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The Weaver's Journal

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The Weaver's Journal

Quarterly Journal For Textile Craftsmen
Volume III, Number 2, Issue 10 October, 1978

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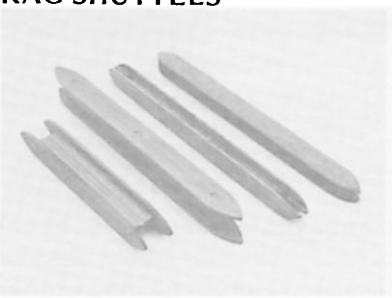

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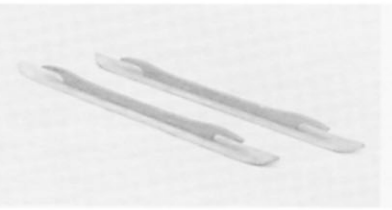

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Photo by Ellen Champion

Marcie Kozloff of St. Paul, Minnesota, catches a few moments of rest next to Carol Hunter's soft sculpture, "Agnes".

Letter From the Editor

The day after the July '78 issue of *The Weaver's Journal* was mailed off to our subscribers, the staff took off for Fort Collins to participate in the Biennial Convergence of the Handweaver's Guild of America. We were so pleased to meet our old and new friends. We were encouraged by their praise and enthusiastic about their comments.

Just in time for Convergence, our first monograph, "Bolivian Tubular Edging and Crossed-Warp Techniques" by Adele Cahlander, came off the press. Monograph One is a collection of reprints published in *The Weaver's Journal*, Vol. I, No. 4; Vol. II, No. 4; Vol. III, No. 1. In our excitement and hurry to get ready, we overlooked a major error which occured during the paste-up of pages 22 and 23 of the monograph and pages 44 and 45 in *The Weaver's Journal*, Vol. III, No. 1. We are enclosing a correction sheet in this issue and we hope that you will take the time to correct your copies. We are sorry about this, believe us!

From our point of view, Convergence was a great success. There was so much to learn, so much to see, so much to enjoy. We talked to many people about 'silk' which we have been studying for a long time in order to feature it in this issue. Silk seems to be an inexhaustible subject. Many weavers were willing to share their knowledge of silk and describe silk projects for the readers of *The Weaver's Journal*. However, the deadline was too close. So, we decided to feature articles on silk in this issue but keep sharing our enthusiasm for silk in many issues to come.

There was so much to absorb during Convergence and not much time for napping. However, the Student Center of the University set out a bait: a life-size stuffed soft sculpture of a woman resting in a chair. One weaver, needing time to take it all in, decided to join the sculpture for a pleasant little rest. See plate. This reflected the attitude of many of us.

After a few days it was all over, but the enrichment that each one of us enjoyed was an experience not soon to be forgotten.

We have included a silk survey questionnaire in this issue of *The Weaver's Journal*. It has been prepared with the help of Joan Lea Walsh. We feel that it is important for weavers, spinners and dyers to share their experiences with others. We would like *The Weaver's Journal* to be a clearing house for information on silk and plan a special column, "Silk and the Fiber Craftsman". Its success will depend on contributions from our readers.

Please fill in the questionnaire and mail it to *The Weaver's Journal*. Include your comments, articles, and photos.

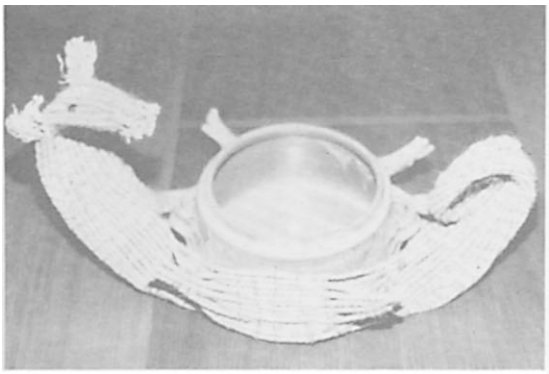

Plate 1
Armadillo woven by Ruth Nelson

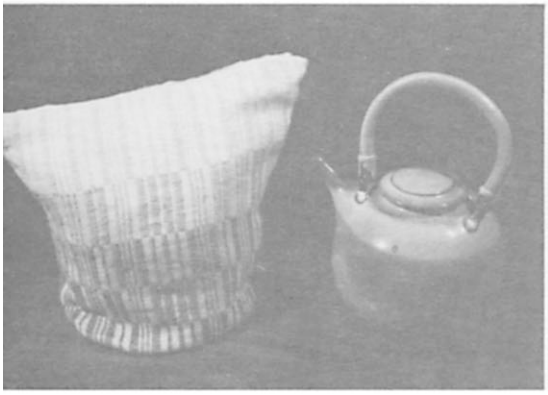

Plate 2
Tea-cozy woven by Linda Toomre

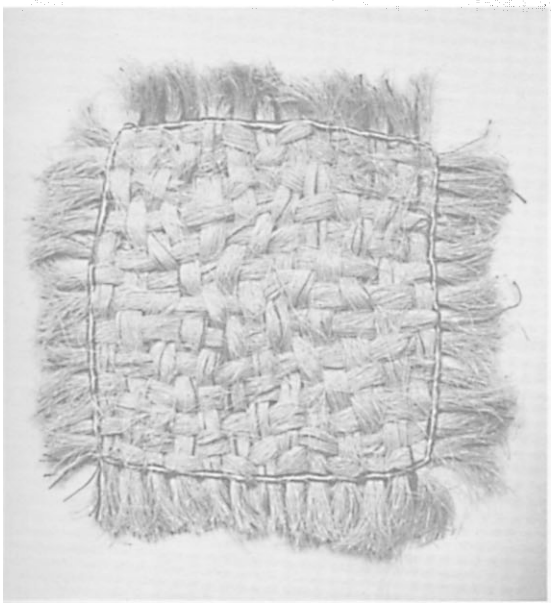

Plate 3
Linen mat woven by Jean Bendon

Hotpots

During Convergence '78, held in Fort Collins, Colorado, *The Weaver's Journal* sponsored a special show 'Holders of Hotpots'. The show was a small one with 27 entries on display. The most unusual piece was an armadillo made from twined natural grasses, lying on its back and holding a hand-thrown pot in its belly. Obviously, it won first prize and was the work of Ruthe Nelson from San Antonio. The two tea-cozies entered were sensibly functional and pleasing in design. One, by Linda Toomre from Boulder, had a simple colorful overshot pattern. It won second prize. The other woven by Lynda Rowan, was a tapestry house cozily constructed to cover a teapot. The third prize winner, by Jean Bendon, was a linen mat. Large bundles of linen were interlaced in plain weave and were stabilized by twined edges.

This type of show has great potentials. Many weavers told us that the theme of the show really started them to think in terms of relating creativity and functional objects.

We are grateful to all the weavers who participated in the show and to all those who gave the show enough thought to become aware of the fact that ideas and concepts can be expressed through items that we use in everyday life.

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For a workshop in "Playing with Profiles", interchanging weave systems within these multi-harness profiles, write Ruth Holroyd

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Silk has a long and fascinating history, starting over 4,000 years ago with the development by the Chinese of the art of rearing silkworms to make a textile fibre. Since that time silk has remained highly valued for its luxurious qualities but, because its main uses have been in very expensive apparel and other luxury goods, demand has been considerably more variable than that for many other fibres.

There are several species of silk-producing worms but most of the world's silk results from the worm of the moth *Bombyx mori* which lives exclusively on the leaves of *Morus alba*, the white mulberry tree. Other silkworms include the wild or semi-wild varieties, such as Atlas, Eri, Tussah, and Muga, which are found mainly in India and Asia and feed on the castor-oil and other plants. Many other silkworms also exist which cannot be exploited commercially for various economic and technical reasons.

Sericulture

Although the life-cycle of *Bombyx mori* is typical of most other silkmoth

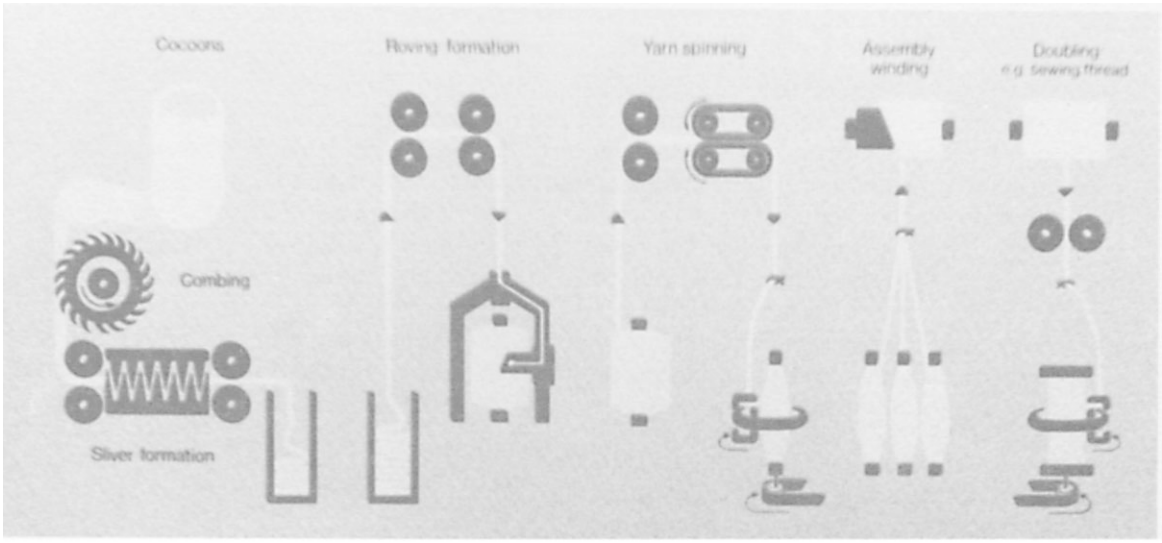
species, domestication over the ages has deprived the moth of its ability to fly. This feature is exploited in sericulture to introduce an orderly sequence into the whole cycle, for the moths can be put in desired places for egg laying. Following mating and fertilization the female moths are usually transferred to special cards where they deposit their eggs. The cards are numbered and labeled according to the appropriate breed, a system which enables diseases to be controlled and traced and good breeds selected. Over the years a considerable amount of genetic research, particularly in Japan, has led to the rearing of varieties with known characteristics and improved features, e.g. production of higher weight of silk per cocoon and better quality raw silk. Different varieties of eggs are also produced, enabling rearings during the spring, summer, and autumn seasons to be achieved.

The silkworms are reared in large numbers at silk farms, where plantations of bush-like mulberry trees are cultivated to provide leaves which are fed to the worms in special rearing rooms. From the day it hatches to the time it stops feeding, a period of 25 to 30 days, the worm gains in weight about 10,000 times. During this time it eats some 22 g of leaves and converts more than 70% of its intake of nitrogenous substance into silk substance. The fully-grown silkworm has two silk glands each filled with a concentrated solution of the silk proteins, fibroin and sericin, the latter forming a sheath around the former. The two glands unite in the spinneret, a minute aperture in the muzzle of the worm. Each gland extrudes a brin, a very fine filament of fibroin, and the two brins are surrounded in the spinneret by the viscous silk gum, sericin. The gum coagulates on contact with the air, thereby binding the brins together in a single continuous form known as a bave. Immediately prior to the process of pupation the worm first attaches silk fibre to various supports, such as the straw, branches, or special frame provided by the farmer, to form a scaffolding, and then extrudes the silk thread and deposits it layer upon layer to form a cocoon around itself. The cocoon thus consists of a continuous bave comprising two filaments of fibroin brins each surrounded and stuck together with the silk gum, sericin. Most cocoons, except those required for propagation purposes, are subsequently heated by a process known as stifling to kill the chrysalis within and prevent the emergence of the moth which otherwise would make the cocoon unreelable. Following the stifling process the cocoons are inspected and graded; defective ones are separated for subsequent treatment as silk waste.

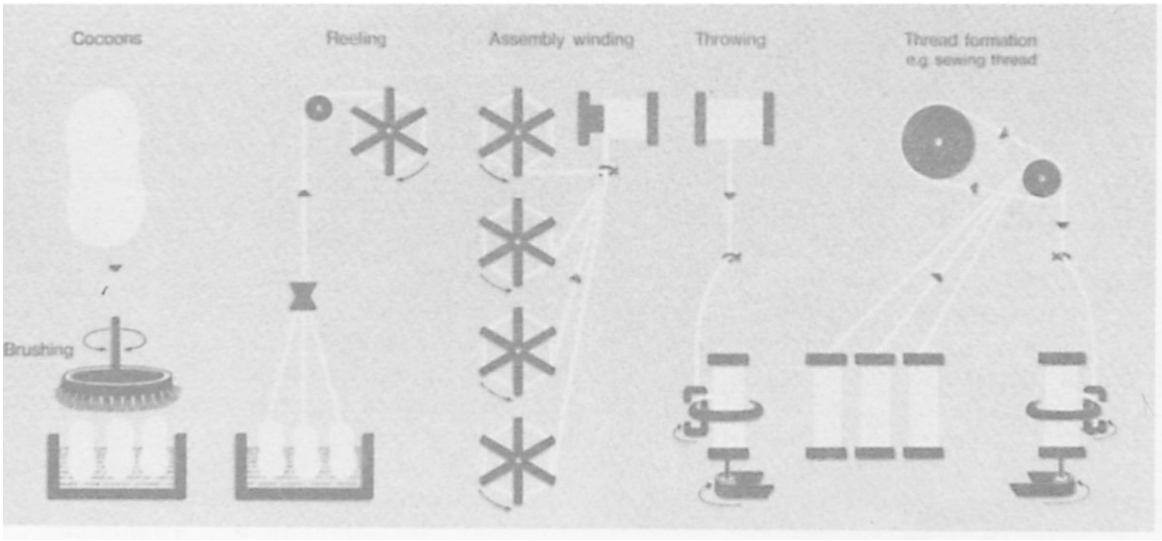
Filature reeling

Reeling consists of unwinding the seric fibre from several cocoons together and reeling the baves so as to form a composite thread of the required denier. A *Bombyx* silk bave is only about 15 to 25 microns thick and it is too thin and weak to be used singly. Several baves are therefore combined and made into continuous filament raw silk, which is one of the two forms in which the fibre reaches the textile industry. The reeling process consists essentially of softening the silk gum, by maceration in hot water, removing the loose outer layers until the free end of the bave has been located and then combining it with the baves from other cocoons. As the water evaporates, the filaments are bonded together by the gum to form one thread.

Double cocoons, i.e. cocoons containing two or sometimes more chrysalides, have generally coarser and considerably more uneven baves. They are however frequently reeled to produce relatively coarse raw silk threads containing



Production of spun silk



Production of filament silk

numerous irregularities. The resulting yarn, referred to as douppion silk, has a characteristically uneven appearance and is used, for example, in fabrics of the shantung type.

When the hanks of raw silk are removed from the reeling machine they are leased by passing a number of threads across the hank in such a way as to divide it into an equal number of parts. This ensures that the hanks can be easily unwound in subsequent processing. The laced hanks or skeins are then folded and bound together in bundles (books).

For reeling one kg of raw silk about 6.25 kg of fresh cocoons are necessary, while for raising 6.25 kg of cocoons about 104 kg of mulberry leaves containing 26 kg of solid matter are required. On average, 75% of the fresh "green" cocoon, by weight, is chrysalis and 25% cortex. The outer layer of floss and the inner layer are collected as silk waste and used in spun silk manufacture. Wild silks such as Tussah are also generally used for spun silk as the cocoons are seldom in a reelable condition.

Although much of the world's silk is still reeled from hand-operated basins, 99% of the silk produced in Japan is reeled on automatic reeling machines. With these machines the process is considerably less labour-intensive, and to further increase productivity about 50% of the silk now reeled in Japan is in the 26/28 denier range and around 22% coarser (mainly 30/32) denier ranges with less than 23% in the finer 20/22 denier range.

Silk throwing

This involves preparation of the raw silk into a form suitable for knitting and weaving purposes. The first process is that of soaking the hanks in a warm emulsion of various oils and other softening agents in a slightly alkaline solution and during this process the oils are taken up by the silk gum. The objective is to make the yarns more supple and pliable and also reduce their coefficient of friction without destroying the ability of the silk gum to protect the fibroin brins during the processes which follow. Following soaking and drying the hanks are re-wound on to bobbins or cones and the actual throwing stage consists of inserting the required amount of twist in one or more "singles" or doubling them together to form differing yarn types, e.g. thrown singles, tram, crepe, organzine, grenadine, according to end-use requirements.

Silk fabric production

Although silk can be knitted or woven equally well, present-day demand is almost wholly for woven silk fabric. Many silk fabrics are produced in hand looms; in Japan the number of hand looms increased from about 18,000 in 1963 to about 46,000 in 1974 whereas during the same period the number of broad-width power looms weaving silk fell from 30,000 to 19,000. Narrow-width (ribbon-type) power looms, however, increased in number from 32,000 to about 78,000. These figures may appear surprising, resulting as they do from a country which has gained a considerable reputation for automation and productivity in its textile industry. The reason for the greater demand for handwoven fabrics is probably their generally superior appearance for which the purchaser is obviously prepared to pay the extra cost involved.

Spun silk yarns

Some 60% of the silk extruded by the silkworm is useless for the production of continuous filament yarns, and the spun silk process is based on the utilization of this material. The technique of spun silk production is quite distinct from that of thrown silk yarns and many of the mechanisms involved in the process are closely related to machines used in the preparation and production of yarns from staple fibres such as cotton, wool, flax, and jute. The sources of raw material for the manufacture of spun silk yarns include the unwindable fibres from the outside of the cocoon, the initial and final cocoon material rejected by the filatures, cocoons from which the moth has emerged, and unreelable cocoons from the wild silk varieties.

The silk wastes are suitably treated according to their origin by combined mechanical and degumming processes which remove most of the chrysalides and other debris, and leave the fibres sufficiently degummed to enable disentanglement of the waste and further cleaning by mechanical opening methods. The fibres are subsequently cut into short lengths ('staple') and following further preparation they are combed into slivers. These are made into yarns by processes of mixing, drafting, and spinning.

Dyeing and finishing

Prior to dyeing, continuous filament silk yarns or fabrics are usually degummed, a process in which the sericin is removed, leaving the silk brighter and softer. The gum is removed by boiling in soap solution, sometimes with the inclusion of other mild alkalis. There is a "boil off" loss in weight during this process of 17 to 25% depending on the type of raw silk.

Degummed silk can be weighted by the deposition of tin salts within the fibres by treatment in successive baths of stannic chloride, a soluble phosphate, and sodium silicate. Par weighting is a treatment that restores the degummed silk to its original gummed weight on the assumption that there was a 25% loss in weight on degumming. The weighting treatment confers improved draping qualities on the cloth but it can also make silk sensitive to light; also, unless the process is very carefully controlled a direct loss of yarn or fabric strength can result. If required, silk can also be bleached, e.g. with hydrogen peroxide.

Silk can be dyed with many types of dyestuff, including basic, acid, direct, and reactive types. With many dyestuffs inclusion of a proportion of the degumming liquor in the dyebath improves the levelness of dyeing.

The finish of silk is improved by a final treatment in a dilute solution of a weak organic acid, e.g. tartaric or citric. This process, known as "scrooping", restores to the silk its particular lustre, its characteristic feel and rustle, and the peculiar crunching sound when it is squeezed in the hand.

Properties

Silk is a fairly strong fibre and although it does not compare with nylon and polyester in this respect its strength makes it suitable for use as sewing thread in high-quality articles, particularly those made from silk.

Silk absorbs more moisture from the surrounding air than do most of the synthetic fibres, and this property confers considerable advantages: it prevents a clammy feeling where fabric is in contact with the skin since body moisture can be absorbed without the fibre becoming noticeably damp and can be transmitted through the material and into the atmosphere. The presence of moisture also prevents build-up of static electricity and the troubles this causes by the attraction of airborne dust.

Silk has a fairly high natural resistance to creasing. Attempts to improve this and also to apply easy-care treatments have not been very successful, as they impair the unique handle of silk that is one of its most valuable properties.

Fabric care

Although almost all silk fabrics can be drycleaned without particular problems, it is advisable to use a reputable drycleaner. In the case of laundering, care is required, otherwise the special characteristics of the silk fibre can be impaired or the material damaged. The Silk Association Ltd and the Silk Educational Service recommend the following procedure:

(1) Before washing it is advisable to check for colour fastness by wetting a small piece of the fabric in cold or tepid water and then pressing a piece of white material over the wet silk with a warm iron. If there is no colour or only a faint mark on the white material, the garment may be washed.

(2) Silk should not be soaked, boiled, or bleached and should not be washed in a washing machine.

(3) Silk fabrics should be washed by hand in warm suds (40 C) by squeezing gently without rubbing, wringing, or twisting. Mild detergents may be used provided they are not used at higher concentrations than recommended on the package. Products based on soap, e.g. flakes or liquid, are recommended.
(4) Silk should be dried slowly and gently without wringing and then pressed on the 'wrong side' of the fabric with a warm iron while the fabric is still slightly and evenly damp.

Usage

The introduction of man-made fibres and the effects of the second world war were particularly crippling to the silk trade. Competition from man-made fibres began to take effect during the middle thirties. Viscose and, later, acetate were widely used in apparel fabrics and nylon entered the hosiery market just before the war. During the war the area under mulberries was drastically curtailed in favour of food crops so that by 1946 total silk production was less than a quarter of the 1938 level. In post-war years the man-made fibres have established themselves in many of silk's former uses; nylon has almost ousted silk from the hosiery markets of the world due to its durability and uniformity and silk has more recently lost ground to the synthetic fibres in tie fabrics. Silk, moreover, suffers a drawback in that it does not blend easily with other fibres. Nevertheless silk, with its easy dyeability and adaptability to various forms of throwing as well as its excellent feel and comfort properties, is still in demand. Its main uses today are in the production of high-quality fine clothing fabrics, trimmings, sewing threads, surgical sutures, typewriter ribbons etc. Kimono fabrics account for 90% of Japan's silk consumption, and that country is not only the largest raw silk producer (according to the available statistics) but is also the largest consumer and has been a net importer for some years now. Nevertheless the fall in demand for silk over the past 20 years or so, in many western countries, particularly the USA, France, West Germany, Switzerland, and the United Kingdom, must be discouraging to the raw silk-producing countries anxious to earn western currency. Nevertheless, in common with most other textile fibres, the production of silk is increasing steadily.

Attempts are being made by different international bodies to introduce silk farming into a number of the developing countries. As well as the creation of new jobs, ecological advantages are envisaged from having large areas planted with mulberry trees with the possible restoration of soil overworked by primitive farming methods. But these efforts are somewhat hampered by a lack of trained local labour and by epidemics of silkworm diseases, so that, in the short term at least, these schemes are unlikely to fill the gap between raw silk supply and demand.

Conclusion

Silk fabrics are unsurpassed in their beauty with unique properties of feel, handle, and drape. Despite many attempts, renewed in recent years, to produce a synthetic replacement, silk seems likely to remain the fibre of choice in expensive decorative textiles and luxury articles and to retain its special position, particularly in haute couture, as the 'Queen of Fibres'.

Further information

Teachers and others may like to know that the Silk Educational Service, 37 Chinbrook Road, Grove Park, London SE12 9TQ, sells an information pack on silk,

which includes leaflets, a cocoon, and fabric samples (price 50p). A book, *Silk*, by P.W. Gaddum is also available, price 50p. Please enclose SAE when writing to them.

Availability of Silk to The Fiber Craftsman

Pure silk is available in many forms, from the cocoon, to sliver, yarn and silk waste. Our suppliers do their best to stock this variety of silk fiber. But the craftsman's demand for silk is small in comparison with the industrial demand. Therefore, we stand low on the priority of the silk processors. Our suppliers get what they can but they cannot always rely on replenishing specific supplies. The craftsman should stay in touch with his supplier to find out which silk he has on hand.

For this issue of "The Weaver's Journal", we have worked with the following suppliers:

Contessa Yarns P.O. Box 37, Lebanon, CT 06249 (Noil Silk).
Coulter Studios Inc., 118 E. 59th St. New York, NY 10022.(Bleached and natural tussah, plyed and singles, corded silk and slub silk).
Fallbrook House R.D. 2, Box 17, Troy, PA 16947. (100% silk sliver, silk cocoons, thrown silk waste).
C.C. Fitzhardinge - Bailey, St. Audyn, 15 Dutton St., Bankstown, NSW 2200, Australia. (Tussah silk cocoons, partially degummed).
Henry's Attic 5 Mercury Ave., Munroe, NY 10950. (Noil Silk).
Holland Thread Co. 423 Main St., Stroudsburg, PA 18360. (Thrown silk in various sizes and colors).
Kolander, Cheryl 276 North Myrtle, Myrtle Creek, OR 97457. (Tussah silk, bleached and natural, in plyed yarns and heavy singles, silk cord dyed with pre-aniline dyes).
Natural Fibers, P.O. Box 172, Newbury, VT 05051. (Japanese spun silk (140/2), silk cord, tussah and noil silk).
Robin & Russ Handweavers, 533 No. Adams St., McMinnville, OR 97128. (Spun silk in colors, tussah silk, noil silk and silk blends).
Ruegg - Handwebgarne, Todistrasse 52, 8039 Zurich, Switzerland. (Fine quality spun silk, natural and colors).
Straw into Gold, P.O. Box 2904, 5533 College Ave., Oakland, CA 95618. (Dyes and silk for handspinners).
J. Strubin, 93 Donacherstrasse, Basel 8, Switzerland. (Merino silk blend, natural tussah and bombyx yarns, baby camelhair - tussah wild silk top for handspinning).
Tassi Nari & Chatel, 11 Place Croix-Paquet, 69001 Lyon, France. (Fine thrown silk suitable for weft, mill ends from textiles for interiors).

NOTE: The suppliers seldom give yarn sizes. When they do, they compare with wool. For example: size/ply 6/1 equals 3360 yards of unplyed fiber per 1b. One should be cautious, for cotton count is sometimes used too.

The widest color range is available from Holland Thread Company and Ruegg - Handwebgarne. Most silks available to the handweaver are bleached or natural. They can be used as they come or can be home-dyed.

Silk Box

by Clotilde Barrett

I can remember my first silk dress. I was 13 and was to be flower girl at my brother's wedding. What a thrill to hear it rustle as I walked, to watch it ballooning as I ran down a flight of stairs and to feel the cloth fall in elegant drapery folds around me. How I wish that today I could express this joy in silk fiber art. The celebration of the great qualities of silk is what my fiber boxes are all about.

Several species of worms spin cocoons that produce fiber for the artist and for the industry. They produce silk ranging from white to silvery tan to light brown. Silk has various textures: the fine, delicate raw silk is processed to produce a strong lustrous thread while the waste silk is pulled, combed and sorted into spinnable fibers. Silk finishing also adds to the quality of the fiber by making it limp, giving it body, rustle, etc.

The worm spins its cocoon, the industry makes silk available to the consumer, and now it is up to the creative craftsman to do justice to this great fiber. He loves silk and starts to accumulate samples and prices. Pretty soon he has a collection of cocoons, raw silk, thrown silk, silk top, tussah noil, reeling waste and others. The prices range from $100 per pound to 50¢ per pound and it is all pure silk. The cheapest fibers are the waste products of the industry. They are often dyed with fugitive dyes for identification during the manufacture.

Now that the artist has accumulated a wealth of visual and tactile beauty he is ready to use it to express his most personal concept. I thus made fiber boxes to express joy. For the box illustrated, I used a 14" x 17" (36 x 43 cm) plexiglass picture frame available at art supply shops. These are closed white boxes that come with a clear plastic cover. I cut the top of the box open and filled it with silk fiber. I made cocoon shapes with silk using the knotless netting technique; I made moths using the wrapping technique. I used silk thrums left from loom woven projects and I used some dyed fiber, but, more importantly, I used what I felt was essential to make my statement: the joyful recollection of my first silk dress.

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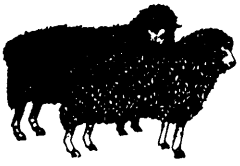

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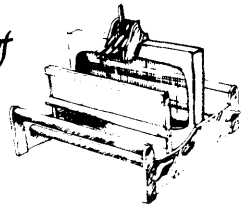

An Introduction to Silk Dyeing

by Joan Lea Walsh

Silk dyeing has always been a second cousin to wool dyeing in the United States for two good reasons. First, it is a luxury fiber, too expensive to toss light-heartedly into the dye pot. Second, we do not produce silk in this country; therefore it is sometimes available, sometimes not. For these reasons, instructions on silk dyeing are often footnotes or less in our books on natural dyeing. Wool dyeing recipes often say "can dye silk", leaving us to conclude that silk and wool can be entered into the same dye pot. While that is not totally wrong, there are refinements we can learn. This article is an attempt to bring together and summarize these refinements and present them in a manner useable to the home dyer.

The article is divided into six sections: (1) Sericulture;(2) Glossary of Terms Related to the Production of Silk; (3) The Physical Properties of Silk; (4) Which Dyes for Silk?; (5) An Outline of Silk Dyeing Procedures; and (6) A Word of Caution. There are also two charts; (1) A Silk Mordant Chart; and (2) Some Silk Dyeing Modifiers.

SERICULTURE

One of the popular misconceptions about sericulture is that there are only two types of silk; the fibers produced by the larvae of the Bombyx mori and tussah silk. These are the silks which are most available in the U.S. However there are other types such as the 'wild silks' that are produced in China and India by wild moths which spin serviceable cocoons, silk obtained from spider webs, and silk spun by a mollusk which lives in the Mediterranean.

For example in Japan from whom we import silks there are at least five types of cultivated silk: the off-white or cream colored silk from the cocoon of the Bombyx mori, a moth whose larvae eat mulberry leaves; the light tan colored silk from the cocoon of the Japanese tussah moth (Antheraea paphia), whose larvae feed on oak leaves; and three other moth species each of whose larvae feed on a specific leaf. Japanese sericulturists, if they wish to work with Bombyx mori silk, plant mulberry orchards, keeping the trees carefully pruned so harvesting is easy. The silk cultivator who wishes a tussah silk, has a carefully tended oak tree orchard, and so on with the other species of moths, the quality of whose silk production has passed the test of time. All of this silk is cultivated and thus reeled silk, thrown silk and spun silk may be produced from the cocoons of these moths.

Other countries, notably China, India and Italy have sericulture industries similar to, though more mechanized, than the Japanese. In the U.S. the fiber of the cocoon of the Bombyx mori is the most valued silk. Whether it was cultivated in Japan, India or elsewhere, we like its lustre and its luxurious hand.

GLOSSARY OF TERMS RELATED TO THE PRODUCTION OF SILK

BASIN WASTE: The broken filaments around the pupae after the silk has been reeled.

BOILING-OFF: See De-gumming.

BRIGHTENING: 1 to 5% olive oil is boiled with sodium carbonate and water to form an emulsion. This is applied at 30° C followed by a treatment with acid which liberates the oil and imparts scroop at the same time.

CHINA SILK: A fine, fine fabric woven of reeled silk from the cocoons of the Bombyx mori.

DE-GUMMING: The process of removing the sericin from raw silk. It is not desirable to remove all the sericin since it protects the silk fiber. If it is all removed, some form of protection must be added to the dye water, usually part of the de-gumming liquor or pure olive oil broken with dilute acetic acid.

DOUPPION (Douppioni): Two silk worms spin a single cocoon. Thus the reeled fiber is made of two strands of silk. Duppioni silk is also the name given to the fabric woven of this filament.

EMBROIDERY FAST: The top degree of wash fastness.

FIBROIN: A protein.

FILAMENT SILK: The single fiber which makes up the cocoon. A filament is compounded of two fibroin elements coated with sericin. Filaments can be hundreds of meters in length and they do not have to be thrown or spun to be useful to handweavers. However, because of the fineness of each filament, several cocoons are reeled off together and then thrown (twisted). The number of filaments reeled off together and the number of reeled groups of filaments which are thrown depends on the intended use of the resulting yarn.

FINISHING SILK: Methods of giving silk smoothness, luster, stiffness and rustle.

FRISONS: The pieces of filament silk, usually on the outside of the cocoon, which can be reeled off and spun, but which are not uniform enough to be used in reeled or thrown silk.

HONAN: A Pongee woven in the Honan area of China.

NETT SILK: The British term for thrown silk.

NOIL: Short fibers that have balled up.

NOIL SILK: Silk carded and spun from silk which contains noils. The dark flecks are pieces of chrysalis. This is a lower grade silk than combed and spun silk as it lacks the traditional silk lustre. Often woven noil silk is wrongly referred to as 'raw silk'. (See 'Raw Silk').

ORGANZINE: This is a plyed warp thread intended for use in weaving organdy. The word is also used to denote any warp thread reeled from 3 to 11 cocoons and then thrown and plyed in a high twist of 75 per inch. (See 'Tram').

PONGEE AND SHANTUNG: Plain weave fabric made with rough, coarse-sized raw silk, such as Douppion silk.

RAW SILK: The product derived from unreeling the silk from cocoons. Filaments from two or more cocoons are brought together to form one continuous strand. Raw silk still contains gum.

SCHAPPE: Spun silk with as much as 20% of the original silk gum.

SCROOP: The crisp, crunchy sound which is added to silk by an organic acid treatment. It is not a physical property of silk and does not indicate quality.

SERICIN: The gum which holds the silk threads together in the cocoon. It is usually 25% the weight of raw silk. When the cocoons are placed in hot water to be reeled, the sericin is not removed, only softened. Likewise, the reeled silk must be placed in hot water so the sericin is again softened and the silk can be thrown. To facilitate weaving with very fine silk, the sericin is sometimes not removed until the goods are woven. As long as the sericin is not removed, the yarns are called 'raw silk'.

SERICULTURE: The controlled growth of domesticated silk worms, usually the Bombyx mori or tussah, in order to produce silk fiber.

SLEAVE: The separation of silk thread into filaments.

SPUN SILK: Waste silk that is combed and spun in a process similar to handling cotton fiber. The best spun silk is made from Frisons.

THROWN SILK: raw silk that has been twisted into a more substantial yarn.

TRAM: The name given to thrown silk which is designed to be used as weft. It is thicker and softer than the warp thread organzine, because there are only 10 or so twists to the inch.

TUSSAH SILK: Silks spun from the Japanese silk worm that is the larva of Antheraea paphia, from the Chinese silkworm A. pernyi and from the silk worm of India, A. myllita. The tan color of this silk results from a diet of leaves containing tannin. Since it is difficult to bleach tussah, it is traditionally used undyed. However, it can be dyed and yields rich colors.

WEIGHTING: A practice, once abused but now regulated by the Federal Trade Commission, of soaking filament or spun silk in a bath of metallic salts. Weighted silk rustles as it moves. This is a very destructive practice as can be seen on old silk taffeta, the folds and creases of which are usually totally disintegrated; a damage which is sometimes erroneously attributed to moths. 'Pure Dye Silk' can have up to 10% added weight. Black is allowed up to 15% weighting before it must be labeled 'Weighted Silk'.

THE PHYSICAL PROPERTIES OF SILK

Silk is a continuous, extruded protein fiber, 9 to 11 microns (.00035 to .00044 in) diameter, and up to 3,000 (3280 ft) meters long. It is less dense than cellulose fibers but similar in density to wool. Its elasticity is good, though less than wool, but its resilience is medium. This means, in terms of woven fabric, that wrinkles recover, but creases hang out slowly. The absorbency and moisture regain is good, so silk can be printed or dyed easily to bright, clear colors. Silk burns slowly, giving off a singed smell similar to burning hair or horn, and sometimes is self extinguishing if the flame source is removed. The heat conductivity of silk is fair and the electrical conductivity is poor, leading to a build up of static electricity. The fungus resistance of silk is good; the main insect pest is the carpet beetle larva.

Lastly, damage done to silk by even mildly alkaline solutions can be extensive, but organic acids may be used.

WHICH DYES FOR SILK?

There is no denying that natural dyes are silk's best friends. Natural dyes are not injurious to the fibroin, or the insoluble protein of a filament of silk. Since the colors produced by minerals, plants and animals are exquisite, the question arises as to why the dyeing of silk is not limited exclusively to natural materials. The answer is that synthetic dyes are easier to use, easier to match, and easier to obtain for most dyers. The oft-quoted and questionable assertion that natural dyes are not light-and wash-fast is moot when applied to silk, because silk should never be exposed over long periods of time to the sun, nor should silk be subjected to heavy washing.

Thus, the question is, which of the synthetic dyes are best for silk?

For light fastness only, those wonderful acid dyes (Carbolan, Kiton, Miyako, etc.) are excellent. Although the colors are not wash-fast, they can be dry cleaned. The lack of wash fastness has an advantage; if the color is off, it can be totally stripped by heating in a slightly alkaline bath at 180°F (82°C). Then the bath can be made slightly acid with acetic acid and after adding 20%

Glauber's salt, the silk can be re-dyed in the same bath by proceeding as in dyeing with acid dyes. Wool and silk can be dyed in the same bath with acid dyes. If you wish the same depth of color on both, add 10% Glauber's salt and 5 - 10% bisulphate of soda. Remembering that wool takes a deeper color when treated at a boil, keep the dye bath at 105°F - 110°F (40°- 43°C); at the lower temperature and with more acid the silk will take up more color.

Fiber-reactive dyes (Procion "MX", Levafix and Cibacron) are both light-fast and wash-fast. The usual recipe calls for alkaline assistants which tenderize silk, particularly when combined with hot water. If you use these dyes, use them cool. Another method of dyeing with fiber-reactive dyes is to use them as you would the acid dyes, that is, use the fiber-reactive dye in the acid dye recipe and get the best of both classes of dye.

The pre-metallized class of dye uses an acid bath at 180°F (82°C) or less. Keep the bath at the proper acidity or it will streak. These dyes are highly recommended for silk. They are more light- and wash-fast than the fiber reactives, but require more careful use.

The union dyes (Cushing, Cushing All-Fiber, and Putnam) are fair to good in light-fastness and fair in wash-fastness. They are not as light and wash-fast as the fiber-reactive or pre-metallized dyes, but they nonetheless have many uses for the textile artisan. Please note that these dyes sometimes contain Glauber's salt, or ask you to add regular table salt. These salts will tenderize the silk, so do not exceed the amount used or the time needed to develop the color. Follow-up the dyeing with a good rinse, neutral soap bath and diluted vinegar rinse.

Although vat dyes are the fastest dyes known, they are of questionable use because they require a hot alkaline bath, the reagents are expensive and the dye itself is expensive. But, if you need silk that is embroidery-fast, the highest classification for wash-fastness, then you need vat dyes. Take advantage of a vat dye workshop, if possible, because nothing can take the place of seeing a vat being developed, used and maintained. If you are a vat dyer, use the exact amount or less of the alkaline reagent called for in the recipe and rinse silk thoroughly to wash off any extra alkali that might be coating the silk fibers. For those who have an indigo vat, try oxidizing silk in water instead of air.

Basic dyes are not recommended because of their poor wash-fastness, however, if the bright colors of basic dyes are what is needed, their wash-fastness can be improved with an afterbath of tannic acid (1% of the weight of silk at 140°F (60°C) for 20 minutes).

Some direct dyes can be used on silk but they are limited in number. Naphthol dyes are effective on cellulose and Disperse dyes on synthetics. Therefore these two classes of dyes are not used for silk.

AN OUTLINE FOR SILK DYEING PROCEDURES FOR NATURAL AND SYNTHETIC DYES

In order to avoid frustration at the dye-pot, pick a silk that will handle easily. Look for a long staple of two inches or more with a good twist. Test to see if the silk breaks easily. Stay away from reeled silk or thrown silk until you master silk dyeing techniques.

A. Preparing the silk for dyeing:

1. Skein and weigh.

2. Attach 4 or 5 ties using ties that will not absorb dye. (The Japanese use no ties. The professional dyers have large tubs and can avoid tangling by moving the skeins back and forth instead of up and down). Some silk expands when wet so make the ties secure but loose.

3. Attach two long and strong ties to the group of skeins to be dyed. Slip one tie over a rod placed on the rim of the mordant or dye pot, making sure the skeins are totally immersed. Alternate the tie that goes over the rod to insure even dyeing.

4. Scour with pure olive oil soap, tincture of green soap, Ivory, or any other neutral soap. Use 4 to 5 gallons (15.2 liters) of water to 1 pound (454 g) of silk in a non-reactive pot. Hold at 180°F (82°C) for 30 minutes and remove. If you have some raw silk, de-gum the fibers by increasing the amount of soap and lengthening the time in the bath. Rinse and use immediately or dry. While it is true that too much sericin will impede the dyeing, a little will help to develop an even dye job. Thus the liquid from the scourings of raw silk is often saved and used as a leveling agent in the dye bath, eliminating the need for Glauber's salt.

5. If silk has been scoured and dried, it must be wetted out before mordanting or dyeing. Hold it in 95° to 100° F (37°C) water for 30 minutes or soak overnight in cool water.

B. Mordanting:

Use 4 gallons (3.7 liters) of water for 1 pound (454 g) of silk in a non-reactive pot. (Skip this step for synthetic dyes).

1. A cool water method, cold from tap or 110°F (43°C): Dissolve the required amount of mordant in hot water and add to bath. Stir. Enter wet silk and work one-half hour then let steep overnight. Rinse and use immediately or dry and store. (Chrome mordant will not work with this method).

2. Simmering water method for chrome and other mordants: Dissolve mordant in hot water and add to the mordant bath. Enter wet silk, raise temperature to 180°F (82°C) and hold for required time. Rinse and dye immediately if desired, or let cool in the bath overnight; dry and store. Keep in mind that chrome is light sensitive and should always be kept covered. If the dye results on different kinds of silk are not the same, this is due to the character of the silks and not necessarily to mordanting or dyeing methods.

C. Dyeing:

1. For synthetic dyes, follow manufacturers' instructions using suggested modifications found in 'Which Dyes For Silk' and 'A Word of Caution'.

2. Natural dyes: Prepare the dyebath by heating or simmering dyestuff to extract dye. Add dye extract to 4 gallons (3.7 liters) of water for 1 pound (454 g) of silk. Use non-reactive pot. Enter wetted out silk. Let it simmer until color develops; another procedure is to prepare a steeping or fermenting bath as for wool dyeing and let color develop as long as necessary. Remove silk, add modifiers and re-enter into dye bath. One may either enter the silk into a mordant afterbath of the same temperature as the dye bath or cool the silk without rinsing and enter into a cool or warm mordant bath. The after-mordanting time depends on the result desired. Rinse, wash, rinse.

If you wish to give the silk scroop, after the last rinse emulsify a small

A SILK MORDANT CHART FOR USE WITH NATURAL DYES

(Amounts given are for 1 pound (454 g) silk yarn or fabric and 4 gallons (3.7 l) of water in a non-reactive pot).

MORDANT	AMOUNT	ASSISTANT	TEMPERATURE OF MORDANT BATH	TIME IN BATH
Potassium Alum (Alum)	4 oz	Potassium Bitartrate (Cream of Tartar) 1 oz.	Cold or Warm (Room temperature or 110°F) Hot (180°F)	Enter and leave overnight 1 hour (then remove)
Bichromate of Potash Potassium Dichromate (Chrome)	1 oz		Hot (180°F)	½ hour (Then remove)
Alum Chrome Potassium (Chrome Alum)	3 oz (Or less)	Add 1 oz Cream of Tartar if bath tests alkaline	Hot (180°F)	½ hour (Then remove)
Copper Sulfate Blue Vitriol Cupric Sulfate (Copper)	¼ to ½ oz		Cold (Room temperature) Hot (180°F)	Enter and leave overnight 1 hour
Ferrous Sulfate Copperas (Iron)	¼ to ½ oz	Add 1 oz Cream of Tartar if bath tests alkaline	Cold or Warm (Room temperature or 110°F)	Enter and leave overnight
Stannous Chloride (Tin)	¼ to ½ oz	Cream of Tartar 1 to 2 oz depending on pH	Cold or Warm (Room temperature or 110°F) or Hot (180°F)	Enter and leave overnight ½ hour

NOTE: Ferrous Sulfate and Stannous Chloride are destructive to silk over a period of time. For fine silk with high lustre use low temperature methods whenever possible.

110°F = 43°C
180°F = 82°C
1 oz. = 28.4 g

SOME SILK DYEING MODIFIERS FOR USE OF NATURAL DYES

(Amounts given are for 1 pound silk yarn or fabric and 4 gallons of water in a non-reactive pot).

MODIFIER	AMOUNT	TEMPERATURE OF BATH	LENGTH OF TIME IN BATH
Ammonium Alum	½ cup	Cool dyed silk and enter into room temperature bath	Until modification has occured
Chrome After-mordant	(See Silk Mordant Chart for recipe)	Hot (195°F)	½ hour (then remove)
Copper After-mordant	(See Silk Mordant Chart for recipe)	Same as dye bath or Cold	Turn off heat and let cool Enter and leave overnight
Tannic Acid or crushed oak galls	8 oz dissolved in hot water and added to hot or cold water	(Usually this modifier is used in conjunction with an Iron Modifier. Dip from the dye bath to the Tannic Acid Bath to the Iron Bath and repeat several times. It can be used by itself, hot or cold.	
Tin After-mordant	(See Silk Mordant Chart for Recipe)	Same as dye bath	Turn off heat and let cool
Vinegar	¼ cup to 1 gallon of water	Hot or Cold	Until modification has occurred

amount of pure olive oil (1 tablespoon (14 ml) to a gallon (3.7 l) of water) with sodium carbonate in boiling water. Let cool to about 90°F (32°C) and pass the silk through this bath. Then pass the silk through a bath of weak organic acid, such as dilute acetic acid, dry and finish.

D. Drying:

1. Let skeined silk drip dry. Remove the ties as soon as there is no possibility of tangles. A fan aimed at the skeins from 10 to 15 feet (3 to 5 m) away hastens the drying time. Twice a day turn the skeins on the drying rack. This distributes the moisture and facilitates evaporation.

2. Do not use artificial heat since silk, as well as wool, needs some moisture.

E. Finishing:

1. Finishing spun silk: When the skeins are nearly dry or are dry, place a skein over your wrists and gently snap the skein. The aim is to aerate, straighten and stretch the fibers. The luster of silk is due to its smooth surface. Finishing is an effort to bring back the original luster. If your silk had no luster to begin with, none can be developed.

2. Finishing reeled or thrown silk: Instead of using your wrists as with spun silk, hand the skein on a smooth wooden bar and straighten out the fibers with a smooth stick until they are parallel and all kinks are out. Do this only with dried silk. This is a time consuming process. The silk is now ready to use.

A WORD (S) OF CAUTION

In conclusion, here is a brief list of the refinements that we need to bring to silk dyeing if we are accustomed to dyeing wool. It serves as a list for beginning dyers, too - a few facts to keep in mind while developing beautifully colored silks.

First and most important, silk does not like alkaline solutions. As with meat tenderizers, these solutions will 'tenderize' or break down fibers. Therefore:

1. Buy pH test papers at your drug store and use them. 0 - 7 pH is acid, 7 pH is neutral, 7 - 14 pH is alkaline.
2. Use neutral or acid soaps. Test the soap solution with pH papers.
3. Avoid mordant or dye recipes which call for alkalies. This includes the madder red recipe which uses lime to help extract the dye. (If you do use this recipe, after the dye is extracted, try lowering the pH to near neutral before adding wet silk).
4. Remember to use Cream of Tartar when it is called for - it helps to acidify the bath.
5. Feel free to use Potassium Dichromate as a mordant or dye - it is an acid mordant.
6. Silk is not harmed by boiling, unless the dye liquor is alkaline.

Secondly, silk does not conduct electricity well. This means that with excessive handling, static electricity builds up and makes the fibers behave in a wild, irrational manner with the result that silk sticks to hands and to itself. Handle silk as little as possible and if the electricity builds up, let it rest.

Thirdly, if you have heard the old saw "Silk boiled is silk spoiled" remember that it is not the temperature that harms silk, but the snarls and tangles that result from the boiling action. Silk does not felt, but it does matte, destroying its luster. So, to preserve the luster:

1. Tie skeins loosely but securely.
2. When moving skeins in the scouring, mordanting or dyeing bath, move slowly up and down. Do not move in clockwise or counter-clockwise motion.

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Silk Dyeing

This essay on silk dyeing is the result of limited research in the silk and dye literature and of experimentation in the studio of The Weaver's Journal. Our readers should be aware that the industry with its elaborate testing equipment is continuously doing research on silk dyeing and finishing. With the limited resources of a fiber craftsman's studio we were only able to do relatively few experiments and barely scratch the surface of the potentials of silk dyeing.

We have worked with acid dyes (Keco acid from Keystone and Ciba-Kiton), with fiber reactive dyes, (Procion type M) and with household dyes (Cushings).

The wash and light fastness depends on the type of dye, the manufacturer, the color, and the method of application. The selection of dyestuffs depends on the technique of dyeing and on the successful results from experimentation.

Whenever a hot bath was possible, we have found that Cushing dyes consistently give satisfactory results. However, as many home dyers today prefer a more

scientific approach to dyeing we feel that we should share our experiences with the other dyes. In general, we have found that fiber reactive dyes gave better results than acid dyes but that,with either type of dye,the dyeability varies a great deal from one color to another.

We did not do any vegetal dyeing.

As always, dyes should be handled with great caution. Use rubber gloves and wear a dust and pollen mask when handling dry dyestuffs.

As it is preferable to use the metric system in working with dyestuffs, all our measurements are given in the metric system. To convert pounds and ounces in grams, the following equivalent may be used:

1 ounce = 28.35 gr.
1 pound = 453.60 gr.

Our recipes are given for 100 gr. of dry, clean fiber. Only bleached and white silk will give bright colors.

If the water is hard, soften it with Calgon. For each liter of water use 3 gr. Calgon (1 tbsp. per gal.)

Scouring silk

The fiber is entered into a bath of 4 cc. Synthrapol per liter of water (1 tbsp. per 2 gal.) and brought to a temperature of 105°F (40°C) (Synthrapol is a synthetic detergent and fabric softener).

The dyeability of unfinished silk seems superior to that of finished silk which has been processed by brightening and scrooping. It seems also that a certain amount of gum in the dyebath improves the dyeing process. Sericin acts as an equalizer.

Yarn dyeing

Silk swells a great deal in water and tangles easily. If amounts of 1 lb. (454 g) of fiber or more have to be dyed, there is a tendency for overcrowding which results in uneven dyeing. One solution is to dye the warp and the weft separately. The weft can be wound in skeins, loosely tied. To avoid an unwanted tie-dye effect, the yarn under the tie should be checked frequently. To dye the warp, measure it as usual but do not cut either end of the warp chain. Instead, tie the ends together to form a skein. See Fig. 1.

If several skeins have to be dyed at once, whether they are regular skeins or 'warp skeins' link them into a chain to avoid tangles. See Fig. 2.

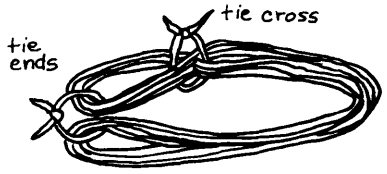

Fig. 1

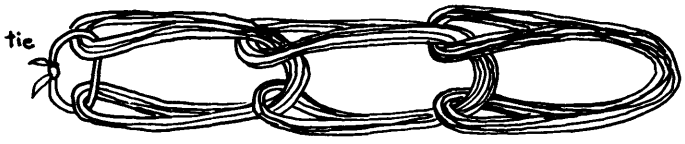

Fig. 2

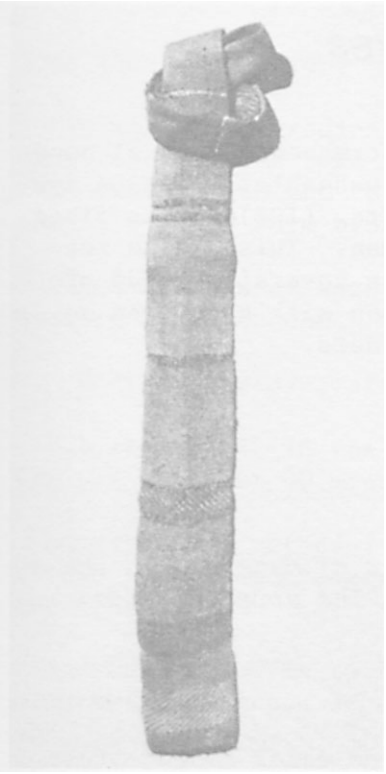

Plate 1

Necktie woven by Willy Bottema

Piece dyeing

Cloth which is woven with various fibers, such as synthetics, cotton, silk, and wool often shows subtle color variations when piece dyed. Colored yarns may be woven into the cloth if they would be enhanced by being over-dyed. See Plate 1.

Warp painting

Warp painting requires a cold water dye technique. This process usually requires a post-treatment to set or cure the dye.

There are several ways to dress the loom for warp painting. The one we found the easiest will be described here.

Measure the warp and dress the loom as usual. Tie the warp to an auxiliary front rod which is attached to the regular front rod with a long lacing cord. Fig. 3.

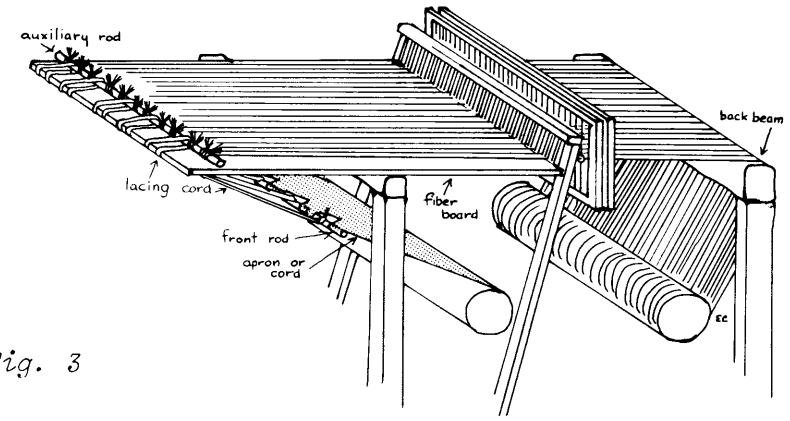

Fig. 3

Pull the auxiliary rod forward to expose the area of warp to be painted in front of the harnesses such as, for example, the entire front part of a shirt. Stretch that warp area over a piece of fiber board covered with the cartoon and protected with a sheet of clear plastic. The cartoon should be drawn with a heavy felt pen. Hold the warp taut.

Apply enough paint to soak the fiber through. Paint the lightest colors first. The paints may be mixed in a bowl or they may be blended by applying new colors or different shades while the first application is still wet. For clear colors and well-defined areas, the warp should be allowed to dry before new paint is applied.

Let the warp dry. Remove the board and clean the plastic sheet. Tighten the warp by cranking the cloth beam. Comb the painted warp by swinging the beater back and forth. Wind the warp back on the warp beam. Start weaving. Paint and weave the other sections as needed for the project. Remove the woven cloth from the loom for the post-treatment of the dye.

There are many more techniques of applying dye to fiber, such as resist dyeing, stenciling, etc. Such a vast field of experimentation lies ahead of us.

Silk and Fiber Reactive Dyes

Fiber reactive dyes are so named because they make a permanent chemical bond with the fibers. They have good light fastness and are washable. Procion dye (M series), developed by Imperial Chemical Industries, Std. (ICI) is the fiber reactive dye most easily available to the studio craftsman. This dye is recommended for viscose, rayon, cotton and linen. There are several methods of applying it. However, our experiments with procion dye on silk have been so successful that we would like to share them with our readers.

Yarn Dyeing

Recipe: for 100 gr silk
1 gr dyestuff (1%) for medium light shade.

The color value of the dyed goods depends on the amount of dyestuff in the dyebath in relation to the weight of yarn being dyed. The strength of a color is defined in terms of percentages:
pale - less than 1 %
med. - 1 to 3%
deep - 3 to 5%

20 to 55 gr uniodized salt (20 to 55%), divided into three equal amounts (use larger amount for darker shades).
9 to 15 gr washing soda (9 to 15%), dissolved in small amount of water.
2 liters water (20/1 liquid ratio).

Paste the dye in a small amount of water. Add the dye to the water at a temperature of 140°F (60°C). Place the scoured wet fiber in the dyebath and stir for 10 to 15 minutes: add the salt, one portion at a time, at 5-minute intervals. Stir for 20 minutes more. Add the washing soda. Continue dyeing for one hour, stirring frequently. Rinse well and dry.

Painted Warp

A. Painting base

	1 quart	1 liter
hot water	1 pint	500 cc
Calgon	1 tsp	3.5 g
urea	1 cup	180 g
cold water	1 pint	500 cc
sodium alginate	4 tsp	15 g

The urea helps dissolve and fix the dyestuff. Sodium alginate is a thickener.

Dissolve the urea and Calgon in hot water, then add the cold water. Blend the sodium alginate into the liquied. Beat until clear.

This painting base can be stored indefinitely in a covered jar placed in the refrigerator.

B. Dye mixture

painting base	1 cup	250 cc
baking soda	1 tsp	3.5 g
dye (amount varies according to desired strength)	1 tsp	3.5 g

Note that several dry dyestuffs may be mixed.

Mix all the ingredients, noting that the dye should be used within 3 to 8 hours once the soda has been added. All our dyes were applied with a brush. We limited ourselves to the following dyes: brown, black, cool red, warm red, yellow, cool blue, and warm blue.

Clean strands of warp yarn were kept on hand to dip into the dye-paint and quickly dried to check the intensity of the color.

C. Setting the dye, after it has been allowed to dry.

Put the fabric in the dryer (hot cycle) together with a few wet rags. Tumble dry for at least 30 minutes. This is the method we have favored.

An alternate method is to steam the fabric with a hot iron and wet press cloth. Apply heat everwhere at least 5 minutes. Repeat on the other side of the fabric.

Another method is to bake the fabric in a 285°F (140°C) oven for 10 to 20 minutes above a pan of steaming water.

D. Rinsing

Rinse the dyed fabric in <u>running</u> water until all the loose dye has been removed. Then wash the fabric in hot soapy water.

PROJECTS DONE WITH PAINTED WARP TECHNIQUE

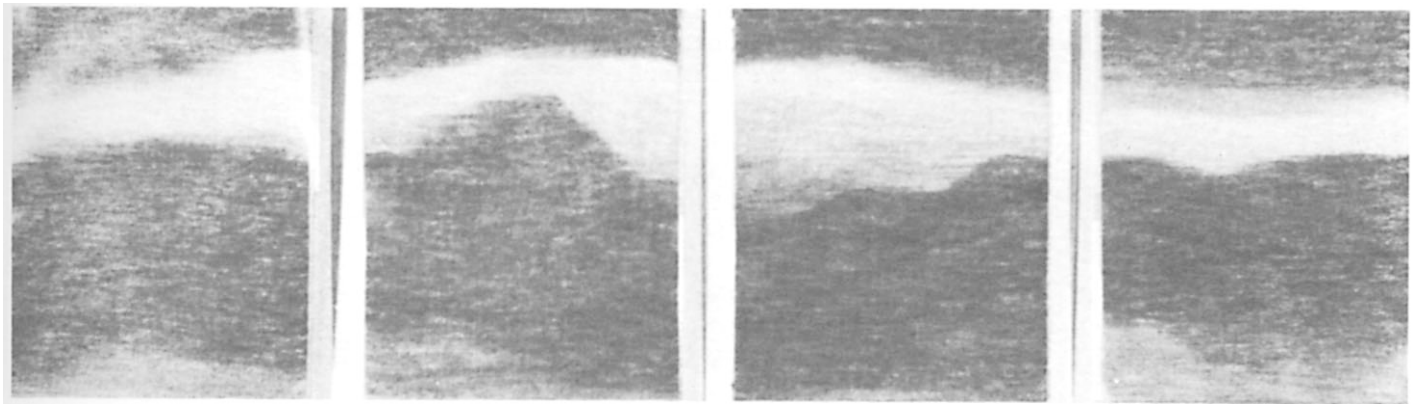

Plate 1 Mountain Landscape of the West

WARP: 2 ply tussah noil silk, bleached, from Coulter Studios
WEFT: tussah silk, natural color, thinner than warp
SETT: 15 e.p.i. (60/10 cm)
WEAVE: plain weave.

The abstract panorama of the Colorado mountains (Fig. 1) came off the loom in one 60 inch (152 cm) long strip, 18 inches (46 cm) wide. After finishing, it was cut into four views and mounted on plexiglass frames (See-thru 11" x 14" (28 x 36 cm) by Structural Industries, Inc.).

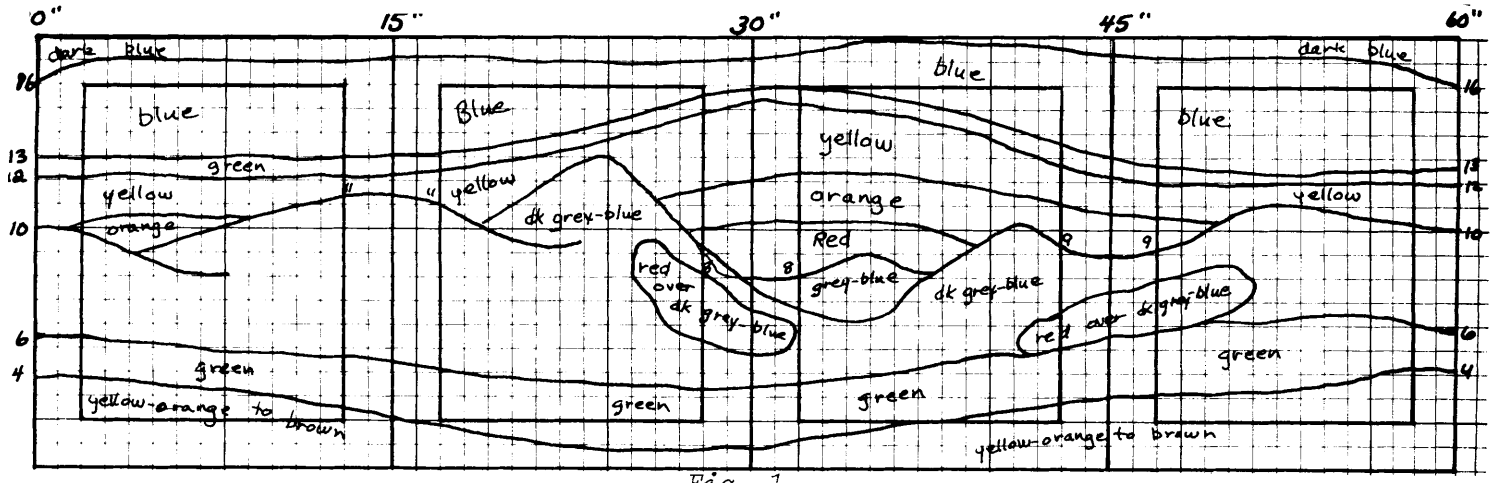

Fig. 1

Fig. 1 shows a 60" (152 cm) long mountain landscape drawn to scale 1 sq.= 1 inch (2.54cm). From that sketch, a full size cartoon was drawn on newsprint and taped under a plastic sheet beneath the warp to be painted.

Plate 2 - Gulls at Sunset by Iris Richards

WARP: 140/2 spun silk from Natural Fibers
WEFT: same as warp
SETT: 60 e.p.i. (240/10 cm)
WEAVE: 2/2 twill

This small, subtle painted warp picture 15½" x 7" (39 x 18 cm), was mounted on a blue matt and framed with the 11" x 14" (28 x 36 cm) See-Thru plexiglass box.

Plate 2

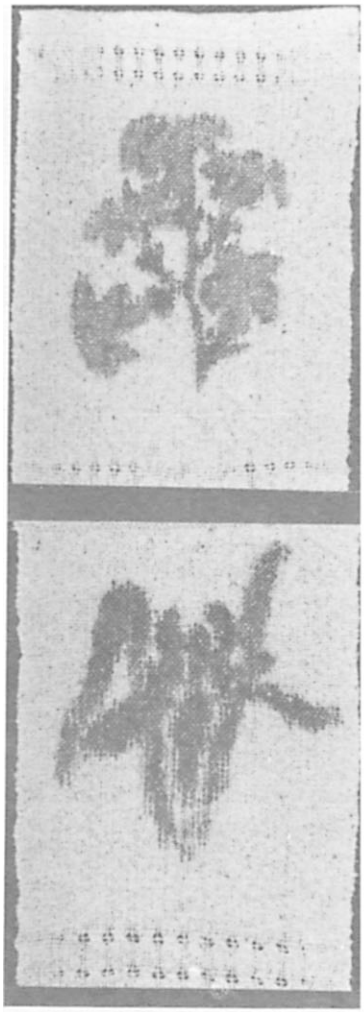

Plate 3

Plate 3 - Wildflowers of Colorado by Jeanne Richards

WARP: single noil tussah silk
WEFT: same as warp
SETT: 22.5 e.p.i. (90/10 cm) in a 15 dent reed

This small sketch of wildflowers 4" x 4" (10 x 10 cm), is a study for a larger project: a painted warp and Atwater Bronson lace silk screen.

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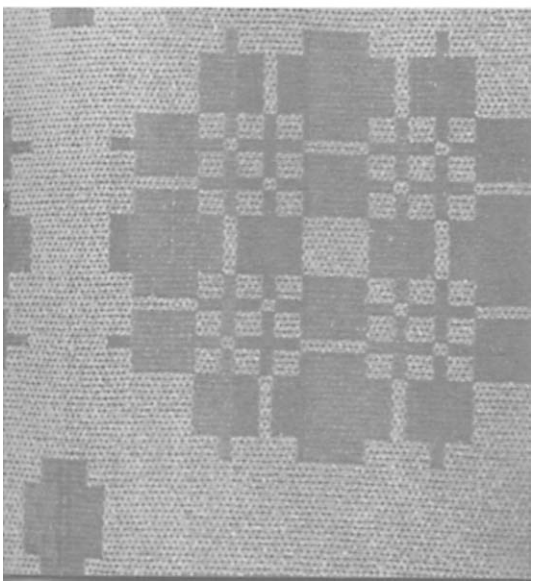
Handwoven Silk Garments

It seems that weavers who work with silk quickly become advocates of this great fiber. Their enthusiasm is expressed in this series of garments.

Blue Silk Dress by Philis Alvic



For a very special event I needed a very special outfit. At the opening of an exhibition of my wall hangings, I would be literally surrounded by my work; therefore the dress I wore had to be compatible with them but also very distinctive. From past experience I knew that construction of the garment must be unusual. Conventional designs in clothing don't show off one's skills as a weaver. And, worst of all, you have to go around telling people you actually wove the material. I wanted it to be apparent in looking at me that my dress was also one of my creations.

Since most of my hangings are woven in Summer and Winter, I decided on that weave structure. During the last year I had been fascinated by the patterns in Ruth Holroyd's "Jacob Angstadt Designs". The central design was chosen from there and adapted to the Summer and Winter threading. Two large figures form a wide border on both the blouse and the skirt. I wanted to focus on the design and not confuse it with multiple repeats. However, it was necessary to add a small transitional figure between the central figure and the plain areas.

Silk was selected as the fiber because of its nice draping qualities and easy care. Also I have found it no more difficult to weave with silk than cotton. When one spends so much time with weaving, it is better to use more elegant materials and come up with a much more luxurious product. A fine noil was chosen for the warp and a 2 ply noil for the weft.

The beautiful soft gray blues and gray greens of the warp were in random stripes, alternating two very similar colors in the same stripe. These stripes were not in any way coordinated with the central design. The warp was set at 30 threads per inch, 2 per dent in a 15 dent reed. The light blue weft was woven in doubles (1-pattern, b tabby, 2-pattern, a tabby, 2-pattern, b tabby, 1-pattern, a tabby).

The construction of the dress was very simple. The sleeves were sewn onto the body of the top in a flat straight seam, matching up the small figures. A small rectangle was cut for a neck opening and finished back with interfacing. The warp at the bottom of the blouse was tied in an overhand knot and let fall in long fringe. The skirt was two lengths sewn up the sides, allowing a generous slit for easy walking. To minimize bulk at the waist, the band of the skirt was a lace casing with elastic inserted.

The outfit is comfortable to wear and definitely marks me as a weaver. It has been worn on numerous occasions since its grand appearance. The care of the silk is very easy. The garment is hand washed, water extracted in the washing machine spin cycle, line dried, and then steam pressed.

A Wedding Dress by Eleanor Best

This silk wedding dress was woven for my daughter. The body fabric was woven with Contessa's 8/3 metric count silk set at 15 ends per inch (60/10 cm). The dress was made from a Vogue pattern. Pattern pieces were used to determine the size and placement on the loom for the hand spun silk embroidered areas. The embroidery on the skirt (train included), sleeves, and bodice were planned by drawing the motifs on the pattern pieces. These motifs were then transferred to cartoons from which they were embroidered directly on the fabric while it was under tension on the loom. The pearls were applied at the same time using Contessa unplied silk. The headpiece was made by covering a milliner's form with the same fabric as the dress and then adding the back stitch embroidery and pearls.

The Weaver's Journal

SHOP OWNERS

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Ikat Shirt by Karen Utzinger

"Hey, Mom, how about weaving me something?" suggested my 14½-year-old as he watched me finish a commission for someone else.

That friendly prompting and thoughts of the shoemaker's daughter, who goes around barefooted because her father is too busy making footgear for his customers to outfit his own child, resulted in a custom-fashioned Tussah silk ikat shirt for Kirk.

What evolved from his original desire for a Mexican-style overshirt, ended in a jiffy pullover top modified from Simplicity pattern 8318. Warp was a beautiful 2/12's Tussah silk (made in England for Robin and Russ) sleyed 36" wide at 15 e.p.i. It consisted of one center section 4" wide, four sections 3" wide and 10 sections 2" wide, four and a half yards long.

To achieve a balanced, yet loose, free type of patterning, similar size sections were treated in pairs or groups of four during dyeing and later manipulated as they were tied on the loom so that like color areas would appear in approximately the same location on each side of the shirt but would have somewhat different patterning.

The resist was done by wrapping the paired sections with waxed cotton cord and/or strips of plastic cleaner's bags and by tying overhand knots in the warp itself. In some areas, I tied one or two knots on top of the original one, untying one between dyebaths. The knots gave a marvelous color-blending effect and a circular, mirror-image character to some of the dyed areas.

Because I planned to use the same natural silk--but undyed--as weft, I purposely did a great deal of wrapping to protect the natural background.

The warp went through three dye baths in this order: Putnam's black followed by Cushing's buttercup yellow and golden brown, with unwrapping between dyebaths to expose previously undyed areas. The result was a modulation of golds, browns, greens and blues on a natural silk background. Putnam and Cushing are household dyes and I followed the instructions on the package label.

After being cut from the loom, washed and pressed, the final piece measured 3½ yards by 31 inches. I suspect the reason for greatest shrinkage occurring in the weft, with very little at all in the warp, was due to the previous dyeing of the warp. It yielded one man's shirt (34-36), one 23" uncut section and numerous other precious bits and pieces good for blouse insets for me and my two daughters.

It was a fun and challenging project, the greatest reward from which had to be the kids' stamp of approval, "Say, that's cool, Mom!".

Ikat Dress by LaVonne Schreiber

This is a silk dress that I will be wearing for years. It is comfortable, stays free of wrinkles and is easy to care for. I wove the silk yardage in plain weave with a painted warp. For assembling the garment I shose a Vogue pattern.

The yarn, a single silk noil, needs special handling on the loom. The weft had to be beaten in with the shed open to minimize the friction and thus avoid warp breakage. For the painting of the warp, the entire warp (8 yards long) was stretched out. NAZ-DAR silk screen textile ink was thinned by mixing it with mineral spirits. The dyes (red, blue, green and grey) were painted in stripes across the warp. During the dressing of the loom, the warp was adjusted to create the desired patterns. After the fabric was woven, the fabric was heat set in a clothes dryer on the hot cycle. The fabric was then washed and sewn.

Ikat Kimono by Lynn Barnett-Westfall

This was my first attempt at warp ikat (kasuri). It was woven in traditional Japanese strips, sewn together by hand. The colors are white and blue.

The silk warp was sett at 18 e.p.i. (70/10 cm). The weft was a much finer silk. The loom was threaded 14" (35.5 cm) wide which is the traditional Japanese kimono width.

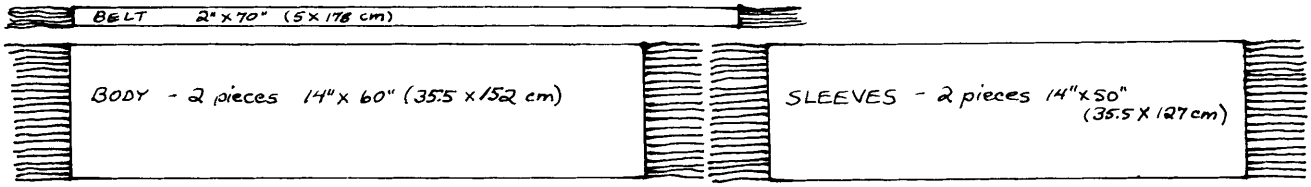
I tied the resist areas while the warp was still on my reel. I tied waxed linen over 'baggies' (since then I have started using plastic specially intended for ikat). I dyed the 11-yard long warp with Dylon and dried the warp with the ties still on.

The construction of the kimono is illustrated in Fig. 1.

Do allow for shrinkage and adjust the length of the body panels to your height.

The white trim on my kimono is just a part of the warp that I left undyed.

The completed kimono has been machine washed.



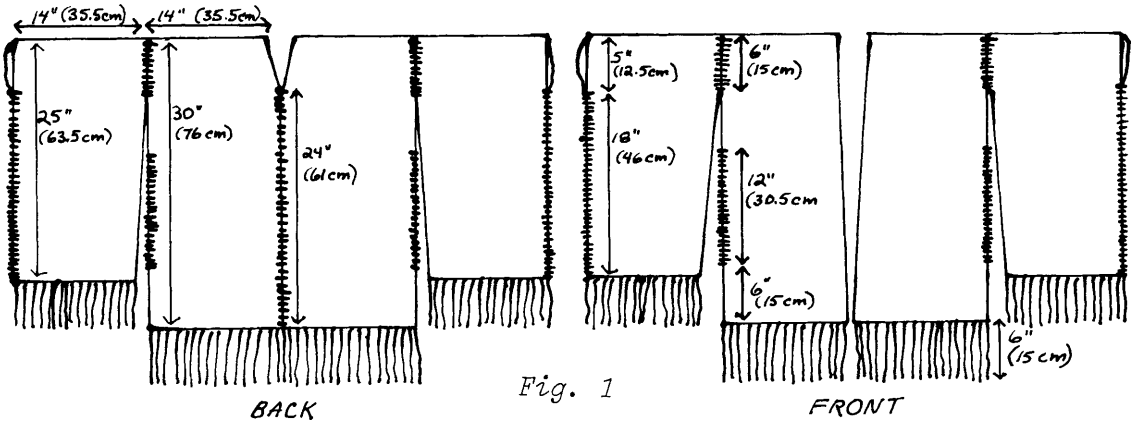
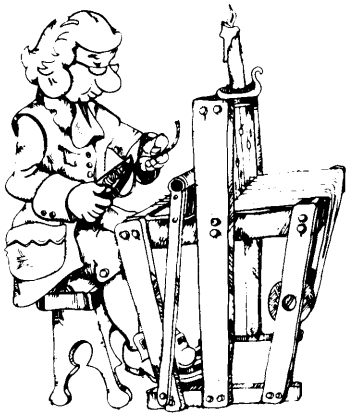


Fig. 1



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Doup Leno

Introduction

A doup is a special heddle through which a warp end is threaded which will cross one or more other warp ends.

A handweaver's doup is a simple cotton string loop (buttonhole cotton or carpet warp), attached with a lark's head knot on the upper heddle rod and about 1" longer than half a regular heddle. See Fig. 1.

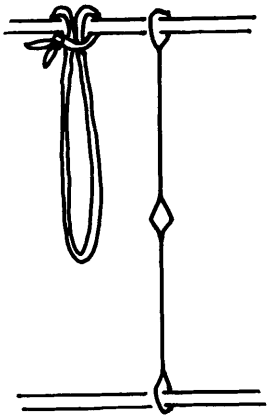

Fig. 1

In order to make several doups of the same length, the original doup is removed from the loom and laid on a wooden board. See Fig. 2.

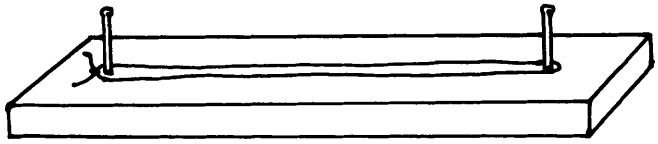

Fig. 2

Two 1½" finishing nails are driven into the board the length of the loop apart. This is used as a gauge to tie all the other doups. Use square knots to tie.

The doups are always put on harness 1. Fig. 3 shows the principle of the crossing of two warp ends.

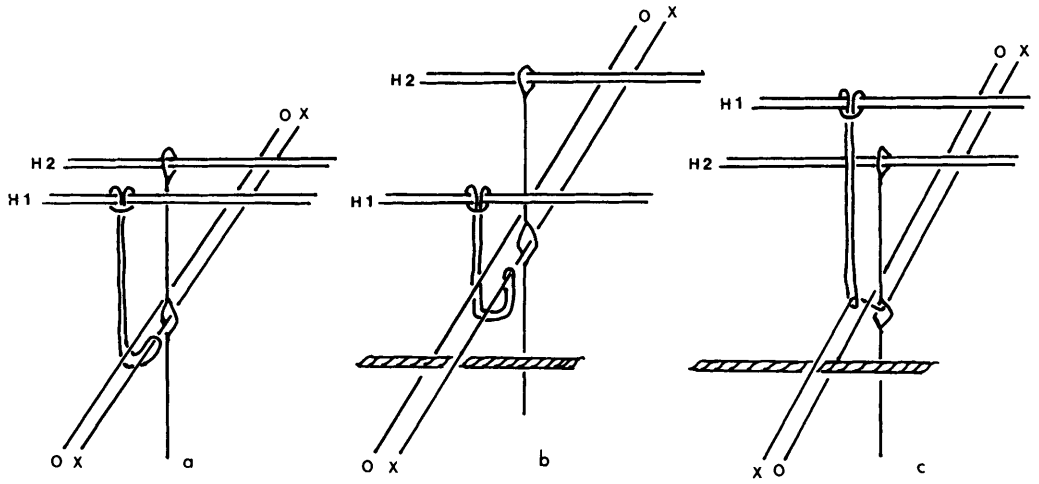

Fig. 3

WORKSHOPS AND LECTURES

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Some of the favorite subjects are: Shadow Weave, Doup Leno, Rug Techniques, Loom Controlled Designs, Summer and Winter.

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a - Neutral position. The crossing warp end X is threaded through a regular heddle on harness 2 and through a doup which goes under the standing warp end O. For the simplest doup leno technique, the standing warp does not have to be threaded on any harness.

b - H2 is raised. The crossing warp X is above the warp end O and the weft is thrown in this shed.

c - H1 is raised. The crossing warp end X is pulled up to the left of the standing warp end O and the weft is thrown in this shed.

TWO HARNESS LENO

A simple 2 harness application of doup leno is a spaced warp project. The cloth to be woven in plain weave is threaded on harnesses 1 and 2. The standing warp end of the leno twist at either side of the plain weave is not threaded.

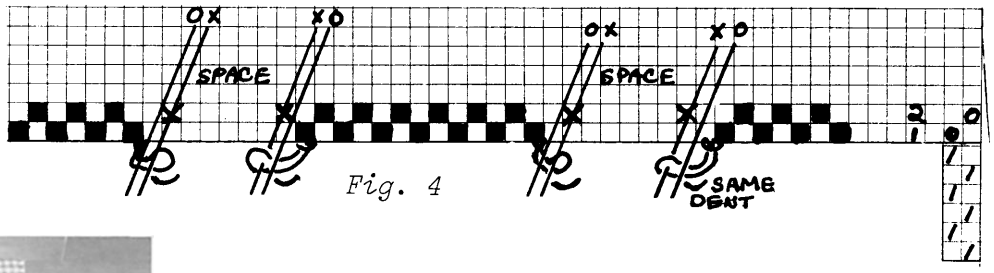
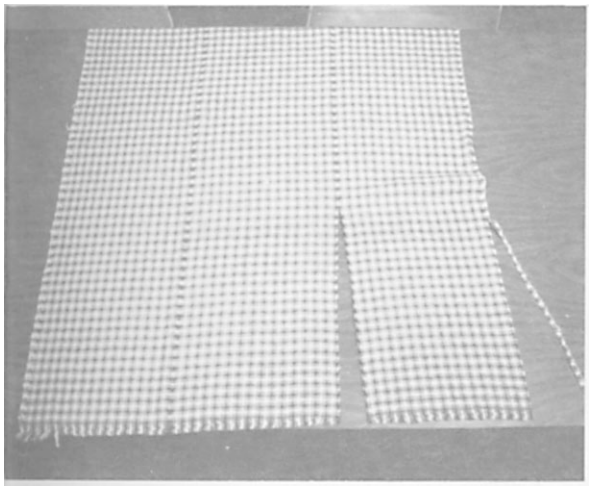


Fig. 4



The crossing warp end is on H2. The standing and crossing warp ends have to be sleyed in the same dent. See Fig. 4.

The plain weave men's neck scarves illustrated in Plate 1 are woven in sets of three side by side on a 2 harness loom. The scarves are not hemmed. The leno twists at the edges keep the warp from unravelling. The selvedges are cut away and the scarves are cut apart where the warp has been spaced. The set-up is shown in Fig. 5.

Plate 1
Men's scarves woven by Ellen Champion

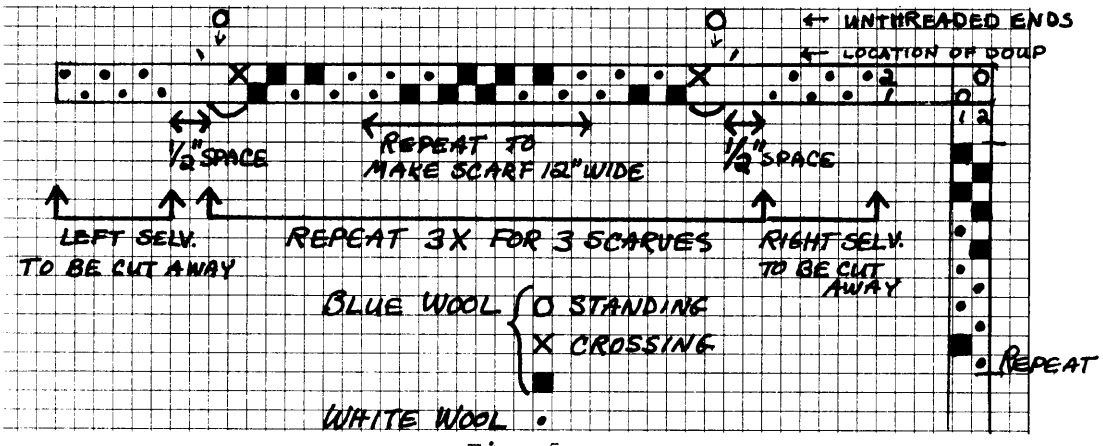


Fig. 5

WARP: blue and white 2/20 Botany wool
WEFT: same as warp
SETT: 15 e.p.i. for the plain weave
SLEY: crossing and standing ends in same dent
8 empty dents between each scarf
8 empty dents between scarves and cut-away selvedges

The color order of the weft picks is the same as the warp ends. The cloth was washed in a washing machine in warm water before cutting it apart.

Note: When the standing thread is not threaded on a harness it is sometimes necessary to hold it down between the harnesses and the back beam as it has a tendency to float above the race of the beater. See Fig. 6.

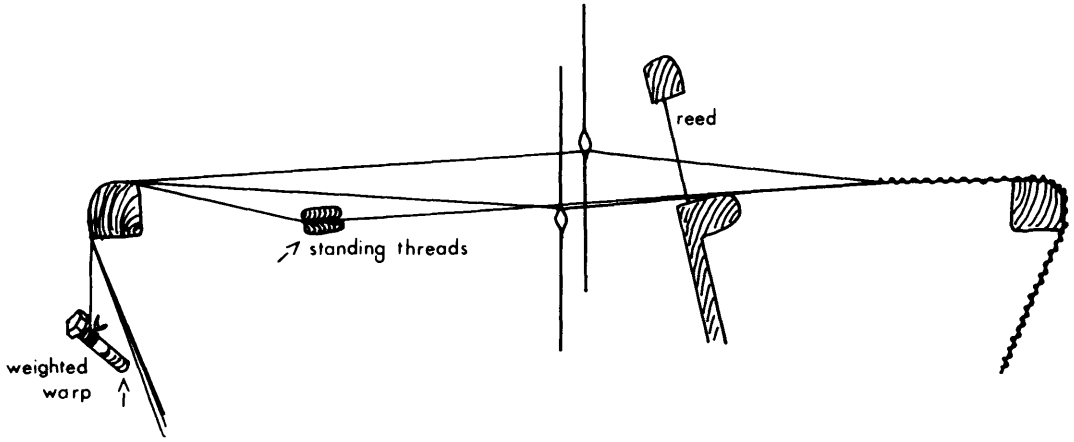


Fig. 6

By clamping the standing ends between two lease sticks (ends tied), they are weighed down sufficiently to keep them in the proper position.

There is a lot of stress on the crossing ends as they are constantly pulled under and around the standing end. A method of releasing some of the stress is to leave these ends *unbeamed* and keep them under tension with individual weights. See Fig. 6.

THREE AND FOUR HARNESS LENO WITH CROSSINGS OF TWO WARP ENDS

The use of a third harness on which the standing warp ends are threaded gives the weaver the choice to weave the • and X warp ends in plain weave or in leno. See Fig. 7. Cottolin was used and an 8 dent reed.

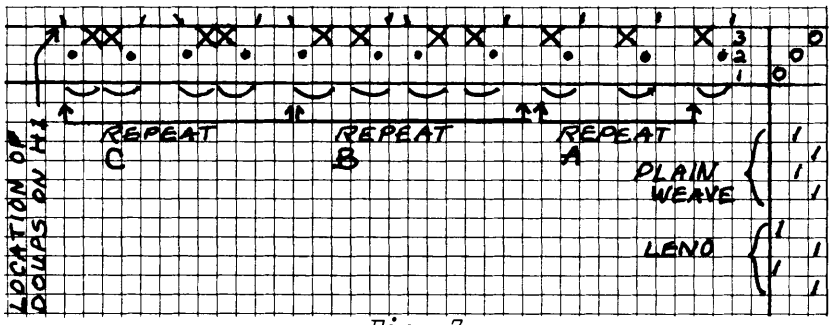


Fig. 7

The plain weave will be of the basket weave system in sections B and C of the sampler because the warp is threaded in pairs. See Plate 2.

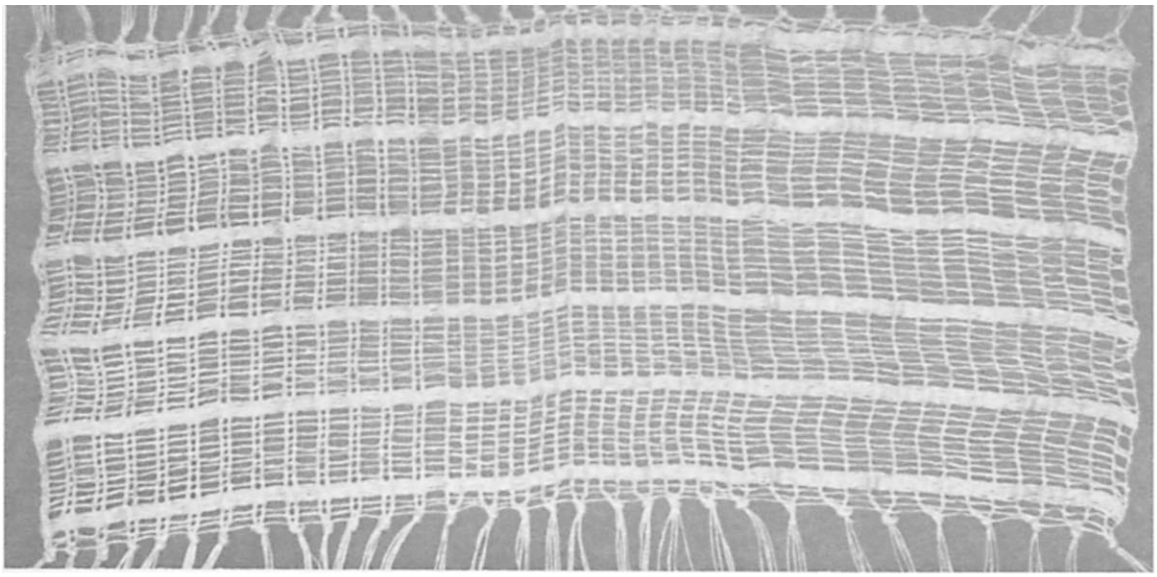


Plate 2 Sampler woven according to draft of Fig. 7

The use of a fourth harness gives the weaver more possibilities of combining plain weave and leno. Warpway bands of leno may be alternated with warpway bands of plain weave. See Fig. 8. Cottolin was used in an 8 dent reed.

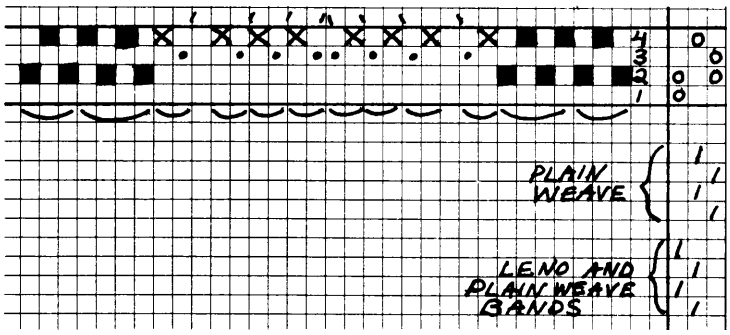


Fig. 8

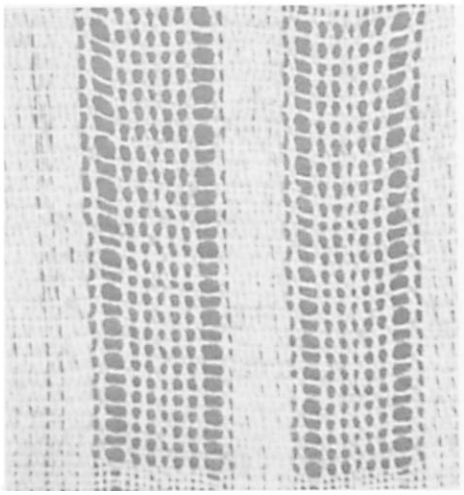


Plate 3
Sampler woven according to draft of Fig. 8

It is recommended that the warp threads making the leno twist are smooth and non-sticking. Otherwise the warp has a tendency to tangle with the doups.

In cases where the doups tangle with the warp it may be advisable to string empty heddles on harness 1, one heddle next to each doup. Pass the doup through the eye of the heddle before threading the crossing thread in the loop as shown in Fig. 9. This method requires a slightly longer doup than if the heddle were omitted.

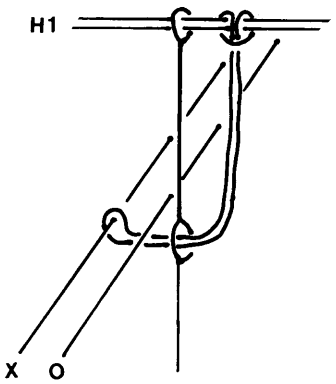


Fig. 9

Doups attached to the bottom heddle bar

Some textbooks on doup leno for the handweaver show doups attached to the bottom heddle bar. This technique often makes a better shed but requires two harnesses for stringing up the doups.

The doup is shorter. Fig. 10 shows how to measure its length. Attach a cotton string on

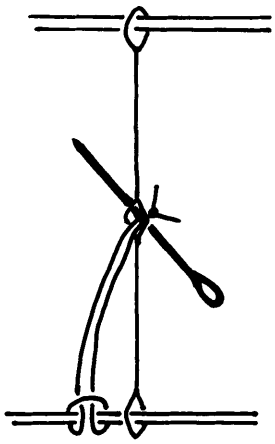


Fig. 10

the heddle bar with a lark's head knot. Pass the ends through a regular heddle on the same harness and tie around a thick tapestry needle or nail. Remove the doup and use as a gauge for all the other doups.

Only the project of the type shown in Plate 2 can be woven on 4 harnesses.

The warp is threaded on harnesses 3 and 4. Harness 2 holds empty heddles, one per doup. Hl holds the doup. See Fig. 11.

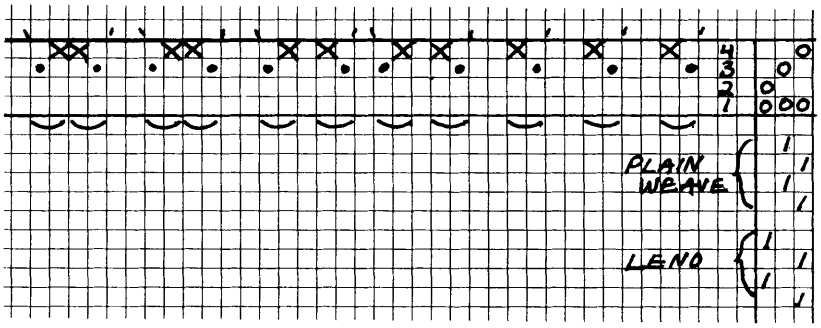


Fig. 11

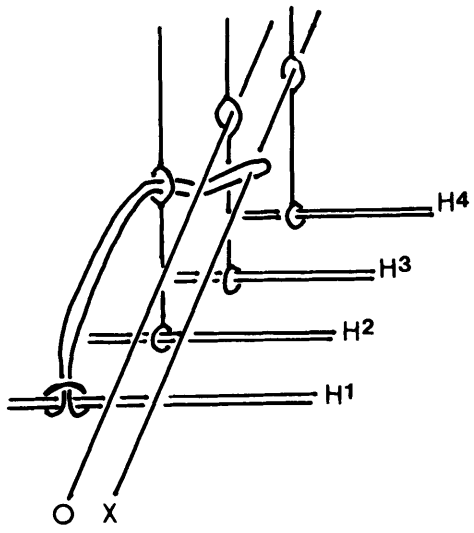


Fig. 12

To thread the crossing warp ends through the doups, lift Hl, pass the doup through the eye of a heddle on H2, pass it under the standing warp end and thread the crossing warp end through the loop. See Fig. 12.

The project of Plate 3 requires 5 harnesses. See Fig. 13.

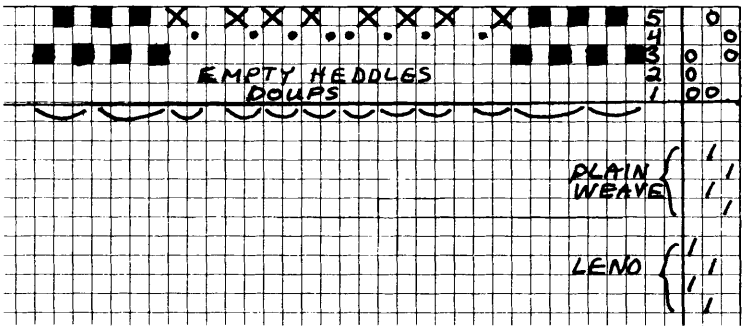


Fig. 13

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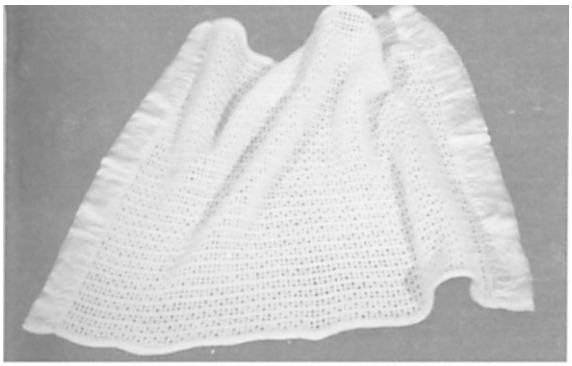
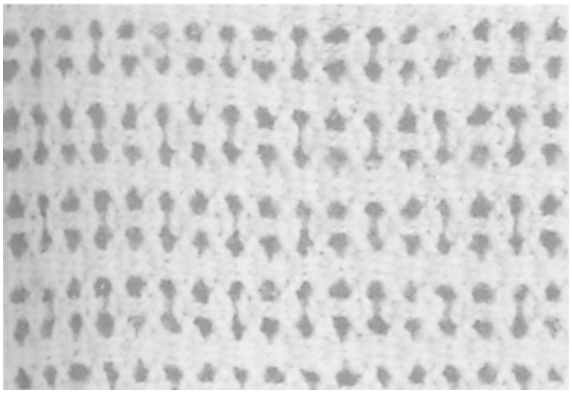


Plate 4



Detail

Plate 4 illustrates a thermal blanket that can be woven on 3 or 4 harnesses.

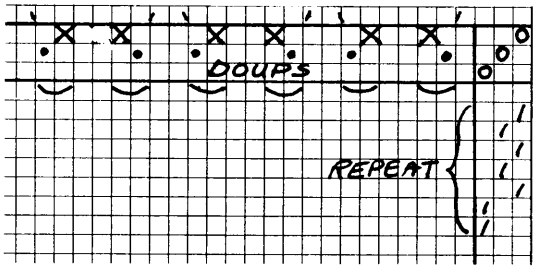


Fig. 14

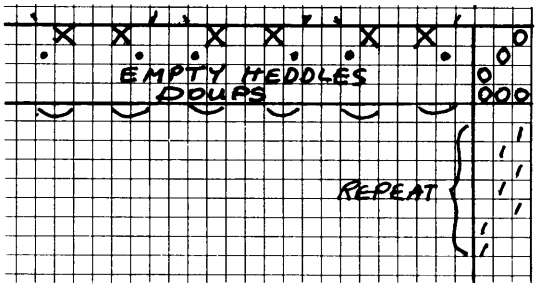


Fig. 15

Fig. 14 shows the draft for doups attached to the upper heddle bar.

Fig. 15 shows the draft for doups attached to the lower heddle bar.

Acrylic yarns are not suitable for leno as they are sticky and often too elastic. Try a cotton or wool blanket first. There is a lot of take-up with this weave.

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FOUR HARNESS LENO WITH CROSSING OF ONE OVER TWO WARP ENDS

Fig. 16 shows the threading draft illustrated in Plate 5 and the treadling repeat for several leno structures.

Fig. 17 shows the positions of the crossing end for the 5 different treadlings. One should alternate 2 or more of the treadling repeats to make more exciting fabric.

No plain weave bands can be woven with the first treadling repeat.

It is important that all 3 ends of a single leno cross be in the same dent and that dents are skipped between each leno.

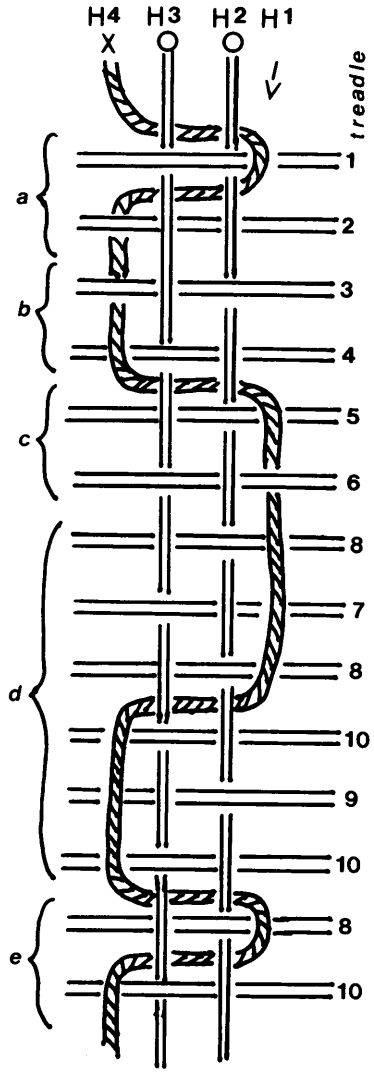


Fig. 17

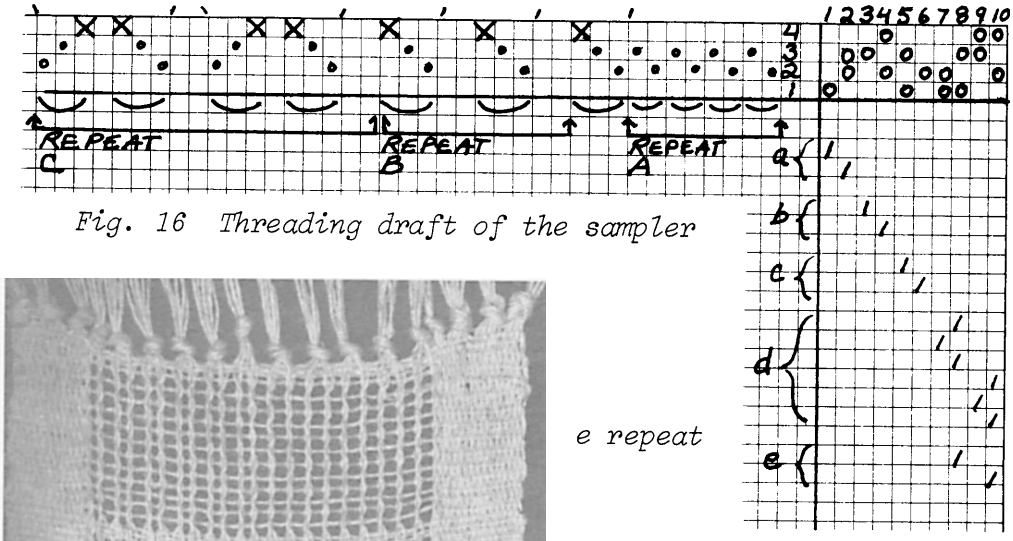
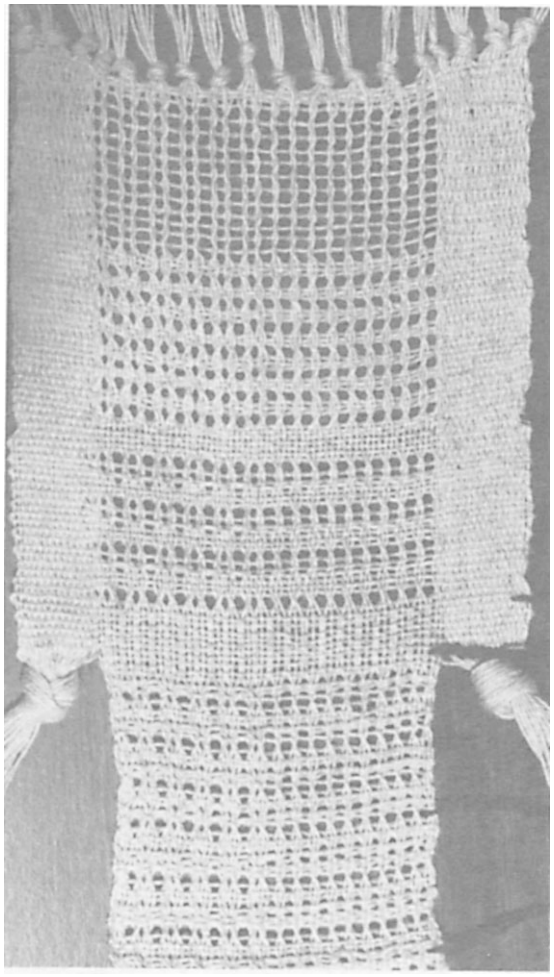


Fig. 16 Threading draft of the sampler



e repeat

d repeat

b,c,c repeat

b repeat

a,b,b repeat

a,a,b,b repeat

Plate 5
Sampler woven with cottolin and a 15 dent reed

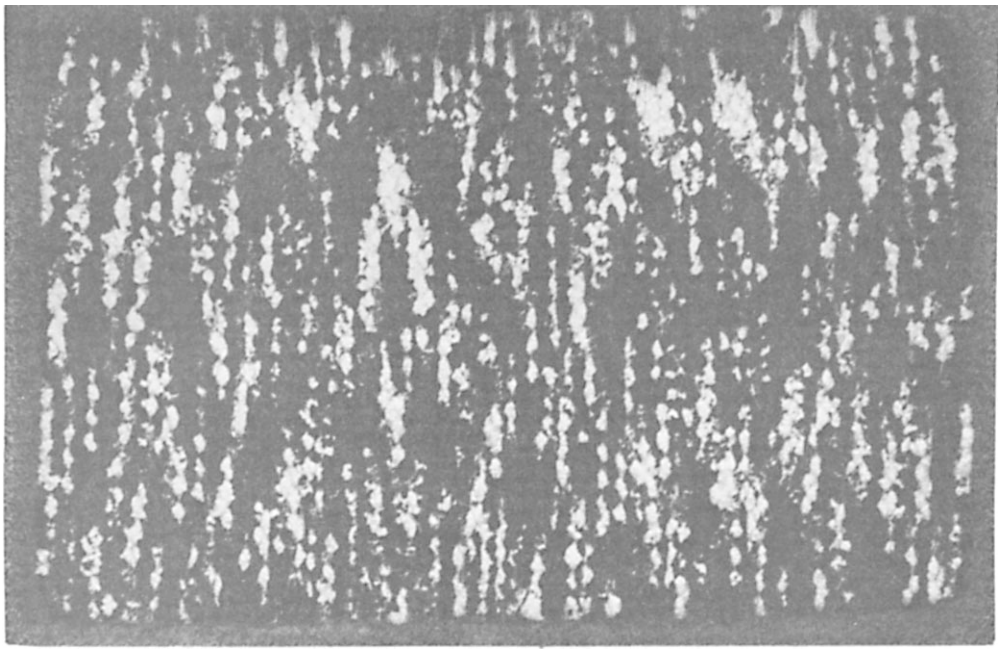


Plate 6
Chenille rug woven by Ellen Champion

Chenille Leno

During a workshop on leno, Hilary Chetwynd pointed out the use of the 1/3 cross leno to make chenille. The threading B, Fig. 16 is used across the loom with large skips between the sets of 3 leno warp ends. The treadling is e. The weft is tightly interlaced with the warp ends and thus the chenille does not come apart.

For a project to illustrate the making and the use of chenille we chose a brown and white twice woven rug.

Making the Chenille

WARP: strong cotton string.
WEFT: 3 ply rug wool in shades of brown and shades of white, the weft was used 5 or 6 fold.
THREADING, TREADLING AND TIE-UP: see Fig. 18.

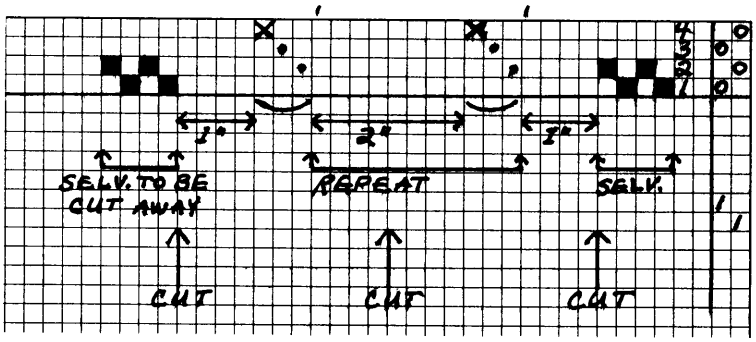


Fig. 18

LENGTH OF THE WARP: 10 yards.
WIDTH IN THE REED: 45½", which gave 22 leno crossings and thus 22 chenilles.

The color of the weft was controlled by weaving wide bands of brown fading into wide bands of white. This gave the finished chenilles the look of tie-dyed yarn.

After the web was woven, the chenille was cut apart then washed with a lot of controlled agitation to fluff up the yarn without felting it.

Plate 7

Plate 7 illustrates one of the finished chenilles.

To Weave the Rug

WARP: 6 cord linen used twofold
WEFT: pattern, chenille
tabby, 3 ply rug wool used twofold
THREADING, TREADLING AND TIE-UP: See Fig. 19

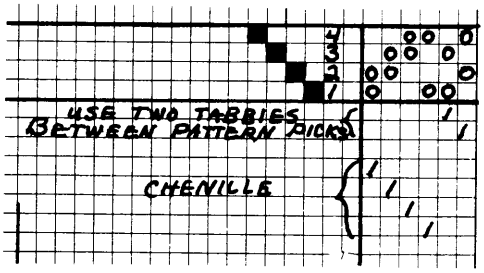


Fig. 19

SLEY: 6 dent reed, skip 2 dents - 3 working ends per inch.
SELVEDGES: See Fig. 20

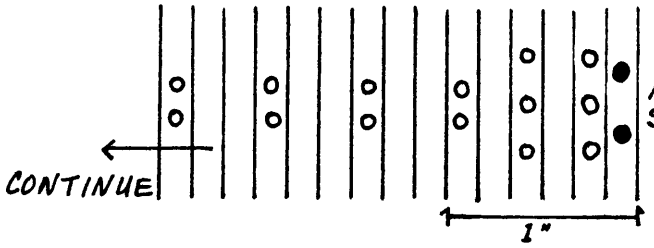


Fig. 20

WIDTH IN THE REED: 45"
WEAVING: Start with 2 picks of tabby, then alternate 1 pattern pick with chenille and 2 tabby picks with ground weft.
WEFT PROTECTOR: Use the half Damascus edge and darn the ends back into the rug.

The finished rug measures 45" X 66" X ½" and weighs 18 pounds.

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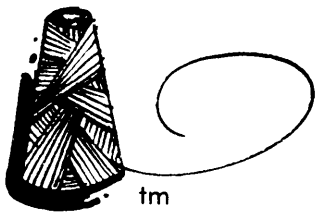

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Handweaving With Silk

by Mary Derr

Weaving with heavy silk yarn is not very different from weaving with cotton. But silk yarn is sometimes very fine and then weaving becomes more difficult. The finest silk that we used for the preparation of this issue is the 140/2 spun silk from Natural Fibers. Sett at 60 e.p.i. (240/10 cm), it wove a tight balanced tabby. A 2/2 twill gave the fabric a better hand. Many silks from the dealers mentioned in this issue sett at 15 to 20 e.p.i. (60 to 80/10 cm). Handweavers should not be afraid to weave fabrics as fine as 100 e.p.i. (400/10 cm), but they should take certain precautions.

Though some silk yarn still must be degummed, it is usually best to do this after weaving. The gum protects the fibers from chafing and gives them added strength. In most cases, the degumming can be combined with the piece-dyeing process. Piece dyeing is recommended for finely woven cloth, since fabric is easier to work with than fine yarn which tangles easily.

Before doing a project with fine silk, inspect all the weaving equipment you will use for smoothness. Everything should be without splinters or rough spots, and there should be no friction between the loom and its moving parts.

A warp of fine silk must be prepared with care and patience. The warp should be done with accuracy and with very little tension. Beam the warp first, then thread and sley. Some weavers claim that since errors are very hard to find when there are so many fine threads, it is best to thread and sley the loom in one operation, working on a small section at a time. Use lease sticks and leave them in between the castle and the back loom. The lease sticks are useful because they keep the warp ends in order if one happens to break. Adjust the position of the lease sticks so that the shed is the same size in front as behind the castle. Look for sagging or tangled threads, for these will break if they are not corrected. Take care in tying the warp to the loom so that the tension is uniform. Looser warp ends may mark the fabric with vertical lines or stripes.

When weaving, you will find that some of the warp threads stick to each other because of the gum. When this happens, the weft forms a loop inside the material around the stuck warp threads. To avoid this, a wide open shed is needed with only moderate tension. It is best to weave close to the beater. When you are using fine yarn, you will find it is harder to weave tabby than twill. Weft satins are the best weaves to show off hand reeled silk. The silk does not need to be twisted and the yarn lays beautifully on the surface of the cloth. If possible, use a temple, as the friction of the reed on the outer warp threads tend to fray them.

When the fabric is finished and taken from the loom, it will look dull, yellowish and stiff until the degumming process has made it soft, white and glowing. We experienced a great deal of shrinkage, as much as 20%, due to the finishing process.

Christmas Greetings

From The Weaver's Journal Staff

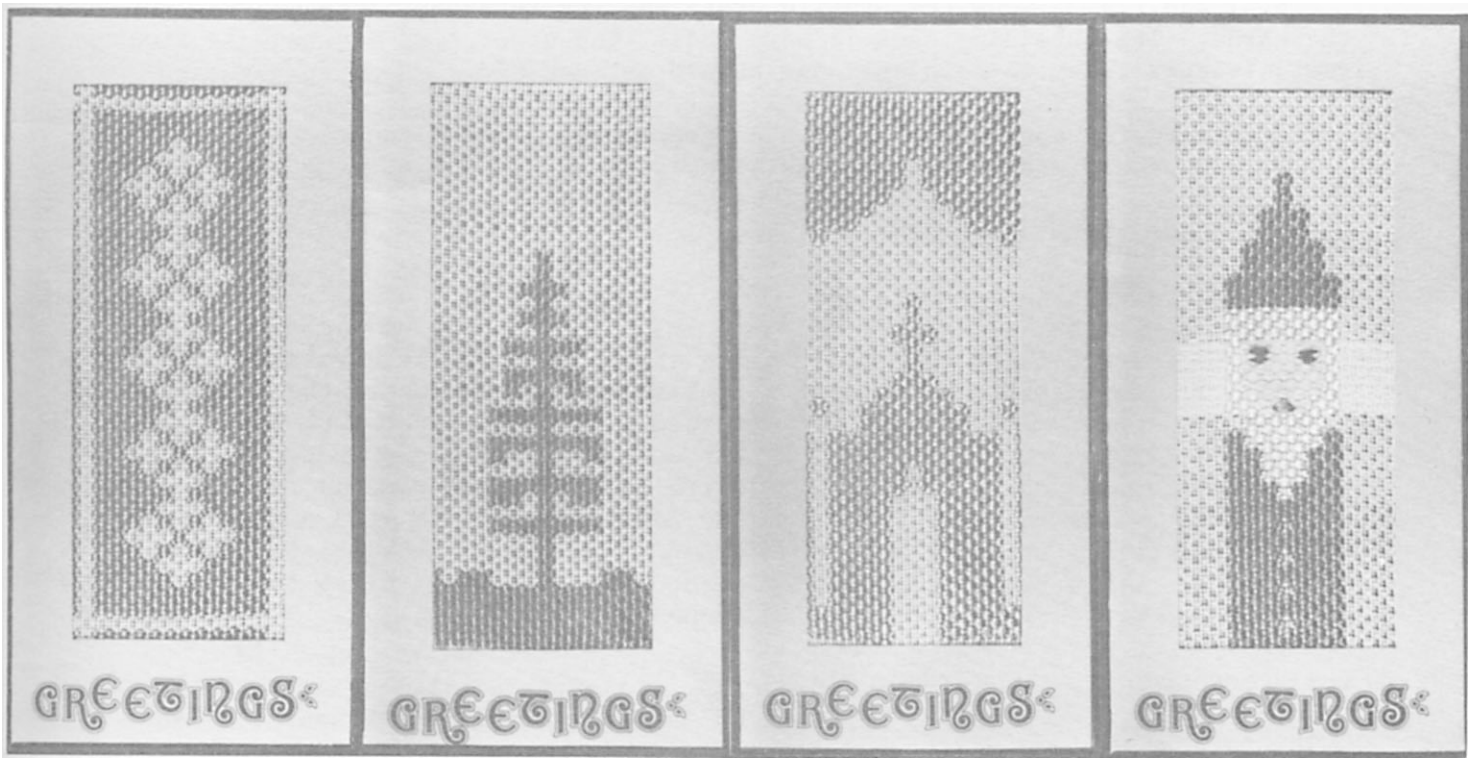


Plate 1 *Plate 2* *Plate 3* *Plate 4*

Our four Christmas cards were woven on the same warp. The weave structure is Summer and Winter. The patterns are made up of 6 blocks, thus, the weaving will require a 8 harness loom.

WARP: 10/2 cotton from Belding Lily Co.
SETT: 20 e.p.i. (80/10 cm)
WIDTH IN THE REED: 4" (10 cm)
TOTAL NUMBER OF WARP ENDS: 80
TABBY WEFT: 20/2 cotton from Belding Lily Co.
PATTERN WEFT: Molino floss from Folklorico

It is not our intention to repeat the theory of multiple harness Summer and Winter weaving. We advise our readers to refer to the article Summer and Winter Part I, *The Weaver's Journal*, April, 1978, or to Harriet Tidball's monograph 'Summer and Winter and Other Two Tie Unit Weaves'. We will give the weaving instructions for all four cards and hope that you put on enough warp to design patterns of your own.

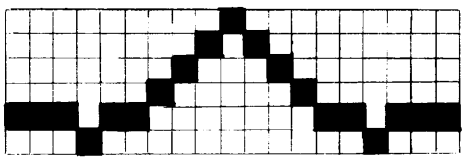


Fig. 1

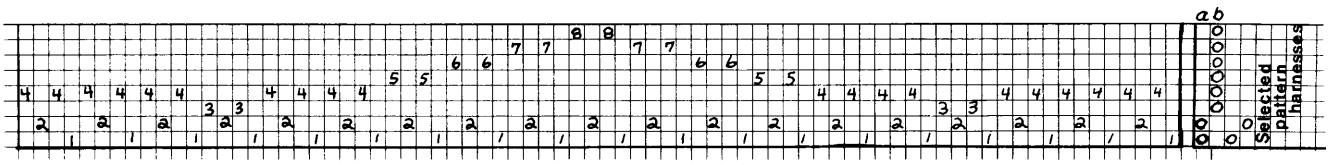


Fig. 2

Fig. 1 and Fig. 2 show the profile draft and the thread-by-thread draft for the cards. The threading uses 76 warp ends. The other four are used as floating selvedges; one two-fold selvedge thread on each side.

The pattern for each card is given on graph paper. Each square represents 4 warp ends and 4 pattern picks plus 4 tabby picks.

Snowflake design card 1, Fig. 3.

The pattern weft is medium blue.
Weaving sequence:

a;	weave tabby
H2 + X;	weave pattern
b;	weave tabby
H1 + X;	weave pattern
a;	weave tabby
H1 + X;	weave pattern
b;	weave tabby
H2 + X;	weave pattern

X - stands for all the harnesses controlling the blocks where the pattern thread floats underneath; that is, the harnesses of the blocks that show up as white in Fig. 3. X remains the same for the complete sequence of 8 picks. For example, starting at the bottom of the card, X is H3 for the first three sequences.

Christmas tree design, card 2, Fig. 4.

The pattern weft is green.
Weaving sequence:
Same as for snowflake.

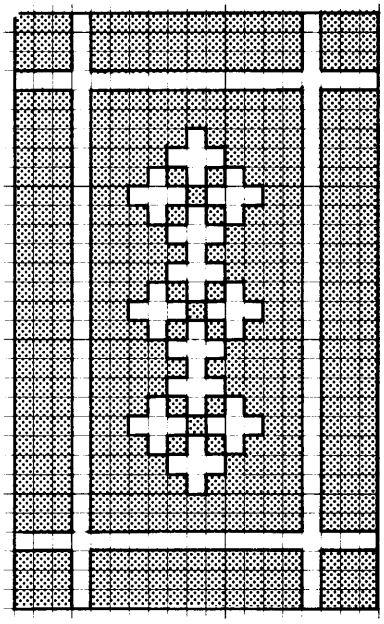


Fig. 3

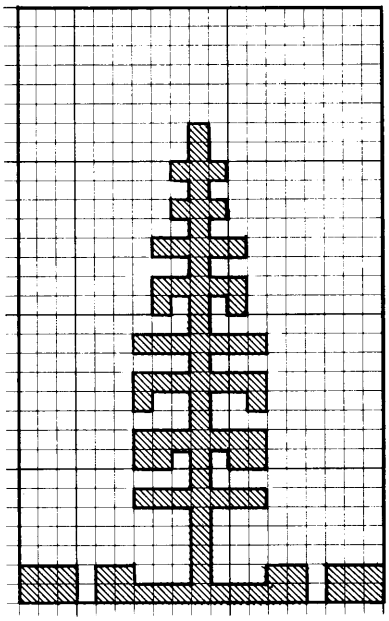


Fig. 4

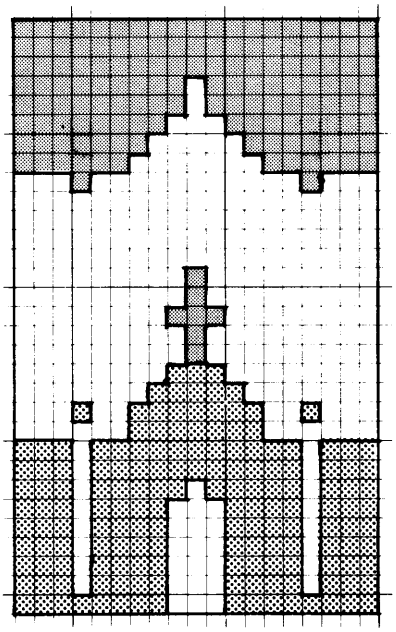


Fig. 5

Church design, card 3, Fig. 5.

The pattern wefts are red-gold for the building and yellow-gold for the cross and sky.

Weaving sequence:

a;	weave tabby
H1 + X;	weave pattern
b;	weave tabby
H2 + X;	weave pattern
a;	weave tabby
H2 + X;	weave pattern
b;	weave tabby
H1 + X;	weave pattern

X - see explanation in Snowflake design.

Santa design, card 4, Fig. 6.

Pattern wefts: gold red pink white

This card is woven in polychrome Summer and Winter.

Weaving sequence:

a;	weave tabby
H1 + Z;	weave pattern color A
H1 + Y;	weave pattern color B
b;	weave tabby
H2 + Z;	weave pattern color A
H2 + Y;	weave pattern color B
a;	weave tabby
H2 + Z;	weave pattern color A
H2 + Y;	weave pattern color B
b;	weave tabby
H1 + Z;	weave pattern color A
H1 + Y;	weave pattern color B

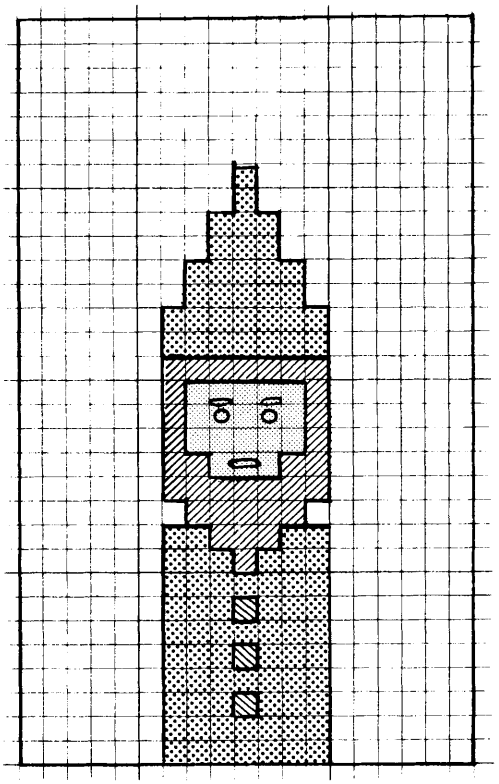


Fig. 6

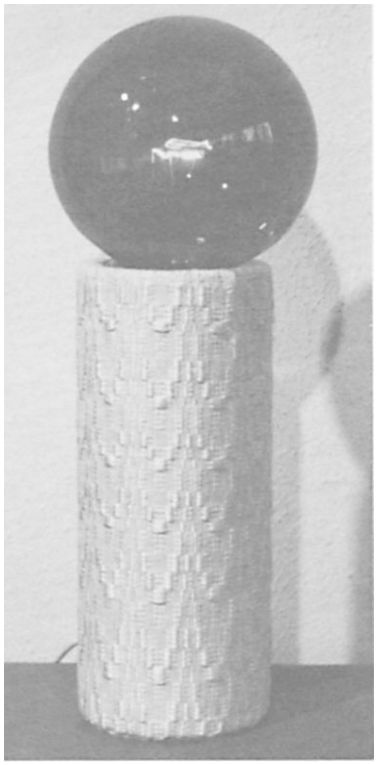
Z stands for all the harnesses controlling the blocks where color A does not float on the surface.

Y stands for all the harnesses controlling the blocks where color B does not float on the surface.

For example, starting at the bottom of the design, Z is H3 + H4 and color A is red, Y is H3 + H4 + H5 + H6 + H7 + H8 and color B is gold. The gold does not float on the surface at all.

Santa's eyes and mouth are added later with needle and thread.

Merry Christmas



Mood Lamp
by Iris Richards

Mood Lamp
by Iris Richards

Among the freebees available at our local printing shops are cardboard cylinders about 3½" (9 cm) in diameter and 9" (23 cm) high. They are the cores of the paper rolls used in duplicating machines. That freebee was turned into the lamp illustrated in Plate 1.

The base was covered with a woven cloth 13" (33 cm) wide and 11" (28 cm) high.
Description of the cloth:

WARP: 2 ply Willamette, off-white, Oregon Worsted Co.
WEFT: tabby, same as warp.
pattern, Molino floss, white, from Folklorico.
SETT: 24 e.p.i. (100/10 cm).
THREADING, TIE-UP AND TREADLING: Honeysuckle, see Fig. 1.

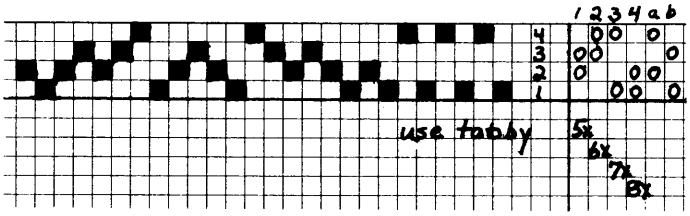


Fig. 1

Other materials needed to make the lamp:

2 round disks of heavy cardboard or pressed wood, that fit exactly inside the cylinder.
One should have a central hole in which the lamp socket fits snugly.
Lamp socket, cord, switch and plug.
Mood-glo bulb.
Glue.
Felt - 3½" (9 cm) diameter circle.
1 lb. cement mix or plaster of paris.

Sew the woven cloth into a tube, leaving an opening in the side seam to match a hole drilled into the cylinder for the electric cord to pass through (see Fig. 2). Assemble the lamp as illustrated in Fig. 3.

Fold in the ends of the woven tube and secure with glue. Sew the felt at the base of the lamp and screw the bulb into the socket.

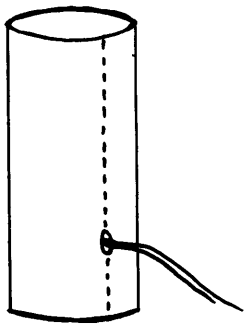


Fig. 2

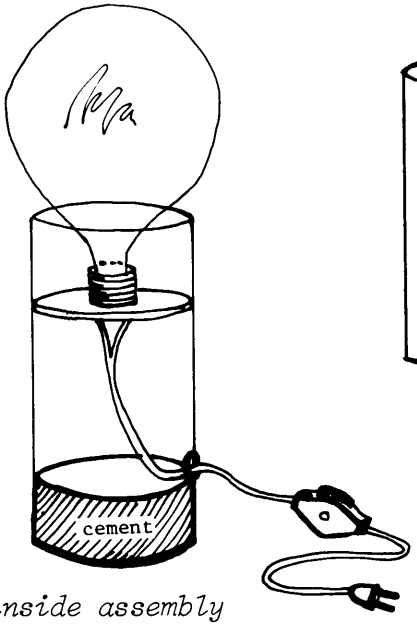


Fig. 3

inside assembly

Book Reviews

WEEDS - A Guide for dyers and Herbalists by Anne Bliss, Juniper House, Boulder, Colorado, 1978, 113 pp. $5.25

Weeds, are they undesirable plants? Maybe for most of us, but Anne Bliss takes a very positive stand when she documents fifty common weeds in this book. Weeds can have nutritive, medicinal and other uses but, most important to the author, they are producers of dye.

The first short chapters contain clear and concise information on dyeing wool with plant material. The dyer will appreciate this complete basic manual contained in this book.

Following this, the weeds are described in alphabetical order. For each one, a page with an illustration beautifully drawn by Jean Hurley, faces a page of informative text. The botanical information is enlivened with anecdotes of cultural interest.

Each plant has been tested for its dye potential without the use of mordant and with five different mordants. The resulting colors as well as the test for light fastness has been recorded for each plant.

The reader of this book will find out how 'delightful' 'weeds' can be.

Clotilde Barrett

THE WEAVING, SPINNING AND DYEING BOOK by Rachel Brown, illustrated by Rachel Brown and Cheryl McGowan, Alfred A. Knopf, New York 1978, 368 pp. $9.50 Paperback, $17.50 Hard cover.

Rachel Brown, in her Preface, says, "This book is as much for the experienced weaver as for the beginner.....a well-organized presentation of most of the aspects of these three crafts, including instructions for several exciting projects ranging from the very simple to the very complex."

"The approach of this book is to give you basic information that will make it possible for you to understand the processes of weaving, spinning, and dyeing... no matter what tools or methods you are using...."

It seems to me close to impossible to write a single book this comprehensive, yet Rachel Brown has accomplished this and more. In addition to six chapters on various types of looms, one each on spinning and dyeing, she also covers finishing techniques, design and color, "making a living at it," and suppliers. One could work happily for years with this single resource, yet so many things are mentioned in passing that another person would be inspired to read further in other more detailed resources. As one example, the basics of loom-controlled designs are outlined but not detailed. The illustrations are clearly and accurately drawn, and are easy to follow.

School libraries and teachers could use this fine resource as well as the fiber craftsperson.

Ellen Champion

A HUNDRED AND ONE QUESTIONS FOR SPINNERS - Straw Into Gold edition. Oakland, California 1978, 93 pp. $5.95

The editors of this book want craftsmen to benefit from the experiences of others. They deal with a vast number of problems encountered by spinners. The questions are well put and are of interest to a variety of fiber craftsmen. They are answered with a great deal of integrity by two or more experts who have a vast experience and good knowledge in the area of spinning. A sincere communication is established among the spinners who need advice and those who can give it. The style of the book is easy but very informative. The questions are sensible and down to earth, the answers are direct and to the point.

It would be of great interest to bring some of these questions to a meeting and compare the answers from a local panel to the answers given in the book. I like to challenge part of the answer to question 18, e.g. "the terms tussah and wild silk are the same". I believe that there are wild mulberry worms, thus that there is a wild silk that is not tussah, and that there is a cultivated tussah silk.

This book is fun, educational and challenging.

Clotilde Barrett

THE XENAKIS TECHNIQUE FOR THE CONSTRUCTION OF FOUR HARNESS TEXTILES by Athanasios David Xenakis. David Xenakis Golden Fleece Publication, Sioux Falls, South Dakota, 1978, 50 pp.

The 'rigid heddle' or slot and heddle loom is a two-shed loom. Scandinavians use a pair of slot and heddle frames to make bands of a weave structure that requires three sheds. A. Xenakis expands this concept. By using three frames he produces textile structures requiring 4 different sheds. Such frames are easy to build or can be purchased. The author recommends the Beka manufacturers. The weaving on such a loom is slow and will appeal only to the hobbyist. The author explains the technique in rather turgid style, often making the reader wonder what he is heading for. However after careful study, the weaver will be able to produce overshot patterns, Summer and Winter, and other typical four harness weaves on a three-frame slot and heddle loom.

Clotilde Barrett

COCHINEAL AND THE INSECT DYES by Frederick H. Gerber. Gerber Publications, Ormond Beach, Florida, 1978, 70 pp, 32 yarn samples. $6.75

The author has researched many natural dyes as a scholar and as a craftsman. The book touches on history, biology, chemistry, anthropology, terminology, but above all, the author addresses himself to the dyer, intrigued with the art of producing colored textile from insects. The book deals in detail with kermes, St. John's Blood or Polish cochineal of Europe, the lac insects of Asia and the cochineal insects of the New World. The republishing of early 19th century dye methods and the author's own investigative texts are invaluable. The author has made an important contribution to the literature of natural dyes.

Clotilde Barrett

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AN INTRODUCTION TO THE EUCALYPTS: SUBSTANTIVE DYES by Joan Lea Walsh 1978, distributed by Straw Into Gold, 15 pp.

The book's subtitle, "A Handbook for Experienced Natural Dyers" is somewhat misleading. The book is a handsome display of swatches of wool fiber and silk yarn, dyed with different eucalypt species. The author has experimented with eucalypts at different stages of maturity, dry and fresh, and with several mordants and with unmordanted fiber.

Although basic formulas and recipes have been omitted, the visual appeal of this book make it attractive to all craftspeople interested in natural dyes.

Clotilde Barrett

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SUMMER AND WINTER - TECHNIQUES AND VARIATIONS by Annis W. Jefferson. Booklet of 28 pages giving instructions for four to eight-harness methods. Threadings and treadlings in multi-harness which are not usually found in weaving books. $3.00 postpaid. Order from Annis W. Jefferson, 3716 Westcliff Road, South, Fort Worth, Texas 76109.

PLAYING WITH BLOCKS: AN EXPLORATION OF MULTIHARNESS OVERSHOT by Erica Voolich. Four threading systems explained and illustrated; numerous tie-ups and drawdowns; and a step by step method for figuring out tie-ups. Order from Erica Voolich, 244 Summer, Somerville, Mass. 02143. $3.95 (Mass. residents add .20 tax).

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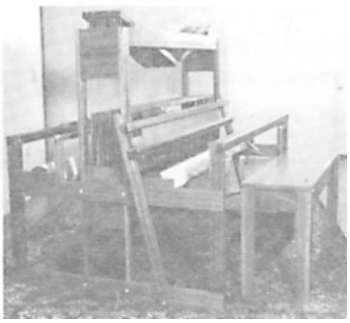

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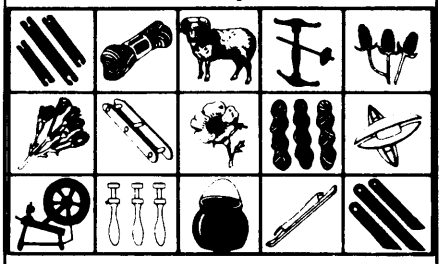

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