

Note that in those books which cover dyeing or weaving in addition to spinning, only the spinning part has been reviewed.

- ANDERSON, BERYL. CREATIVE SPINNING, WEAVING, AND PLANT DYEING. Arco 1973. 48 pp. \$3.25  
The text of this book is adequate for spinning, but the photographs are the real attraction. There are several good ones of sheep and spinning on an Ashford wheel, but the best are 16 inspiring pages of completed projects in color.
- BRITISH SHEEP BREEDS, THEIR WOOL AND ITS USES. Photographs. \$3.95, \$1.35 for samples
- CASTINO, RUTH. SPINNING AND DYEING THE NATURAL WAY. \$8.95  
Said to have good photographs, but quite ordinary text.
- CHANNING, MARION L. THE MAGIC OF SPINNING. 1966. 44pp. \$1.50 TCL  
Much of this little book is concerned with the history of spinning. There is also a good section on wool as a fiber (it only deals with wool). The chapter on spinning is short, but adequate, and is followed by one on "Places to Visit" and another on "Where to get Materials".
- \*CHAPIN, DELORIA. PROBLEM SOLVING WITH HANDSPUNS. Handspinning notes from Thys'ldo Farm; Technical Improvement Series. Vol. II. 1974. 13pp.  
Deals with problems in equipment and fleece as well as spinning technique. Good.
- CHAPIN, DELORIA. SINGLE THREAD YARNS. Handspinning notes from Thys'ldo Farm; Fancy Yarns Series. Vol. IV. 1974. 11 pp.  
An informative booklet on how to spin 'fancy yarns' of differing textures, colors, and fibers.
- \*DAVENPORT, ELSIE. YOUR HANDSPINNING. Select Books. 1953. 132 pp. \$4.50  
One of the most complete handbooks of handspinning, good for beginners. If you only want one book on spinning, this is it.
- DUNCAN, MOLLY. SPIN, DYE, AND WEAVE YOUR OWN WOOL. Sterling. 1973. 46 pp. \$4.95  
A few short chapters on fleece, carding, and spinning on a spindle lead into some good ones on wheels and wheel spinning. The illustrations and wheel mechanics deal largely with Ashford-type wheels. Also has a paragraph on spinning from an electric sewing machine motor! Plying and washing are also covered, but quickly.
- FANNIN, ALLEN. HANDSPINNING: ART & TECHNIQUE. Van Nostrand Reinhold. 1970. 208pp. \$12.50 TCL  
This is not a beginner's how-to book. It is technical and dry, not easily scanned; best perhaps for looking up a specific problem area or new interest from time to time. I found it inconsistent in detail, some sections seeming ridiculously obvious, as in picking apart the wool; some being inadequate as when he tells you to oil the scoured wool but does not tell you what to use. But it contains much information not found elsewhere - how to sharpen the wires on your carders and how to recycle spun yarn, as two minor examples. His entire approach is unique, having a background in mill technology, and is applied nearly equally to all types of fiber. The chapters are on "The development of spinning technology, Fibers, Basic principles in spinning, Tools and equipment, Fiber preparation processes, Spinning, Yarn design". The illustrations, all black and white, are either detailed and informative, or superfluous. Learn to spin well before you read this book.
- GRASSETT, K. COMPLETE GUIDE TO HANDSPINNING. Select Books, 1971. 35 pp. \$1.85  
This booklet has a short section on everything from teasing and carding wool through the preparation of flax and spinning of silk. There are one or two items of special interest such as how to spin on a spindle while walking, but in general only the most basic information is given. Not a "complete guide"!
- HAMILTON, BARBARA. SPINNING THE FLEECE. 36 pp. \$3.00  
b "It contains an excellent glossary and much technical information about sheep and wool not found elsewhere."
- HOPPE, ELIZABETH, AND RAGNAR EDBERG. CARDING, SPINNING, AND DYEING. Van Nostrand Reinhold. 1975 75 pp. \$5.95.  
Beginning chapters on wool and flax fibers are interesting and nicely illustrated. Spinning instructions begin with spinning on a stick and progress to a spindle; there is some new information here. However the chapter on wheel spinning is disappointing for both wool and flax.

- \* KLUGER, MARILYN. THE JOY OF SPINNING. Simon & schuster. 1971. 187 pp. \$6.95 TCL  
 A pleasant and readable book which contains much information in an informal narra-  
 tive manner. This style enables the author to present alternative methods for the  
 various stages of spinning- a more realistic approach than most. While the chapters  
 on preparing wool and spinning on a wool wheel, flax wheel and spindle are long and  
 detailed, the one on flax and other fibers is less strong. It does not tell how to  
 prepare flax from the plant nor does it spend much time on preparing the distaff. (In  
 none of these books have I seen as good a presentation on the preparation of a distaff  
 as the demonstration by Jean Steiber and Jean Travers Frink at a recent meeting.) If  
 you want to own this enjoyable book, you will still need Elsie Davenport's.
- LEADBEATER, ELIZA. HANDSPINNING. Charles T. Branford. 1976. \$18.75
- POWELL, GLEN. SPINNING AND WEAVING. 80 pp. \$3.95  
 b "The chapter on spinning is probably the strongest and he does provide interesting  
 information on knitting and weaving with unspun wool."
- SEACROATT, MARGARET. A BASIC TEXTILES BOOK. Van Nostrand Reinhold. 1975. 96pp. TCL  
 Said (by Laurel Scheeler) to be excellent.
- SIMMONS, PAULA. ARTICLES FROM WARP AND WEFT ON SPINNING, WEAVING AND SHEEP. 8 pp. \$1.60  
 Informative short articles on spinning fine yarn, heavy yarn, speed spinning, weav-  
 ing on the 100" Leclerc loom, raising black sheep, shearing, and selling.
- \* SIMMONS, PAULA. REPRINTS FROM HANDWEAVER AND CRAFTSMAN. \$1.80  
 Eleven short articles, many of them on spinning problems, but also including card-  
 ing, weaving, raising sheep and spinning black wool.
- SPINNING WOOL. Dryad Press. Leaflet 83. (no date) 12 pp. \$.60  
 This leaflet gives a very brief description of carding, spinning on a spindle and on  
 a wheel.
- \* SVINICKI, EUNICE. STEP BY STEP SPINNING AND DYEING. Golden Press. 1974. 64 pp. 2.95.  
 Quite a good book for spinning, with many illustrations. Unusual chapter on spin-  
 ing equipment covering different kinds of spindles and different kinds of wheels,  
 with a section on what to look for in an old wheel. More detailed information than  
 usual on different fibers, spinning on various spindles and wheels and plying. Most  
 surprising therefore, to find a paragraph beginning "Wool may also be washed in an  
 automatic washing machine."
- THRESH, CHRISTINE. SPINNING WITH A DROP SPINDLE. Threshold. 1971. 24 pp. \$1.25  
 A nice booklet, good as far as it goes. Has a little on carding, washing, and ply-  
 ing, too. Strictly for beginners.

\* Highly recommended

TLC In the Tompkins County Library card catalogue. This is different from being in the  
 Tompkins County Library.

b Review from the Unicorn Craft and Hobby Book Service Catalogue

Prices are mostly from the Unicorn ; they are merely meant to be indicative of the price  
 range.

This bibliography is incomplete. Still to be done are special interest books: children's,  
 spinning wheels, spinning in other countries.

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## TRADITIONAL DYEPOTS:

Indigo, Madder, Cochineal, Weld, and Woad

### Indigo

Indigo is one of the oldest cultivated plants. It was known almost the world over. Indigo is native to India (*Indigofera tinctoria*) and reached the Mediterranean as early as the last few centuries before Christ. It was also found in India, Malaya, Asia, and Egypt long before trade routes or a means of communication existed between eastern and western countries.

American colonists imported indigo from the West Indies by way of British ships. It was very expensive. It was cultivated in America, chiefly in South Carolina, and became a profitable export to England in the years just preceding the Revolutionary War -- over a million pounds were exported annually. By 1850, indigo had totally disappeared from the lists of exports of Charleston and cotton had taken over.

Indigo is a legume that grows about 5-feet tall, with dainty compound leaves and typical legume pods. It is harvested when about to bloom. The leaves are placed in large tanks of water and allowed to ferment. The liquid is drawn off, the plant residues are aerated and then allowed to set. When the solution is settled, the clear liquid is drawn off and the remaining residue is dried by sun or heating over a fire. The solid matter was made into cakes or balls, called junks.

Indigo is insoluble in water. It must be reduced, then put in an alkali solution before it can be dissolved and absorbed by the textile material. It will dye wool, cotton, or linen. When the indigo is dissolved in an alkaline liquid, it turns yellow. Wool (or cotton) is put into the vat, allowed to steep from 10-30 minutes and then held or shaken in the air to oxidize. The oxidation should equal the dyeing time. The textile may be redipped for a deeper color. Allow to oxidize at least 24 hours before washing.

### RECIPE: Hydro-sulphite Vat Process (Viola Thurston)

3-oz. caustic soda (Sodium hydroxide) [alkali]

2-oz. Sodium hydrosulphite [reducing agent]

2-oz. powdered indigo (or paste)

hot water (130°F)

2 pint jars

1 large pot for stock solution

sauce pan

glass or steel rod

thermometer

<sup>salt</sup>

Part A. (1) Make into paste by adding a little warm water. (2) Add Sodium hydroxide to one pint hot water. (3) Add Sodium hydrosulphite to one pint hot water. (4) In saucepan, add nearly all Sodium hydroxide solution and then the Sodium hydrosulphite solution. Warm to 125°F. Let stand for half an hour in warm place.

Part B. (1) Fill large pot with water at 120°F. (2) Add 2-oz. hydrosulphite solution and 1-oz. salt. Stir well and leave for 20 minutes. This deoxidizes the water. (3) Add 1-oz. of the indigo stock solution; avoiding making bubbles. If vat feels slimy, there is too much Sodium hydroxide (add a little Sodium hydrosulphite). (4) Temperature should stay between 120°F and 130°F. The whole vat is destroyed at 140°F.

Madder (*Rubia tinctorum*)

Linen dyed with madder has been found in Egyptian tombs on mummies. The Greeks and Romans used madder, and in the 5th century it was grown in the Near East and imported to Europe. In the 7th century, it appeared as a European crop. By the 1500's, Holland was the major source for madder, followed by France. Most madder imported to America came from Holland. It was never widely cultivated in America, although conditions were considered quite suitable. Thomas Jefferson and Dolley Madison grew madder on their plantations. It was the principal red dye used during the 18th century.

The red color is obtained from the roots of the plant. It takes three years for the roots to yield a crop. The roots are dried and pounded or ground. The most potent dye comes from the center of the root. Madder was used in Europe and America until the last quarter of the 19th century.

RECIPE:

1 gal. water  
2-oz. madder (Soak roots overnight)  
4-oz. wool

Madder is very potent and the dyebath may be reused until exhausted. Colors with mordants: alum (red-orange), chrome (garnet red), and tin (bright orange-red). If the dyebath is heated over 140°F, the color becomes much duller. Raise temperature very slowly -- it should take about 1-2 hours to reach simmer. Simmer 30-40 minutes. Let cool in bath. Keep in refrigerator

Cochineal

Cochineal is the dried bodies of the insect *Dactylopius coccus*. Spaniards found the natives dyeing with cochineal when they entered Mexico in 1518. They shipped the dye to Spain for export to Europe. Guatemala and Mexico were the first sources of cochineal because the insects' food (*Opuntia cochenillifera*) grew there, a cactus. It takes 70,000 dried insects to produce one pound of cochineal and an acre planted with the cactus yielded 250-300 pounds of insects. Cochineal was very expensive and used only for fine cloth. The cheaper madder was used more often by the home dyer.

To dye woolen cloth, it was recommended that the cloth be finished -- milled, napped, and sheared -- before dyeing since subsequent dressing would "tarnish" the cloth. Cochineal was used on a commercial scale until the turn of the 19th century when azo-scarlet dyes were introduced.

RECIPES:

American Beauty Red Wool

1-lb. wool, alum mordanted	Soak cochineal 1-hour, boil 15 minutes, strain.
1-oz. powdered cochineal	Add water to make 4-4½ gal. Add wool, heat to boiling, simmer 1½ hours; rinse and dry.

Rose-Pink Wool

1-lb. wool	Soak cochineal overnight. Next morning add
1-oz. cochineal (2-oz. scarlet)	oxalic acid, tin, and cream of tartar; boil 10-
4-oz. oxalic acid	minutes. Add cold water to make 4-4½ gals.
4-oz. tin	Add wool. Simmer one hour.
1-oz. cream of tartar	

Cochineal (Edna Blackburn)

1-lb. wool  
3 to 4-oz. cochineal  
3 to 4-oz. alum  
1-oz. cream of tartar  
1 tsp. oxalic acid  
1 Tbl. salt

Simmer solution 20 minutes. Simmer wool in solution one hour. Leave in dyepot overnight. Rinse next day in 1-Tbl. salt and water, once. Hang outdoors for several days to a week. Bring in and wash in detergent, rinse, and put out to dry again. Cochineal will run into light colors.

Weld (*Reseda luteola*)

The three colors that could not be developed by mordants and madder, even as late as the latter 1600's, were blue, green, and yellow. Indigo and woad solved the problem of the blue. The principal yellow dyes used were weld, fustic, and quercitron (black or yellow oak) and, when top-dyed, produced the range of greens. Weld, also called wold, dyer's weed, and dyer's mignonette, produced an unusually fast dye and the brightest yellow colors, and it held considerable popularity as the color to use in various methods of printing textiles. It was the most commonly used yellow dye in England until the advent of the synthetic dyes. By 1920, it was no longer used in England and had not been in common use in the United States for a number of years.

The plant is an annual and is easily grown from seed. It is not a particularly beautiful plant, growing rather tall (3-4 feet) and rangey, but is certainly an interesting addition to the dye plant garden. (Weld also holds the honor of being probably the oldest fast dyestuff known to man.) The flowers are produced on slender spikes. Gather the whole plant (but not the roots) in full flower, before the blossoms fall, and chop up to use. Weld may be used either fresh (the best color) or dried.

Preparation for a dyepot is minimal, although the color will not be obvious in the dye water. Large amounts are required for strong colors -- a proportion of at least 3:1 (fresh weight weld to fiber or textile) is an average dyebath. Plant material may be left in or strained out -- leaving in seems to produce a stronger color, however. Simmer the dyebath as you would with any other plant material, about 30-minutes, cool in the dyepot, and rinse. Colors range from bright, lemony yellows with alum to deep bronzy golds with chrome. Some dyers believe that weld also imparts a softness to wool.

Woad (*Isatis tinctoria*)

It is nearly impossible to say with certainty which of the two plants, indigo or woad (also called pastel), was first used for blue dyeing. Woad is generally believed to be the oldest blue dye (according to the literature) and was used during the Bronze Age in Europe and Iron Age (before 1000 B.C.). In Medieval days (+1400), woad was the most important blue dye in Europe and was grown under severe restrictions. Since indigo was so expensive because of its toilsome processing and the risks involved in importation, woad was often mixed with indigo as it was less costly and had almost the same properties -- however, it gave only about 1/30th the amount of color that indigo would yield and gave a somewhat duller shade of blue.

Woad was probably known in America before indigo, but by the early 1700's indigo could be obtained and the demand for woad diminished during the 1800's. Very little woad was grown in the United States -- most of it was imported from France and Holland.

It was sold in 150- to 200-pound bales. Woad was last mentioned as a dyestuff in the English dye literature of the early 1900's.

Woad starts growth early in the spring as a rosette of bluish-green, slightly hairy leaves, and it flowers from May to July. The flower stalk is 2-3 feet high, with a few leaves on the stems. Flowers are bright yellow, in a many-branched umbrella-shaped head. Seed pods are purple to black and dangle from the head. It produces many seeds and plus the fact that it woad may persist as a biennial or perennial, woad may spread rapidly. Dyers who want to grow woad in their dye gardens should be aware that woad is now considered a noxious weed in several States and that it may well take over your other plants. The U.S. Dept. of Agriculture is urging persons not to grow the plant, particularly in areas such as rangelands where control is nearly impossible.

The dye preparation for woad was similar to indigo. The plant leaves were harvested just prior to blooming, then crushed, fermented, dried, and pressed into cakes. REconstitution for dyeing was anything ranging from a simple re-fermentation to much more complicated processes as for indigo. "Cold vat" as well as "hot vat" processes were used. Some woad vats were kept going for years; other dyers used the dyebaths only for several heatings. "Working the woad" was a term used for the reconstituting prior to dyeing. It might also be mentioned in passing that woad was known for its unusually noxious odor -- "woad towns" where it was produced commercially in Europe were given a wide path by passersby.

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The above information was assembled for the October 1977 meeting of the Black Sheep Handspinners Guild, Ithaca, New York, by members Kay Ross and Jean Warholic. Dye pots were run with all the dyestuffs except for the woad. Below is a list of references should you require additional information (in alphabetical, not preferential, order). Sources for these dyes may be found by reading through the magazines relating to the fibers arts such as *Shuttle, Spindle & Dye pot* or *Interweave* or the like.

#### Selected References

- Adrosko, Rita J. *Natural Dyes and Home Dyeing*. Dover Publications, NYC. 1971.
- Bemis, Elijah. *The Dyers Companion*. 1815 edition reprinted by Dover Publications, NYC. 1973.
- Brooklyn Botanical Garden Record. *Plants and Gardens: Dye Plants and Dyeing - A Handbook*. (Vol. 20, No. 3; 1964.) NYC.
- Gerber, Frederick H. *Indigo and the Antiquity of Dyeing*. Gerber, Fla. 1977.
- Pettit, Florence H. *America's Indigo Blues: Resist-printed and Dyed Textiles of the 18th Century*. Hastings House Publishers, NYC. 1974.
- Weigle, Palmy. *Ancient Dyes for Modern Weavers*. Watson-Guptill Publications, NYC. 1974.