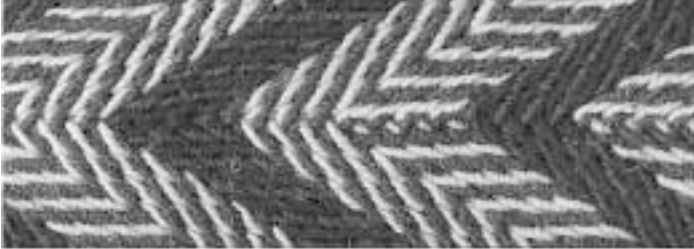




*Braid a* is a traditional camel girth. *Braids b* shows several typical SCOT designs and twined linking; *Braid c* shows curves and an acute angle; *Braid d* combines 'S' and 'Z' twist yarns; *Braid e* shows multicolored inversions. To learn more about ply-splitting, read Peter's new book; see 'Reviews,' p. 64.



# SINGLE COURSE OBLIQUE TWINING

BY

PETER COLLINGWOOD

This article is the third in a series on ply-split braiding. To review terms and processes, before reading this, read the first article on 'plain oblique twining' (POT) in *Weaver's* issue 29 and the second article on 'two-layered oblique interlacing' (TLOI) in issue 30.

The working of 'single course oblique twining' differs from the other two structures (POT and TLOI) in two important ways. Firstly, every cord always splits at least two others lying adjacent on the opposite course, not just one; secondly—and related—the splitting is always done on an oblique fell, not a transverse one.

## A single-section braid in SCOT

Fix 4 cords, 2D(ark) and 2L(ight), at their midpoints to a starting rod, giving 4D and 4L free-hanging cords to work with; see *Figure 1a*. Starting at the right, insert the needle so it splits in the normal way all the cords in succession except the outermost left-hand one. Pick up the latter with the needle and draw it through the other 7 split cords. Deposit it at the right side and swing it down so it becomes the outermost right-hand cord as in *1b*. Part of this cord now lies close under the starting rod, hidden by the cords it has split.

Do not turn the piece over. Repeat this maneuver. As this is done, the first cord the needle splits will always be the one just pulled through. Split it close to its point of emergence, but leave a quarter twist (indicated by single oblique lines) in all the other cords between this and their splitting in the previous row; see *Figure 1c*. (To tighten the braid, force the splitting needle against the fell before each cord is pulled through.)

As work proceeds, the splitting cord, and therefore the fell being used, becomes more and more oblique until finally an S-fell is achieved with a stable angle; see *1d*. The angle is always less than 45° to the horizontal, whereas the split cords always lie more than 45° to the horizontal. This is another more subtle but very important characteristic of SCOT and divides it sharply from

POT and TLOI where all the cords lie at 45°. It results from the fact that adjacent split cords on one course can lie more closely side by side than can the adjacent splitting cords on the other course; see the expanded view of a 6-cord braid in *Figure 2*. However for simplicity, the familiar 45° grid is used for most SCOT diagrams.

As the work proceeds, the braid shows rhomboids of the 2 colors, one above the other (see top section of *Braid b*, p. 56). Rhomboids with varying proportions are the basic units of SCOT design. Note that:

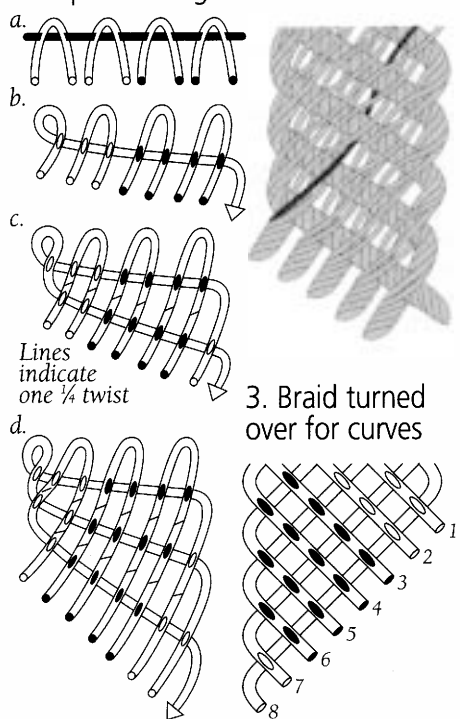
- each ply of a cord passes over 2 splitting cords then under the next 2; see shaded cord in *Figure 2*; so split and splitting cords are related to each other as are warp and weft in simple tablet weaving;
- at selvages a cord changes from being visible to being concealed or vice versa;
- the visible cords always lie at right angles to the S-fell being used.

## Producing curves and angles

This simple braid acquires a surprisingly curved outline if at any point it is turned over and then (using the thread numbers and the turned-over braid as shown in *Figure 3*) 2 > 1 (cord 2 passes through cord 1); 3 > 1 & 2; 4 > 1, 2, & 3, 5 > 1, 2, 3, & 4 and so on until 8 passes through 1, 2, 3, 4, 5, 6, & 7. Then the braid is turned back and the same 8 splittings repeated. Keep on repeating this maneuver. The braid's curvature is controlled by how tightly the 8th cord is pulled through each time; see the curved section of *Braid c*. Using several colors accentuates the curves.

As in POT, the long axis of the braid can be turned through an angle. Because neither visible nor concealed cords lie at 45°, this angle can never be a perfect right angle, but

1. Single course oblique twining 2. Expanded view of 6-cord braid



is obtuse if parallel to the splitting cords (see *Figure 4a*, p. 58) or acute if parallel to the split cords (see *Figure 4b* and the acute angle in *Braid c*). Using these two types of splittings in various sequences can lead to many interesting dimensional possibilities.

## Multiple fells

It is difficult to make a much wider braid in the above way because the needle has to split so many cords in one movement; and in any case the resulting braid would probably corkscrew. So it is common practice to work on more than one fell as in *Figure 5*, p. 58. This automatically produces sections in the braid, length-wise divisions of the visible cords into those

lying on the S-course and those on the Z-course. The V- and A-fells in *Figure 5a-b* will give 2 sections; the multiple fells in *5c* 6 sections. These sections are divided by heavy lines in the diagrams.

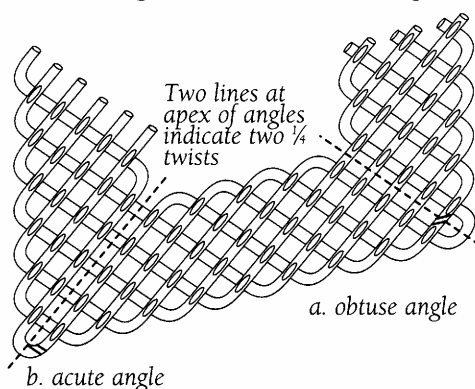
## A 2-section braid on a V-fell

Fix 8 cords, 4D and 4L, at their mid-points to a starting rod giving 8D free-hanging cords to the left of 8L. Separate them into a right-hand and left-hand group. Starting at the center the needle goes to the left, splitting 7 D cords, picks up the outermost D cord and draws it into the center where it crosses the midline, becoming the innermost of the right-hand group of cords. Turn the braid over and perform a very similar maneuver: first split the D cord just pulled through, then 7 L cords, pick up the outermost L cord, and draw it into the center where it crosses the midline.

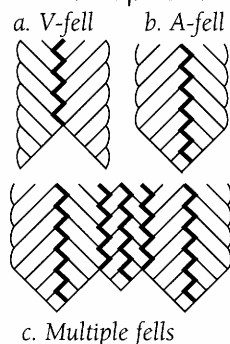
Turn the braid back and continue, always pulling the outermost cord through the cords on its own side into the center where it becomes the innermost cord of the other group. Leave  $\frac{1}{4}$  twist in each cord between successive splittings. The 2 fells will soon acquire a stable flat angle and the braid will have a V-fell; see expanded view of an 8-cord braid in *Figure 6*. Above this fell the braid is divided into 2 obvious sections. (The repeated turning over keeps you working on an S-fell; your hands can therefore keep to their accustomed roles.) Several observations can be made.

- There are 7 splittings in the 1st row, 8 in the 2nd, giving 15 in the repeat, 1 fewer than the total number of cords, an inevitable rule of braiding. The 2 sections are therefore not exactly the same width, which could only be obtained by starting with an odd number of cords.
- At the boundary between the sections cords change from being visible (split) to being concealed (splitting). So the sections—and there can be many of them—have a profound effect on the design. The cords on their oblique courses are chopped into visible and invisible portions as they pass from section to section. They also change from one state to the other at either selvedge.
- A section can be anything from 2 cords wide upwards; see center of *Figure 5c*.

## 4. Turning a braid to make angles



## 5. Fell options



## 6. V-fell braid

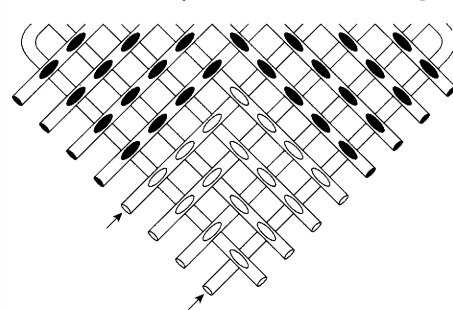


## Twined linkings

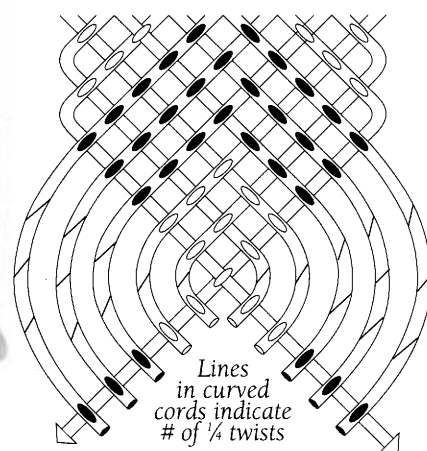
With the color arranged at the start as described, the braid shows rhomboids of D and L cords which mismatch at the center as in the top of *Braid b*. If the cords had been arranged 4D 8L 4D at the start, then the rhomboids would match and give a transverse zigzag. However, twined linkings (see *Weaver's* 29, p. 50), as always, can alter a color sequence. (The zigzag repeated several times across the width as in *Braid a* is one of the commonest designs found on Indian camel girths. In fact its representation on old wall paintings is about the only evidence of the early use of ply-splitting.)

Stop at a moment when the V-fell has the colors arranged as in *Figure 7*. Then as the next D cord splits those on its side, make it twine link with the first L cord it meets; marked by top arrow in *Figure 7*. This is done with two simple movements of the needle and brings the L cord into the center instead of the D. Turn the braid over and work a normal row without a twined linking. Work these 2 rows 4x and there are now 4 twined linkings, one above the other, but only in 1 section of the braid. These twined linkings, performed only once, are clearly visible in *Braid b* (on left side, below

## 7. Cords ready for twined linking



## 8. Inversions



the first set of rhomboids) and cause 4D and 4L cords to swap courses and give the color arrangement for the zigzag. The zigzag now appears as normal work continues and would repeat endlessly if allowed. The 8-section *Braid a* shows zigzags twine-linked to a single-color border.

In *Braid b*, instead of more zigzags, another design is introduced requiring repeated use of twined linkings. Start again as in *Figure 7* but with the colors reversed, i.e., with the 8D cords in the center. As each cord is pulled through, twine link it with the last cord of the opposite color it meets; see lower arrow in 7. Do this in every row. Each twined linking will be closer to the selvedge than the last; the final one is at the selvedge. After these 8 twined linkings, 4 on each side, start over again. These maneuvers give the arrowhead motifs at the center of *Braid b*. This is only one of many possibilities of applying twined linkings to SCOT.

## Inversions

I first saw inverted designs in an old book which were mistakenly identified as tablet woven. It was only on a third visit to India

that I began to find old ply-split pieces with this very flexible and attractive technique and a few men who could still do it.

The principle is to change *suddenly* from a V- to an A-fell or vice versa; see *Figure 8*. The last 2 cords which have just been pulled through to the center on the V-fell are then immediately pulled through the remaining cords on the opposite side out to the selvage; see the 2 arrowed L cords in *Figure 8*. (More than a  $\frac{1}{4}$  twist can be left as indicated in some of the outer cords on each side by oblique lines; 3 lines = 3 one quarter twists.) The two splitting cords will lie almost horizontally but if the braid is now worked as for an A-fell, this shape of fell will soon appear. This means the innermost cord from the left-hand group is pulled through all the cords of the right-hand group and becomes the outermost cord of that group. Turn the braid over and repeat.

The effect of this sudden change of fell is to curve the cords into an attractive oval shape. Twine linking the 2 cords in the very center will ensure they do not become

hidden. On *Braid b*, before the inversion is done, a twine linking is made on each side to split up the colors into narrower stripes and so emphasize the curves.

To reverse this inversion, change from the A- back to a V-fell by bringing the 2 cords just pulled through to the selvage immediately back into the center, splitting again the cords just split, leaving the normal  $\frac{1}{4}$  twist. Then work as on a V-fell. These maneuvers are done twice in *Braid b*, giving 2 ovals, one above the other, seen at the bottom.

The many-colored *Braid e* (a sample by the author based on a type found in Rajasthan) has many possible inversions depending on how the colors lie when the inversion is started. As it is worked in 4 sections, this braid has 2 ovals in its width. Note how in several places only some of the cords are inverted, while others act normally.

### For further exploration

SCOT offers many other paths for exploration such as the following:

- using cords containing plies of more than

one color, i.e., AABB, ABAB or ABCD; the latter two can give surprising results. *Braid d* is a 2-section braid with ABAB cords, some Z-, some S-plied;

- altering the number of sections in the width as the braid is being made;
- using a one-color border to which the central cords are twine linked (*Braid a*);
- working in transverse or even oblique sections;
- working in a cylindrical form;
- adding cords to increase the width and/or to introduce new colors;
- letting a splitting cord be itself split, and so visible, at points in its oblique passage;
- splitting cords eccentrically;
- combining Z- and S-plied cords (*Braid e*).

Each of these ideas is only a springboard to areas hardly ever entered by most traditional girth-makers in India. The next article in this series will describe how SCOT and POT can be combined to give visually exciting and technically advanced examples of ply splitting. ❧