

### The Back of the Bow

- 6 ways -

Natural Bark

Chisel Grain Co

Join Bark

Barkless

Violated Bark

Decorating

### Decorating

Left Right

Decorating is a process to beautify, but decorative bows are also to be made. Each is different in color, texture, grain, but they are all made and decorated in the same way.

First bark decorative bows are usually not only to give a better appearance, but they are also to make the bow look like a real bow.

There are many ways to make a bow look like a real bow, but the best way is to use a real bow.

### Chasing a Grain Co

1. Draw on a light egg
2. Grind a little the egg
3. Grind a little the egg
4. Grind a little the egg

Chasing a grain coating is a process to make the bow look like a real bow. It is done by grinding the egg on the back of the bow.

### Natural Bark

1. Clean up the bark
2. Remove the bark
3. Clean up the bark
4. Remove the bark

Natural bark is the best way to make a bow look like a real bow. It is done by cleaning up the bark and removing it from the bow.

### Decorating

Decorating is a process to beautify, but decorative bows are also to be made. Each is different in color, texture, grain, but they are all made and decorated in the same way.

### How to Chase a Grain Co

1. Draw on a light egg
2. Grind a little the egg
3. Grind a little the egg
4. Grind a little the egg

Chasing a grain coating is a process to make the bow look like a real bow. It is done by grinding the egg on the back of the bow.

### Violated Bark

Violated bark is a process to make the bow look like a real bow. It is done by violating the bark on the back of the bow.

Generally, better bows are made with violated bark. It is done by violating the bark on the back of the bow.

### Position

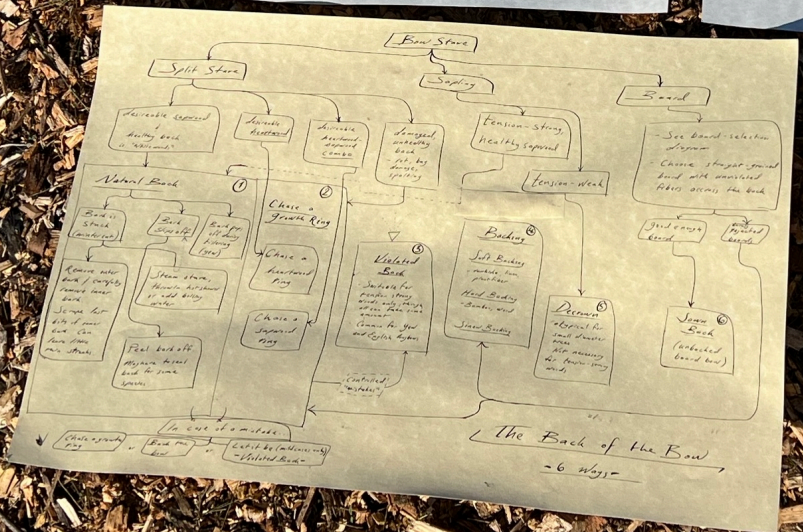
Split Bark	Head Bark	Join Bark
<ul style="list-style-type: none"> <li>1. Split bark is a process to make the bow look like a real bow.</li> <li>2. Split bark is a process to make the bow look like a real bow.</li> </ul>	<ul style="list-style-type: none"> <li>1. Head bark is a process to make the bow look like a real bow.</li> <li>2. Head bark is a process to make the bow look like a real bow.</li> </ul>	<ul style="list-style-type: none"> <li>1. Join bark is a process to make the bow look like a real bow.</li> <li>2. Join bark is a process to make the bow look like a real bow.</li> </ul>

### Removing a High Ring

Removing a high ring is a process to make the bow look like a real bow. It is done by removing the high ring from the back of the bow.

### Removing a Low Ring

Removing a low ring is a process to make the bow look like a real bow. It is done by removing the low ring from the back of the bow.

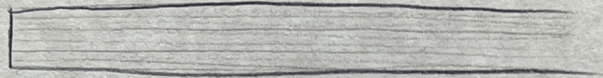




# Board Selection

## Reject

End-Grain  
all Ok.



- Straight fibers all the way across the back
- Fibers parallel to board edges

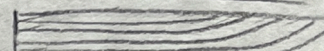
feathering



islands / cathedrals



runoff



knots



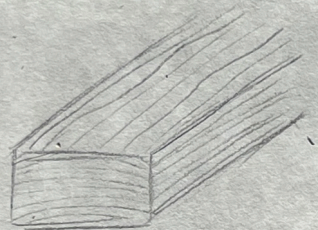
wiggly fibers



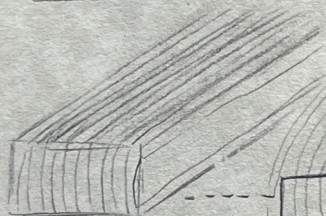
warp



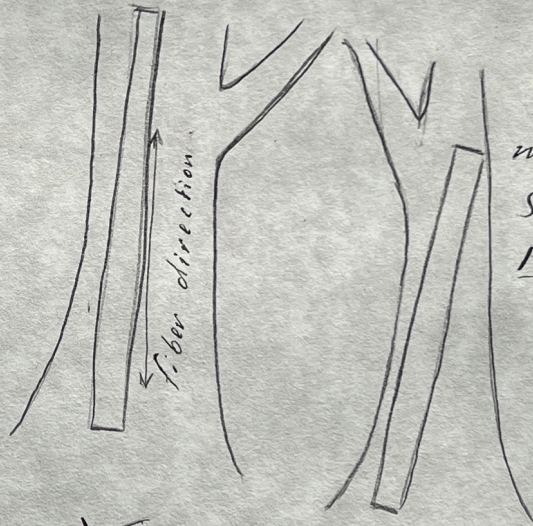
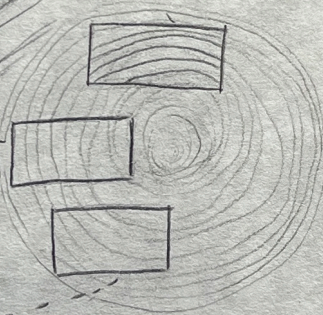
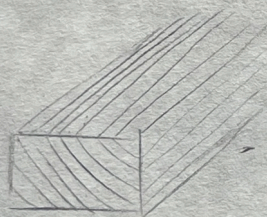
flat-sawn



quarter-sawn



rift-sawn



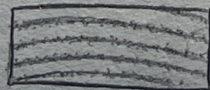
Board must be  
sawn  
parallel  
to fibers

more wood,  
less air



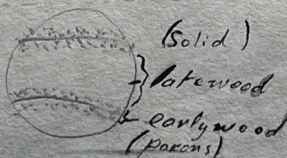
great

high late-wood ratio



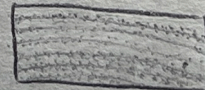
good

Tie-Breaker \*



\* for hardwoods

low late-wood ratio



bad

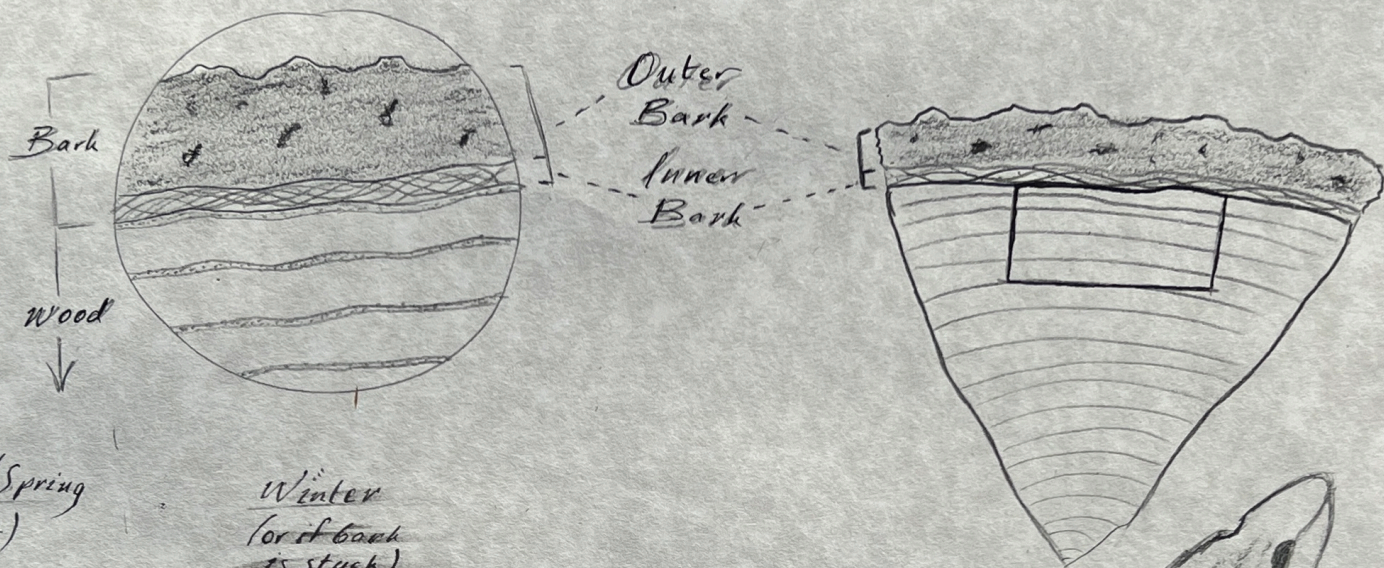
Much air little wood



awful



# Natural Bark



Summer / Spring  
(Bark Peels)

① Peel bark and immediately seal stave (sometimes optional)

② Monitor drying. If cracks form, slow down drying and seal stave again.

\* For very hard to dry species (plum) leave bark and slow drying as much as possible.

Winter  
(or if bark is stuck)

① Remove outer bark

②\* Remove most of inner bark.

③ Now or later, carefully remove remaining inner bark with a scraper.

- Ok. to leave thin streaks of inner bark

- Ok. to slightly expose wood, but be very gentle

\* Alternatively, you can steam or put the stave in a hot shower, or pour on boiling water to remove inner bark.



## Violated Back



Generally follow fibers  
but ignore slightly when  
impractical

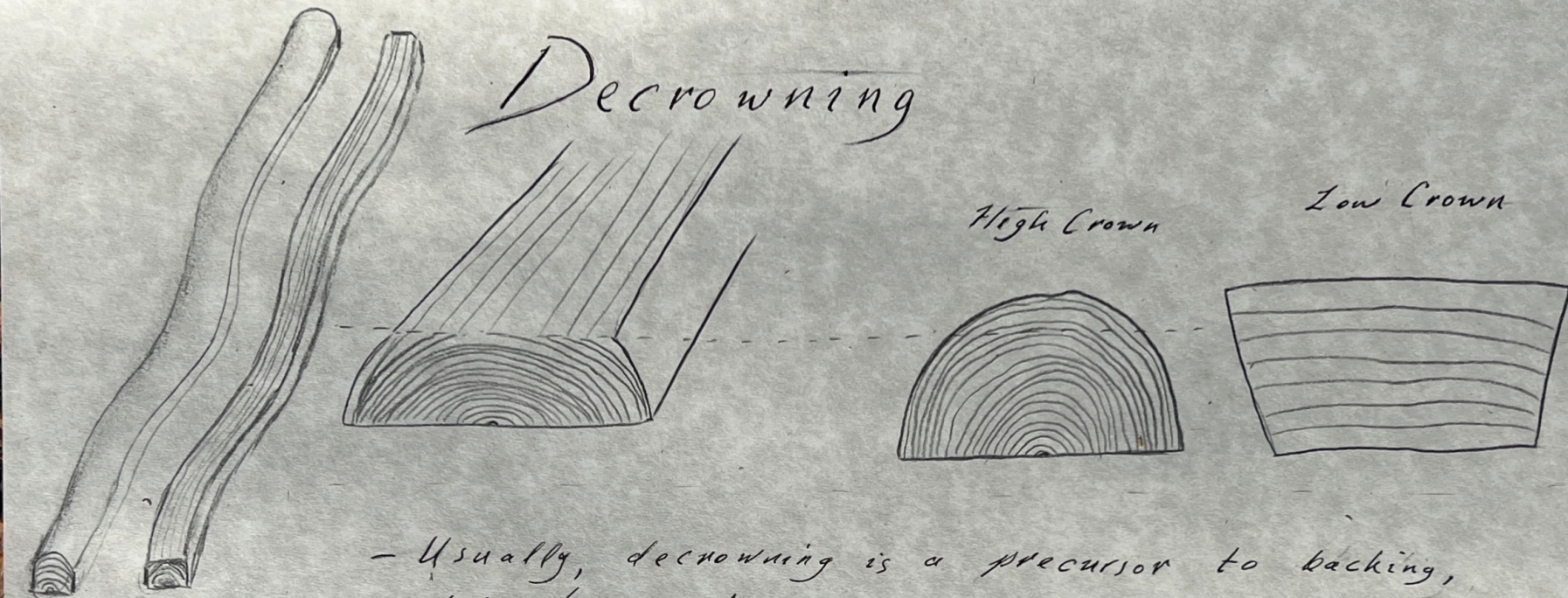
Ex: yew English longbow



- Back of the bow generally follows the fibers, but is not chased to a single growth ring.
- Best with tension strong woods (yew, sapwood, hickory, maple, etc)
- Usually with yew english longbows the sapwood is thinned to an even thickness (~1/4")
- All woods can take some amount of violation, but are likely stronger without it.
- If practical, attempt to chase a growth ring instead.



# Decrowning



Pristine Back      Decrowned Back

• easy, little work

• great for tension-strong woods

- hickory  
- maple  
- ash  
- elm  
etc.

• Problem: concentrates tension load along ridge of crown.

• advanced technique, extra work

• great for backings

• Distributes tension load over wide area

- Usually, decrowning is a precursor to backing, but decrowned bows can also be unbacked.

- Back is flattened in cross section like a board bow, but fibers are followed and character wiggles are preserved.

- Flat back distributes stress more optimally but only for near-perfect decrownings. Leaving the back alone is better than a mediocre decrowning.

- Tension-strong woods can handle a high crown without issue, the belly is the weak-link for most woods, so decrowning is not usually practical.



# Backings

## Soft Backings

- Rawhide, cloth, silk, plant fiber. Linen, denim, etc.
- Not recommended: digwalltraps, dog-chew rawhide.
- Soft backings add scratch protection & a mild tension safety boost.
- Little change to overall design.
- Can add at any point during build.
- Disclaimer: for quality wood, air is the best backing because it weighs nothing.

## Hard Backings

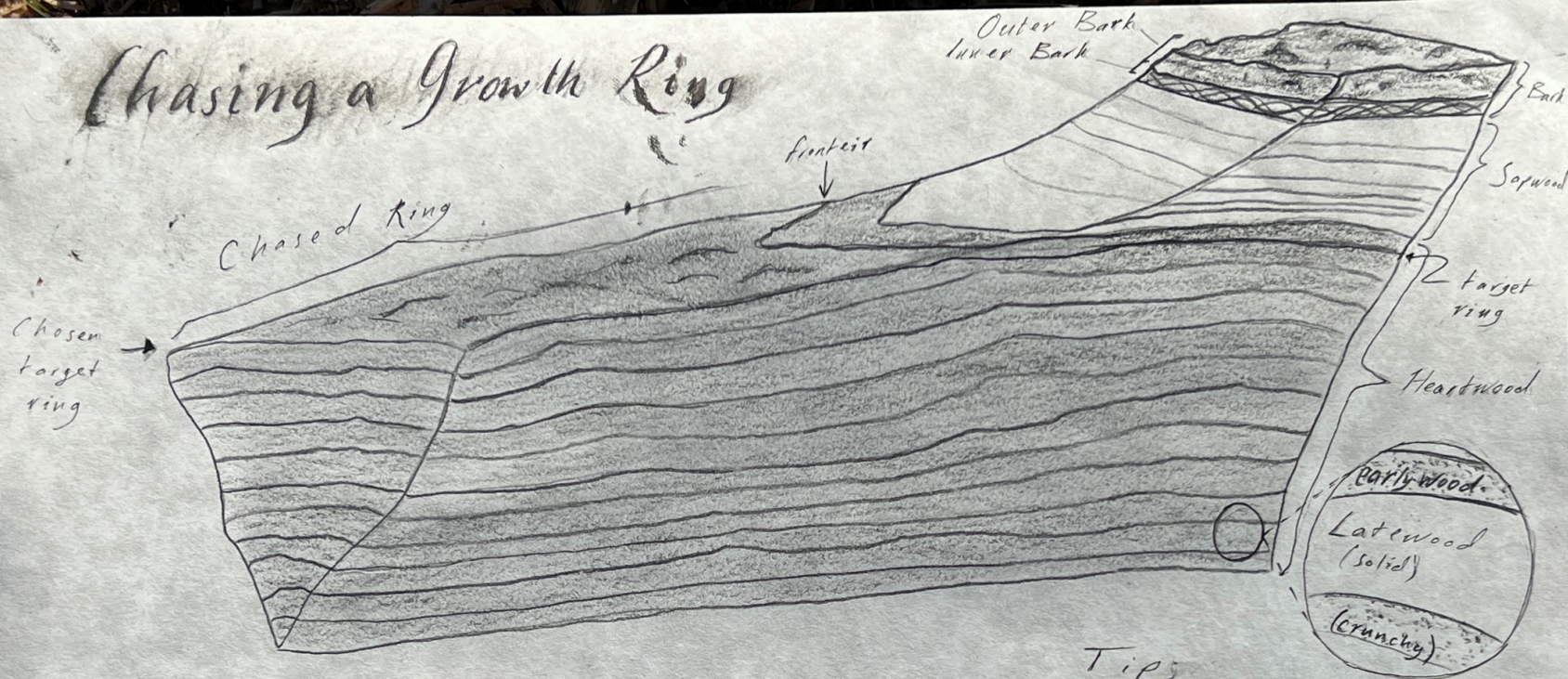
- Bamboo or wood laminates - birch, maple, ash, etc.
- Hard backings are added early in the build.
- Used to assemble the bow blank you will start with.
- Can be used to induce Perry Reflex by adding pretension to the backing.
- Allows for slightly less perfect wood selection.
- Generally pair tension-strong backing woods with compression-strong belly woods.
- Avoid fiberglass backing w/ wood belled bows. If you want glass on the bow, make a proper glass bow.

## Sinew Backing

- Major time investment
- Requires high skill / experience.
- Sinew shrinks as it dries, pulling the bow into reflex.  
↳ This moves the neutral plane, relieving stress from both back & belly.
- Sinew is very heavy and suffers in longer bows unless layers are thin.
- Well suited for short, highly stressed designs.



# Chasing a Growth Ring



## Tips

- ① Decide on a target ring.
  - ② Roughly chase the ring above the target ring.
  - ③ Carefully chase the earlywood (crunchy) layer of the target ring.
  - ④ Now or later, carefully scrape away earlywood to reveal pristine latewood ring.
- Choose a wide ring for an easier chase.
  - Select the highest desirable ring that is chaseable.
  - For whitewoods - just use the underbark surface for the back. No need to chase a ring unless there is damage.
  - For heartwoods, generally chase a heartwood ring. Only chase sapwood if the log was carefully stored like a whitewood.
  - If you can't see the rings well, try low angle lighting.
  - Follow the crunch & keep the frontier tidy.



# How to Chase a Growth Ring

- ① For dry wood skip to step 2  
 With fresh-cut heartwoods  
 (Osage, mulberry, locust, sometimes oak)

Either — leave bark & dry very slowly  
 or  
 — remove bark & sapwood, seal  
 back with glue or wood finish

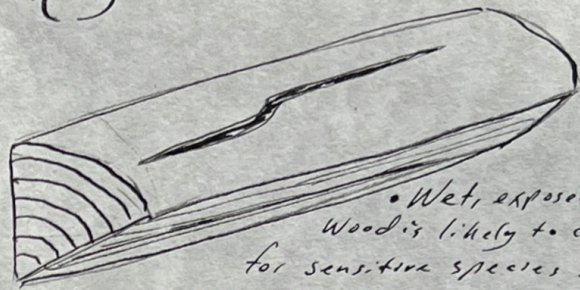
- ② Identify target ring that will be easiest  
 to chase.

- ③ Remove waste. Use this step to practice.

- ④ Iterate {  
 - thin +1 ring ahead of frontier  
 - stick blade in earlywood of target  
 ring and chase the crunch.

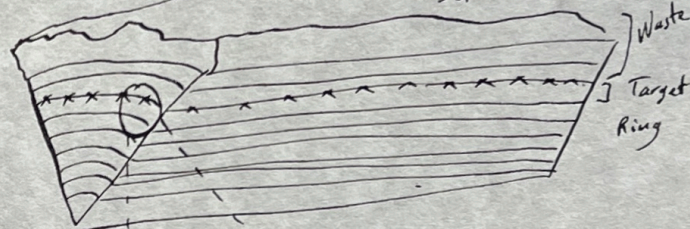
- ⑤ Now or later, scrape remaining bits of  
 earlywood to reveal pristine beach.

Tip: Chase 1 single ring as best you can.  
 Do NOT leave "islands" of growth rings  
 around knots, if possible.

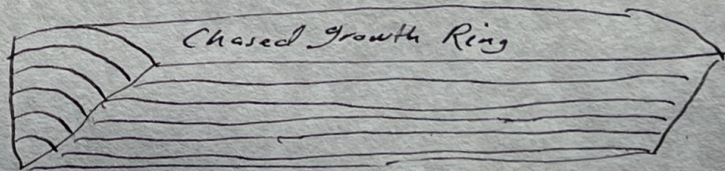
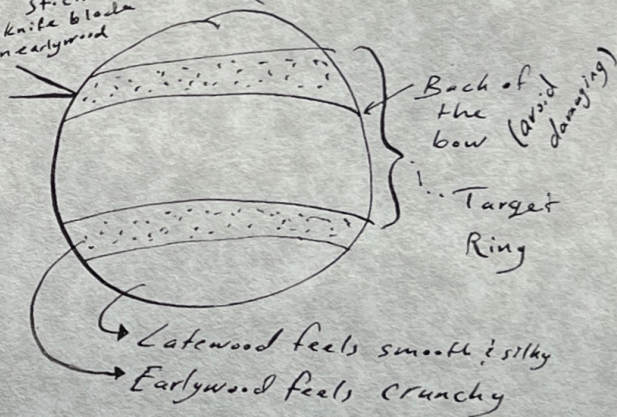


• Wet, exposed  
 wood is likely to crack  
 for sensitive species.

• Protect with bark, glue  
 or wood finish



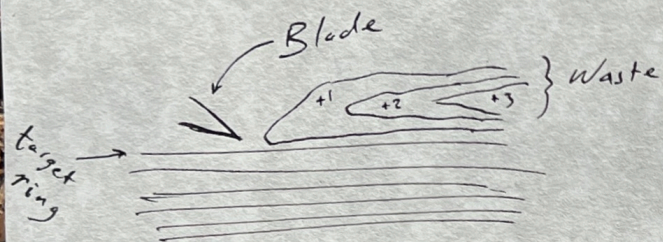
Stick  
 knife blade  
 in earlywood





## Removing a High Ring

↳ All O.K., keep going

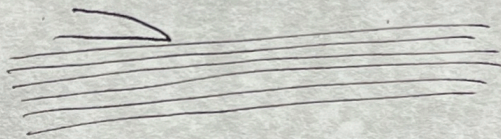


frontier moves with  
blade

## Removing a Low Ring

↳ STOP!

Pick a new target ring  
and start over



1 Violated  
Ring



2 Violated  
Rings

STOP  
if you  
see a  
trailing frontier,  
or if islands  
get bigger.



# Bow Stave

## Split Stave

Desireable Sapwood  
≠  
Healthy back  
ie: "White woods"

Desireable heartwood

Desireable heartwood-sapwood combo

Damaged, unhealthy back  
- rot, bug damage, spalling

tension-strong, healthy sapwood

tension-weak

## Board

- See board-selection diagram  
- Choose straight-grained board with unviolated fibers across the back

good enough board

rejected boards

### Natural Back

①

Bark is stuck (wintercut)

Bark slips off

Bark pops off during billering (yew)

Remove outer bark & carefully remove inner bark. Scrape last bits of inner bark. Can leave little twin streaks.

Steam stave, throw in hot shower or add boiling water

Peel bark off. May have to seal back for some species.

### Chase a Growth Ring

Chase a heartwood ring

Chase a sapwood ring

### Violated Back

• Suitable for tension strong woods only, though all can take some amount  
• Common for yew and English hollyhaws

Controlled "mistakes"

### Backing

Soft Backing  
- rattail, linen, plant fiber

Hard Backing  
- Bamboo, wood

Sinew Backing

### Decrown

• atypical for small diameter trees  
• Not necessary for tension-strong woods

### Sawn Back

(unbacked board bow)

## The Back of the Bow

- 6 ways -

In case of a mistake...

Chase a growth ring

or Back the bow

or Let it be (mild cases only)  
- Violated Back -