

Materials for Chair Seat Weaving

When temporarily at rest, Man first sat cross-legged on the ground or squatted on his haunches — the latter still a preferred resting posture in much of the Orient. In Egypt, several millennia before the birth of Christ, the lightweight, frame chair evolved with the seat frame filled in with cords made of twisted leaves of marsh plants (*Juncus*, *Cyperus*) or of palms. Cabinet-making did not evolve to that point in Europe for many centuries. Instead, stools and benches were made of crude boards or split logs with wooden pegs for legs. Chairs with wooden (plank) seats and backs began to appear as cabinet-making evolved in the Occident, and were used by ecclesiastic and lay nobility as a prerogative of rank.

It was not until the 17th century A.D. in Europe and somewhat later in the American colonies that the less cumbersome frame-seated chair like that developed by the Egyptians came into general use. An attempt then was made to find material to fill in the seats and backs.

Probably the first material used in Europe for weaving the seats was osier. Osier can be obtained from nearly any species of willow, if properly prepared. *Salix viminalis*, commonly called osier, and *S. vitellina*, the Yellow Willow, were the materials of choice for early craftsmen, who had long used them for basket-weaving. Still grown commercially, chiefly in Europe, these willow species can be seen at the Arnold Arboretum in the field opposite the administration building.

In the production of osiers, plants are started by taking one-foot sections of one-year-old shoots or branches. These are planted on two-foot centers in rows 18 inches apart. From each cutting one or two shoots should be allowed to develop. At the beginning of the third growing season, the sprouts are cut back to two or three buds from the base. Long new sprouts will arise from the remaining buds on the plant, and the process is repeated again each succeeding year.

The cut sprouts, known as "raw" osier, should have the bark stripped off after which they may be stored dry for a long period. Boiling the stems before stripping, a process known as



Wooden seat and carved wooden back, old German chair. Photo: R. E. Wheeler.



Splint-seated high chair — early American. Photo: R. E. Wheeler.

buffing, makes this operation easier and imparts a pleasant brown color to the material.

When used for seating, the osiers are used whole or split lengthwise in two or into four pieces and are soaked for some hours in water to make them more pliable.

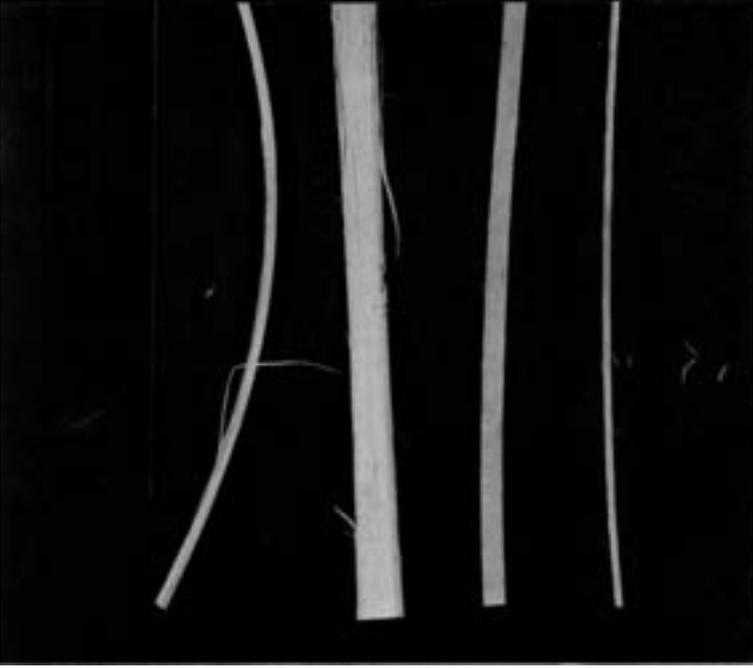
Osier at its best produced a coarse weave that must have been uncomfortable to sit on; though the heavy homespun clothing of the period when it was chiefly used perhaps made it more tolerable. There were other disadvantages, too, not the least of which was the tendency of the woven twigs to crack and break. At any rate osier was soon displaced for chair seating by more durable products, and the sturdy old chairs on which it was used are hard to find now, even in antique shops.

Osier was soon replaced by flat splints, another material borrowed from basket-making. These were made by removing the outer bark from young trees three or four inches in diameter. The stems, cut to the required length, were then beaten all over with a mallet to destroy the vessels of the spring wood in the annual rings. This treatment separated the annual rings one from another; the rings then were split up into strips to be dried and sliced lengthwise into ribbons of even width. After being soaked in water, these strips were rendered pliable enough to weave around the seat frames to make more attractive, comfortable and durable seats than those of willow. The rest of the tree was not wasted: ash and hickory wood made the best plough and axe handles, and chair parts. The fragile-looking Hitchcock chairs owe their durability to these rugged woods as much as to the care with which they were assembled.

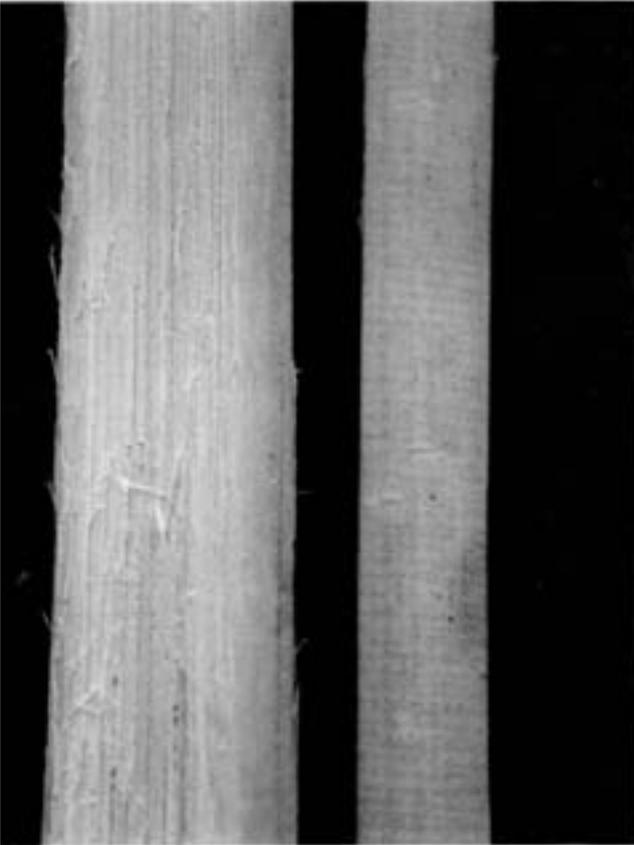
The hickories were favored among early substitutes for willow because their strips or splints were tougher and longer-lasting in use. Species most commonly employed were *Hicoria lacunosa*, shellbark, *H. glabra*, pignut, and *H. ovata*, shagbark; this last, a favorite because its outer bark was so easily removed. Specimens of these three may be seen today in the collections at the Arnold Arboretum.

Conservationists will be happy to learn that splints from these valuable trees have in turn been replaced by even more practical materials, also of plant origin. True splints now are only available on special order, if at all.

A singular variant on the splint seat came about when the Shakers in Pennsylvania began weaving comfortable and easily replaced chair seats out of heavy cotton ribbon. When the warp and woof ribbons were dyed in contrasting colors, the various kinds of weave (basket, herringbone, etc.) produced an effect



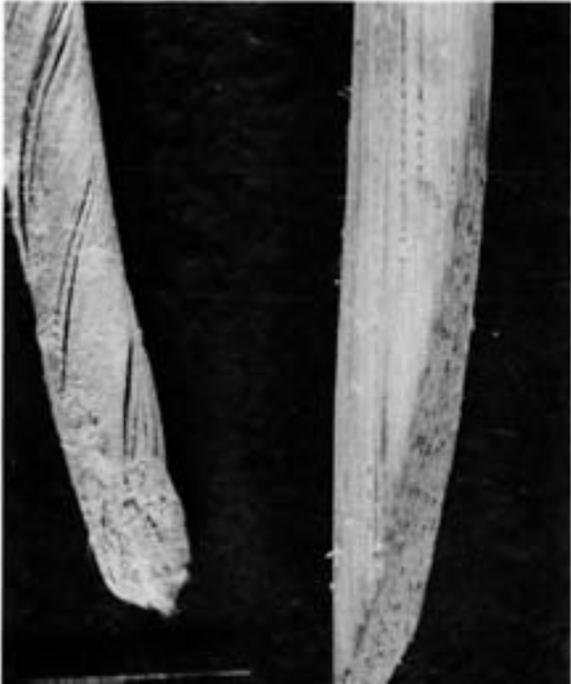
Left to right: Round reed; flat reed; coarse cane; fine cane.



*Left: Flat reed.
Right: Coarse cane.*



Scirpus americanus. Photo: R. E. Wheeler.



Left: Fibre rush.
Right: Reed.

quite gay for such an austere sect. This type of ribbon can still be purchased at the Shaker Shop on the Common in Concord, Massachusetts.

Splint, in turn, was displaced in Europe and the American colonies by twisted cords of marsh plant leaves much as the Egyptians had used them centuries before. The long, narrow leaves of several species of bulrush, cat-tail and even of wild iris were used. Favored in America were bulrushes of the genus *Scirpus*; indeed *S. americanus* came to be known as the "chair-maker's rush". Leaves of cat-tail, particularly the species *Typhus angustifolia*, furnish the bulk of natural "rush" commercially available today.

Ardent workers don't need to buy the material, however, for this plant grows abundantly in marshes and water-filled roadside ditches. The leaves are harvested toward the end of August when they begin to turn brown at the tips. They are dried in the shade outdoors or in attic or cellar indoors to preserve the pleasant green color, and stored away from any dampness that might make them moldy. Properly cured and stored they can be used for a year or more.

The weaving of a chair seat with natural rush is done with a continuous cord composed of two or three moistened, tightly twisted rush leaves to which new leaves are added progressively to maintain a uniform cord size. The cord is carried over and under the frame rails in figures-of-eight at each successive corner around the chair until the whole seat is filled in.

The knack of producing an even thickness of rush cord is not readily mastered by the amateur. Fortunately there is a practically indistinguishable substitute made of another vegetable material — tightly twisted, tough paper commercially known as "fiber".

The need for proper preservation of both natural rush and fiber seats is not generally understood. Routinely given a coat of shellac, the interval between coats depending on the degree of use, these seats will last indefinitely; otherwise they need periodic replacement.

When American clipper ships spurred trade with the Orient, a revolution in chair making and weaving began. Among other cargoes, they brought back rattan which is derived from the stems of a number of climbing palms native to the East Indies. Entire chair frames, legs and backs could be made from the tough stems as well as walking sticks, polo sticks, ski poles, etc.

The outermost layer or rind of these plants is a hard, shiny substance which is taken off in strips and becomes the "cane"



Carya ovata. Photo: H. Howard.

sold commercially for basket-weaving and chair seating. Cane can be obtained in widths from “superfine” — barely a millimeter wide — to “coarse” about 5 millimeters wide. The last are almost the size of narrow splints, for which they can be substituted. Cut into long strips of even width, cane is strong, pliable (when moistened), durable (wet or dry) and requires no maintenance.

The weaving of cane-seated chairs was done originally by threading double strands of cane through evenly spaced holes in the front and back of the seat frame to make what, in cloth-weaving terminology, would be called the “warp”. The “woof” strands then were woven in through similar holes in the side frames. The weave was further strengthened by two diagonals producing the durable and attractive hexagonally-holed pattern.

During the last few decades this difficult weave has become available in machine-made sheets which are simply cut somewhat oversized, wedged into grooves in the side rails, and glued with splines to hold the cane in place. Beautiful reproductions of antique chairs are sometimes sold as genuine antiques; but if the seat is retained with splines instead of holes through the frame, the fraud can be readily detected.

Either type of cane seat would be virtually indestructible if the manufacturers took the trouble to round the inner edges of the seat frame. The weight of the occupant tends to cut the cane against a sharp-edged frame, particularly at the front of the chair, and periodic replacement becomes necessary.

When the rind of rattan stems is removed to produce cane, the tough fibrous inner portion is cut in various shapes and widths. Long, flat strips become the flat “reed” of commerce — an ideal substitute for the hickory and ash splints of long ago and far less expensive. Long pieces, round in cross-section, become the round “reed” of commerce — ideal substitutes for osier which is available here only as an import.

Finally, the Orient has provided a partial substitute for natural rush in the form of “Hong Kong Grass”. This is made from the fine twisted leaves of salt-marsh grasses. While it is only available in a thin, string-like gauge of any specified length, it is surprisingly strong and can be purchased in a variety of colors. It is often used either in an open or closed weave on modern chairs. This product is not to be confused with Raffia — a less substantial material made by stripping and drying the cuticular layer from the leaves of the Madagascar palm, *Rhaphia raffia*, or the Japanese one, *R. taedigera*. Raffia has more basketry than chair seat applications, but can be used as part of the binding-off strip around the edges of cane seats.



Salix purpurea lambertiana. Photo: H. Howard.

Today many homes have at least one chair, often of antique value, which has lost favor because its seat is no longer sound. Years ago this would not have posed a problem; but the current shortage of craftsmen able to make authentic and durable repairs almost dictates that we learn the craft ourselves.

It is an extremely interesting and challenging hobby, as well as a practical occupation; one particularly suited to the elderly or handicapped. A little patience, modestly-priced materials, and a few simple tools found in every household are all that are needed for the work.

Expert guidance and advice are obtainable at adult education courses; several books also detail the procedures clearly. The author recommends *Seat Weaving* (II), by L. Day Perry (Washington, D.C.: Hobby House Press 1940) and *Chair Seat Weaving for Antique Chairs* by Marion Burr Sober (Michigan Graphic Corporation, Whitmore Lake, Michigan 1964). In addition, *Yankee* and *Early American Life* magazines periodically carry advertisements of mail order firms * offering the supplies which sometimes are difficult to procure locally.

It is hoped that the foregoing historical and practical notes also will assist the novice in his restorative efforts.

RALPH E. WHEELER, M.D.

(Dr. Wheeler, a resident of Brookline, is Emeritus Professor of Bacteriology at the Tufts University Medical School. His hobby is the restoration of antique chairs.)

* The traditional supplier in New England is the H. H. Perkins Co., 10 South Bradley Rd., Woodbridge, Conn. 06525. Its catalog lists most of the materials discussed in this note as well as tools and kits containing chair parts of early American antique reproduction for do-it-yourself assembly; also, books on seat weaving and on furniture refinishing (often a necessary preliminary to replacing the seats of antiques).

