vol. 2, p.36-37) Her tapestries show mainly animal, bird, and plant designs, all very stylized because of the Kilim technique which requires squared lines in order to form slits.

France

Since the 1920's Jean Lurcat, and other French painters, had been searching for a medium in wall decoration "that would link them more closely to architecture". (83, vol. 5, p.4) Lurcat[40] even made experiments in

[40]Lurcat was born in 1892. Since the beginning of his career (1912) Lurcat was a painter; he started designing tapestries in 1915.

embroideries at one time. Then he discovered the great Gothic tapestries (at that time ignored and considered unsophisticated), and he made a careful study of medieval tapestry art. He decided a tapestry designer must be acquainted with the actual tapestry technique, with the dyes, and with the technical possibilities of design and thread. Only then could he design a tapestry cartoon and not produce an easel painting. (83, vol. 5, p.4-6)

The revival of Aubusson tapestries in the 1920's was mainly due to the leadership of Lurcat--he restored the former glory of the Aubusson factory. (3, vol. 19, p.31) Due to economic reasons rather coarse low warp tapestries had been produced in the eighteenth century, and they were bought mainly by provincial churches. (62, p.340) Manufacturers had also used numerous color tones, but Lurcat cut them to thirteen. They now also use forty-one kinds of wool. (76, p.78) The modern Aubusson factory is partially subsidized by the government. (87, vol. 1, p.12)

A great change in design has taken place, but, characteristic of French art, the work is still somewhat conservative. With the exhibitions of their work in the early forties (1947 also in the United States) it was clear that contemporary Aubusson reached a new height. The modern designs have an abstract quality, and the use of the light and shade effect of hatching is slowly

winning the field.

According to Professor Maingonnat,[41] the medieval tapestry technique, and its revived form in Aubusson tapestries, have certain apparent differences. In the first place cotton warp is generally used in the modern version. It prevents shrinkage and an uneven surface so often caused by the elasticity of the former woolen warp. Contemporary Aubusson prefers the wool of the best Australian crossbred sheep because the wool has a more silky appearance than most other types. As to the type of dye, Professor Maingonnat can see no reason why modern scientific methods cannot be used, even though some colors still fade. (48, p.22) The contemporary Aubusson tapestries are woven in the same technique as they were hundreds of years ago. The prepared cartoon is copied by the weaver on a low warp loom, and in the finished product the warp threads are completely covered by the weft. (87, vol. 1, p.12)

In France, as in Scandinavia and America, tapestry weaving is not restricted to factories and to professional weavers. In fact, tapestry weavers can still be found in every small village, just as in early times. Many of them still practice the traditional French tapestry art, but

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[41] Maingonnat, Professor E., is principal of "The Ecole National d'Art Decoratif," an art center of Aubusson where school children attend two hours of class per week.

modern influences have found their way even to these small villages. This is illustrated by the history of the family Plasse Le Caisne.

Jacques and Bilou Plasse Le Caisne as young artists both wanted to live close to the soil, and as a part of their philosophy they developed the manual skill of tapestry making. They took lessons from the local weavers of villages and later installed themselves on a farm near Maintenon. Although they have not given up the traditional techniques, like Lurcat they have adapted their methods to modern architectural needs.

The tapestries of the family Plasse Le Caisne[42] show stylized animal, human, and plant motifs, as well as graphic and abstract designs. Jacques Plasse Le Caisne obtains texture variation by combining different fibers such as wool, silk, and even gold and silver. Contrary to the general French technique, he sometimes leaves the cotton warp visible because "it supports and complements the hue of the weft." (61, vol. 12, p.20)

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[42] Their daughter Christine is also a weaver. In 1932 Francois and Bilou had their first exhibition in Paris, and Jacques received the Blumenthal prize for design in 1940.

As Renee Moutard-Uldry says:

> It was inevitable that the trend of our times, new requirements and materials, should inspire fresh concepts and methods in France, especially, where ingenuity in hand skills has always been inseparable from the genius of its people. (61, vol. 12, p.20)

England

As those of many other countries, English tapestry weavers are also experimenting to find a "modern, practical means of expression". (83, vol. 5, p.54) We find in Scotland a good example of the revival of arts and handcrafts after World War II. A movement, "Workshops and Studios Foundation Limited", has been launched, with the aim of providing a craft center to put products on the market on a sound and proper economic footing.

The Dovecote Studios, home of the Edinburgh Tapestry Company, were reopened after World War II (1946). Actually the Studios were built much earlier (in 1910), but they were closed during World War I and II. It was the idea of Marquis of Bute to open these studios, where Ronald Cruickshank is the present director. (23, vol. 10, p.22-23)

The tapestries, woven on high warp looms, are in sizes suitable for homes, and are used for wall hangings, chair seats, chair backs and carpets. The director,

Ronald Cruickshank (who is also the main artist and weaving expert), made a study of drawing, painting, and weaving and has made many experiments in tapestry techniques, the use of color, and tapestry designing. (23, vol. 10, p.22-23) The basic tapestry techniques, as used since the Gothic period and up to the nineteenth century in England, are also used by the Dovecote weavers. (83, vol. 5, p.54-55)

The largest tapestry ever to be woven, was made by the Edinburgh Company after it had been reopened. This piece, sixty-two feet long and forty feet wide, requiring about fifteen thousand pounds of wool, was made to hang behind the altar of the new cathedral of Coventry. (83, vol. 5, p.54)

The tapestries of a young English artist, Gordon Crook, have been gaining interest. The artist considers them closely related to the art of painting, not because they resemble paintings, but mainly because they are framed like paintings and are not meant to be functional. Unlike many tapestry designers he does not find "naturalism" suitable in tapestry designs. Some of his designs are purely abstract, others, as "Little Moon-faced Boy", show a definite Coptic influence. He obtains various effects by using a wide variety of yarns, and to

obtain emphasis, likes to use a dark color on a pastel background. (83, vol. 5, p.55)

The United States

Many American tapestry weavers are contributing to the gradual change in woven tapestries. European weavers who have become United States citizens, are also playing an important part in developing the tapestry technique. The new trends mentioned earlier in this chapter are typical of contemporary American tapestries, but on the other hand, many of the weavers still use the traditional tapestry techniques, often drawing their inspiration from ancient sources.

Contrary to the Aubusson and Dovecote manufactories, in France and Scotland, respectively, where trained weaverers produce the tapestries from designers' cartoons, the weavers in the United States are, to a large extent, individuals who design and weave their own tapestries; or, they are organized in comparatively small studios where the tapestries are woven under close supervision of the designer.

The new trend towards a looser weave, where the warp threads are not completely covered by the weft, is illustrated by the tapestries of designers such as Trude Guermonprez and Kay Sekimachi.

Trude Guermonprez, at present a resident of San Francisco, is an Austrian-Czech by birth and has lived in Finland, Sweden, Germany, and Holland before she came to the United States. She taught weaving in various schools, such as the California School of Fine Arts, and is now a faculty member of the California College of Arts and Crafts in Oakland.

In her teaching she tries to eliminate the earlier practices of weaving, and emphasizes the possibilities of color and texture variations. She often weaves tapestries; a typical example of which is the framed piece, "Calico Cat", that hangs in her living room. In this piece she used woolen yarns in soft muted tones and the warp is not covered, giving an appearance of plain weave. Because of this technique she obtained a vaguely discernible shadow effect of the cat design. Her opinion is that a woven tapestry or wall hanging should not be dominant, it should be no more than "just a part of the room". (90, vol. 19, p.27-31)

Kay Sekimachi is another weaver using the same technique as Trude Guermonprez. She was born in San Francisco, studied at the California College of Arts and Crafts in Oakland and the Haystack Mountain School of Crafts in Liberty, Maine. She taught weaving in various art schools in California. (64, p.45) After she studied

with Trude Guermonprez in 1954, she discovered her own possibilities and began to create tapestries and other wall hangings. In her tapestries she uses a variety of material such as jute, wool, and linen (89, vol. 19, p.22), as well as silk. (64, p.45) In a tapestry where she used the new looser weave, she painted the warp yarns in those areas where she wished to eliminate the shadow effect of the white warp. (89, vol. 19, p.23)

Apart from the contemporary trend of not covering the warp entirely, she uses the more traditional techniques, but, as she says: "I use traditional techniques modified for my own personal needs." (89, vol. 19, p.22) Rather than using weft interlocking techniques she tries to obtain a more fluid effect by overlapping the weft threads and inserting extra weft threads, a technique which also expedites the weaving. (89, vol. 19, p.22)

The tapestry weaver Claribel McDaniel of Carbondale, Illinois, is using modernistic designs, but she mainly practices the basic tapestry techniques, often combining several in one work. She studied weaving at the University of Southern Illinois and is now doing most of her weaving in her own studio. She also practices other types of weaving, but during the last five years, tapestry weaving has been her main interest and the

products were usually meant to be wall hangings.

In her first tapestries she used mainly geometric designs; then she became interested in bird-like forms, fantastic animals and building motifs. In her recent works she again has used geometric forms. Her tapestries have the traditional tapestry appearance where the warp threads are covered by the weft. (98, vol. 11, p.18-19)

The trend towards borrowing from earlier tapestry techniques and designs, is illustrated by the work of Saul Borisov of New York. He originally was a painter and, while searching for a new way of expression, he became interested in tapestry weaving. (11, vol. 13, p.30-33) He made a study of primitive arts, among which was the Peruvian tapestry art. The influence of Peruvian tapestry design on Borisov's own stylized designs, is obvious. He especially likes the Peruvian weavers' way of incorporating the slit technique into their designs. (100, vol. 71, p.22-23)

He works with a variety of materials such as hemp, rope, magney, beads, various woolen textures, and cotton. He makes only vague sketches because he works out his designs as he proceeds. His tapestries vary from heavy to thin, usually usable as rugs, wall hangings, or bedcovers. (11, vol. 13, p.30-33)

A Portland weaver, Ruth Clark, who came to the United States from Norway in 1947, uses old Norwegian tapestries as inspiration for her wall hangings. She uses a simple loom, a tapestry fork instead of a comb, and even natural dyes such as boiled leaves or walnut shells and cochnineal, with alum as a mordant. Apart from the Norwegian designs, she also uses geometric patterns. Her Norwegian inspired tapestries all have the traditional tapestry appearance, but some of her pieces are of the transparent kind. Typical of this contemporary trend, often used today, is the open spaces left by only covering the warp threads of the design areas with weft, or by covering certain areas only partly with lacy stripes. (67, vol. 9, p.29-31, 55)

The latter technique is also practiced by Lenore Tawney of Chicago, who studied tapestry weaving with the Finnish designer Martta Taipale. Lenore Tawney uses a variety of threads in one tapestry (39, vol. 17, p.15-16) and often combines in a tapestry, areas of shear weave with closer weave areas. (23, p.49) These areas either show only the warp threads with no weft threads, or are "mesh or screen woven" to act as a background for a solid design. (39, vol. 17, p.18-19) Some of her tapestries are mounted under glass or on colored wooden panels, and

others are lined with fabric. Open warp tapestries are meant to hang free in the center of a room, with a light behind the tapestry to accentuate the texture contrast.

Lenore Tawney's tapestries show a preference for naturalistic designs like birds, flowers, and trees. They are all suitable for contemporary buildings. (39, vol. 17, p.14-19)

Among other weavers who have an important influence on contemporary tapestry weaving are Mildred Fischer, Alice Adams, Sirkka Ahlskog, Franklin Colvin, Jan Yoors, and Jean Van Noten.

Mildred Fischer studied textile design in Vienna and at the Art Institute of Chicago; weaving at Cranbrook Academy of Art, Bloomfield Hills, Michigan, as well as in Finland, Norway, and Sweden. She has taught weaving in various schools. She weaves as an art expression, as she says:

> My ultimate concern in tapestry is to produce the well-crafted, pliable article that can mitigate the hard surfaces in modern architecture, buffer sound, and temper the light; and which will maintain its own long-lasting enthusiasm on the wall of a home, dormitory, office, church, hospital or school. (64, p.18)

After a course in the school of painting and sculpture at Columbia University, Alice Adams went to France where she studied tapestry design at Aubusson.

Her tapestries show that she uses basically the traditional techniques, but with a different approach. She obtains a textured effect on the right side of the tapestry by using long loose stitches, such as are often found on the back of a tapestry. These long stitches, different in length and running in all directions, give a different character to her tapestries. Her designs are mainly abstract. (26, vol. 20, p.16-20)

Sirkka Ahlskog was brought up on a farm in Finland, lived in Sweden for seven years, and then came to the United States in about 1951. Tapestry weaving is her major field and, like Lenore Tawney, she also studied with Martta Taipale of Finland. Her designs include abstracts and "idealized figure studies", and a tapestry often shows a shadow effect because the white warp is not completely covered. (80, vol. 9, p.30-31)

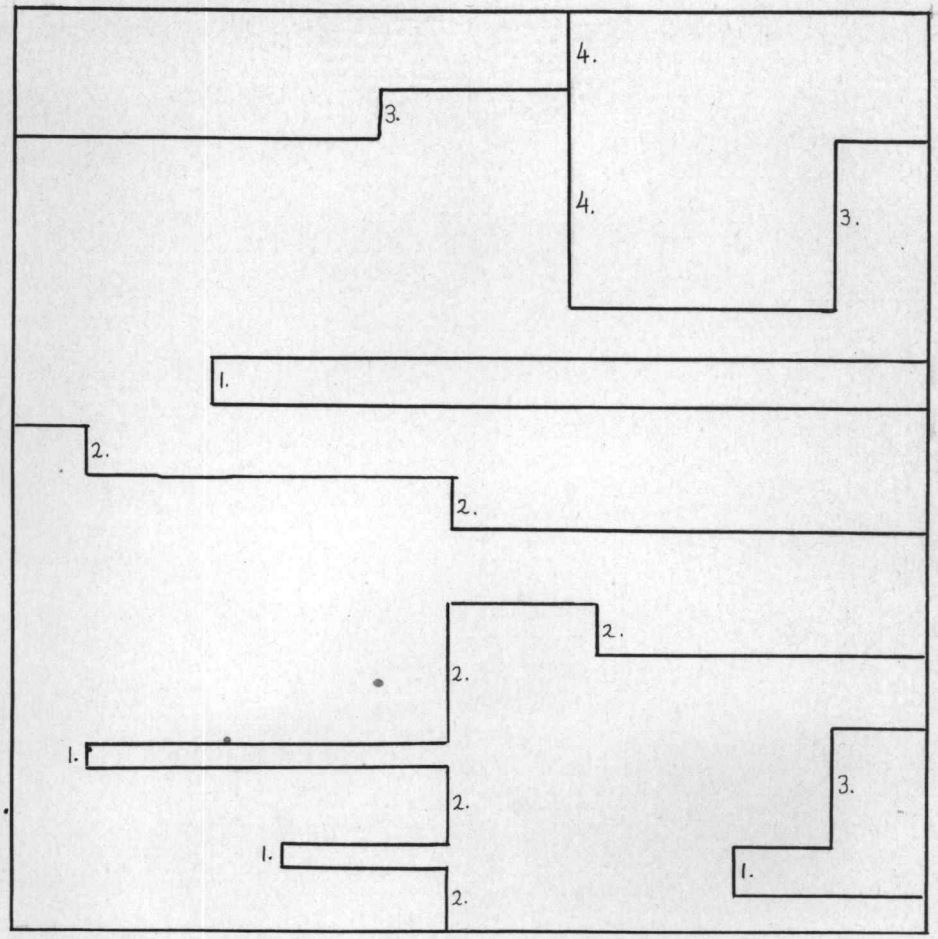
Franklin Colvin, like many other weavers, thinks that contemporary interior design provides great possibilities for the tapestry idea. She does tapestry weaving mainly to please herself; she does not use cartoons but works directly on the loom, drawing inspiration from the ordinary things of everyday life. She uses a variety of yarns, but French mohair is one of her favorites. Her designs show mainly straight lines,

running in different directions to form blocks. (27, vol. 15, p.26-29)

Jean Van Noten is a Belgian artist now living in Englewood, New Jersey. Following the European tradition, he designs tapestries which are woven by others. (88, vol. 8, p.42)

Contrary to the European customs, Jan Yoors, another Belgian artist now living in the United States (New York), designs and weaves his own tapestries. His wife and sister-in-law assist him with the weaving. They use a high warp loom without treadles, basically the same as the medieval high-warp loom. They use only linen and woolen yarns, the latter of which they dye themselves, using chemical dyes. Jan Yoors uses cartoons, but usually only the outlines, except when he makes a cartoon for a client's approval. His tapestries are noticeable for their monumental scale. Yoors uses no excessive ornamentation in his designs, but rather strongly drawn outlines. The colors and actual design of the tapestries show very clearly his background--a life among the gypsies since the age of twelve. (81, vol. 5, p.18-19, 51)

Plate XVI A
Basic Techniques,
as used in the woven tapestry--Plate XVI B



1. Slit or Kilim.
2. Dovetailing.
3. Single weft interlocking.
4. Double weft interlocking.

PLATE XVI B

BASIC TECHNIQUES

PLATE XVII

WEDGE WEAVE NAVAJO BLANKET ADAPTATION

PLATE XVIII

CONTEMPORARY TREND

PLATE XIX

CONTEMPORARY TRENDS

CHAPTER XI

CONCLUSION

Except for some of the most recent trends there have been no major changes in the tapestry technique up to the present time. In studying the tapestry techniques, slight variations can be noticed, but basically the definition of a tapestry still holds true: a tapestry is a firmly-woven fabric in which the warp threads are completely covered by the weft, and the weft threads do not run from selvage to selvage, but only in the areas where the specific color is needed.

The variations mentioned are mainly in the way in which two weft threads are handled where they join. For this purpose the early Egyptians and Peruvians used dovetailing or the Kilim (slit) technique. The usage of these methods can be traced in all tapestry weaving throughout the Middle Ages and Renaissance, and even after weft interlocking had been introduced in the seventeenth and eighteenth centuries. Two or more of the basic methods were often combined in order to make the most of a design, for example in the medieval European tapestries and the tapestries of the American Indians. Often only one technique was constantly used, and is today considered typical of a certain tapestry type or a

certain country's tapestry weaving. The Kilim rugs of the Near East and the Polish Kilims are good examples of the latter; both show the use of only the slit technique.

Definite technique changes did not really occur before the twentieth century, but throughout the centuries additional techniques, still qualifying as tapestry techniques, were added. Examples of these are the shadow effect of medieval hatching (a form of which had been used by the Copts), the Norwegian toothing, and the different inlay techniques of the Scandinavian countries. These technique variations developed along with the type of design. As designs changed, techniques were chosen or developed to suit the design lines. The Kilim rugs were based on square and geometric designs, the slit technique was therefore chosen to emphasize the design lines; a serrated edge was required in the Norwegian tapestries and toothing was developed to obtain that effect; a neat junction was required in order to get a reversible piece, and the Norwegians chose single weft interlocking in their åklae weaving to give this effect.

It is clear from the study that the basic techniques are still in use in contemporary tapestry weaving. The woven pieces of weavers like Jan Yoors, Ruth Clark, and Krystyna Sadowski, as well as the work done by the Aubusson and Dovecote manufactories, prove this. Weavers

often not only use the traditional tapestry techniques, but their designs also show the influence of a certain period or country, for example the definite early Peruvian influence in Saul Borisov's designs.

Plate XVI shows an example of tapestry weaving where four of the basic techniques of joining the color areas are combined in one tapestry piece.

Unusual tapestry techniques practiced in a specific country during a certain period often offer design inspiration. Plate XVII shows how the Wedge weave technique, practiced by the Navajo weavers in the period between 1880 and 1890, can be adapted for contemporary tapestry weaving. A study of tapestry weaving offers innumerable possibilities in this respect. Techniques such as eccentric weaving of the early Peruvians; Soumak weaving as used by the Persian, Swedish and Guatemalan weavers; the twill tapestry weaving of the Cashmere shawls, and the Norwegian toothing can all be adapted very successfully in contemporary tapestry weaving.

Scandinavian countries, mainly Sweden, are among the leading countries as far as contemporary tapestry weaving, and tapestry as an art is concerned. Scandinavian influences are apparent, not only in the United States, but also in other parts of the world. Perhaps Sweden should be credited for the revival of tapestry

weaving in the twentieth century. There they developed this craft during the nineteenth century while hardly any tapestry weaving was practiced elsewhere. The tapestry history of a famous Swedish weaver like the late Märtta Maas-Fjetterström shows how she gradually changed from the traditional to the contemporary in tapestry weaving. She and her contemporaries were the first, after the early Peruvians, to use the open warp technique. These "transparent tapestries" were actually developed because of a shortage of material (83, vol. 5, p.56) and possibly to find a way of expediting the comparatively slow weaving technique.

Also other trends came into use among Swedish weavers of the early twentieth century. The contemporary trends of not covering the warp completely, and of having the weft rows follow the main design lines rather than to be parallel to one another, were earlier in this century used by Swedish weavers as pointed out in Chapter X. Plate XVIII shows the author's adaptation of the latter trend. In the weaving process a tapestry fork, instead of a reed, has been used to beat back the weft threads. Long and short rows have been combined in order to build up the design and still have the main weft rows follow the design lines. From tapestries examined by the writer, it was clear that this technique had been used in earlier

tapestries such as Coptic pieces, medieval European and Norwegian tapestries. In these cases the use was mainly to obtain smoother, rounded lines in small areas such as eyes, flower petals, and other rounded forms, but in its contemporary use it is extended into large areas.

Plate XIX shows an adaptation of the medieval hatching technique, combined with open warp areas and the contemporary trend of not covering the warp threads completely in the woven area. Where the two colors join, single weft interlocking has been used in order to make the piece reversible. These transparent tapestries should preferably be reversible as they are more effective when hanging free in a room; more like a room divider and not as a wall hanging.

The tapestry weavers of the United States are also very active in developing a contemporary tapestry technique. Even more so than the Swedish weavers, they are experimenting and practicing the mentioned trends. True to the general opinion that a successful tapestry, showing real art, can only be made by those who have a knowledge of both designing and weaving, tapestry weaving in the United States is mainly practiced by individual weavers.

Studios exist where weaving is done under supervision of the main designer, but there are no large tapestry industries as in the case of Aubusson of France, and the Dovecote weavers of Scotland.

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