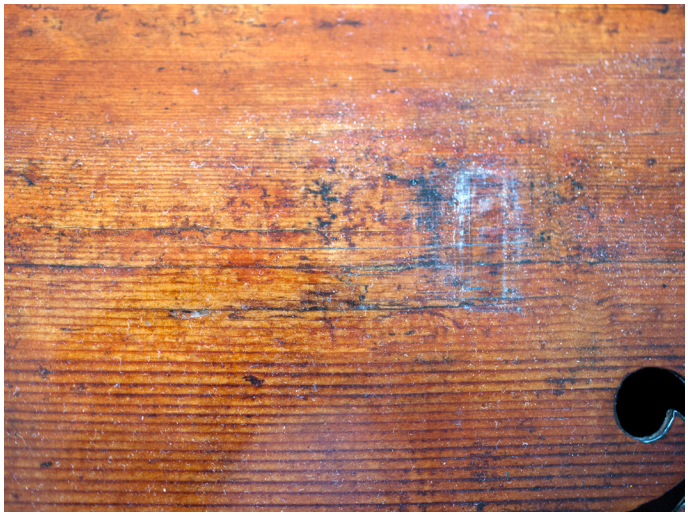
Giovanni Grancino
Violoncello Milano 1696

Restoration 2013-2014
Julia van der Waerden

The Cello had an excellent sound before the restoration, but was in a bad condition. Mainly the top had several cracks, worm damage and the arching was destorted. It had been restored before, but all three big patches needed to be replaced, since they did not fit anymore and the cracks got dirty and reopened. As the bassbar seemed to work well, I tried to copy it and used the thicknesses of the top as a guideline for the new patches. Forunately, I almost did not have to remove any original wood, except for one little patch on a very bad worm repair.
The back was in a much better condition. It only had some little cracks, the button needed a reinforcement and I made some studs as to stabilise the destorted areas. Also I had to replace the two lower corners.
A lot of work though there was on the ribs. They had many bad cracks, thick studs and also some worm damage in the corner blocks. But here as well, I was fortunate and could keep all the original wood of the ribs and linings.
The head only needed rebuchings and new pegs.

Following I will show some pictures from before the restoration, during the work and the final result.



after opening the cello, three big patches cover most the bassbar area. Probably there has been a lot of worm damage underneath an old bassbar.

to make an estimate, one has to count all the cracks and damaged areas and evaluate them.
The thickness without the patches was inbig areas only around 1 Millimeter.

As the top is so fragile during the whole process one needs a plaster cast to secure it. Here the cello is ready to get a cast made for it.

To even the destortion of the arching, the cast gets scraped.

The old patches are getting removed, showing a gap, partially filled with dried glue, but often just with plain air and dirt. This shows that the cello really is in need of a replacement of all of the old repairs.
When all the cracks are glued and the area is clean and even, a new piece of spruce is fit in place. The grain should match the original and it is crucial that the wood is of the best quality and aged well. Therefore I have a big stock of old, different kind of wood, where I can find the best piece.

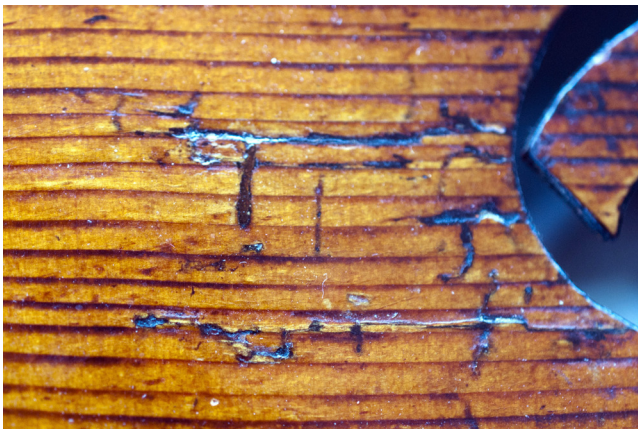
After the patch fits perfectly and even all over the breast area - to make sure this is the case, one uses chalk and very fine scapers - the still thick piece gets glued with hot bone glue. Only after drying for several days, the clamps get removed and the piece is thinned down with a plane. I leave it a little too thick for a long time to make sure, the arching stays in the new position.
Now the two other patches need to be done in the same manner.

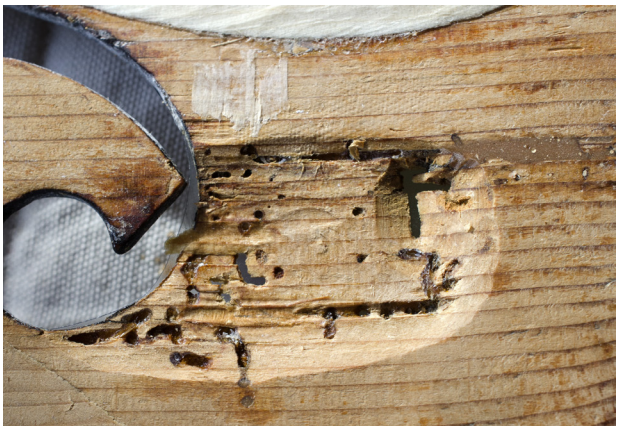
These two pictures show the area next to the lower saddle before and after the restoration. The cracks are glued, the patch is finished and invisible from the outside.

before

after

Now there remains the difficult task of the very damaged area under the F-hole.
Soon it is obvious, that it is impossible to remove the filling of the wormholes with any solvent. All of it needs to be removed manually, and making a new patch was inevitable. Also because this area moves a lot and would easily rattle, if the pieces are not safely fit.
The damage is visible from the outside and to make it look as good as possible I take little shavings of the removed original wood to cover the missing spots. As the original is very thin, I use a plastic foil to hold it together.
Only when all is even and stable I remove the plastic and fit a patch.





After all the patches are glued and thinned down roughly, I am mainly done with the woodwork of the top. To define the final thickness I use the old mesurements as a guideline as well as the experience of holding many old tops and the feeling when you move them an test their flexibility. Also the soud it makes is useful to find the perfect thickness.
Now I need to fit a new bassbar and replace some parts of the edge doubling. Also there have to be some studs, where the cracks do not get secured by patches.
After all is finished, I put some color on the replaced wood from the inside of the instrument to make it look matching better to the original.

After closing the body, the whole top needs to be retouched.

The back

The arching needs to be stabilized since it was very destorted in the area around the upper und the lower block. Therefore I make some studs, 10 mm wide and aroung 150 mm long.
The crack next to the button was opening very much, especially with the correction of the arching it had even more tension on it. So I have to find a balance of how much I can actually correct the arching and how much pressure I can use to glue the crack, so it still would be stable in the future.
The work on the button is clear. It is glued very badly and needs a patch to hold better to the back. There is a big pressure on this part of the instrument and it needs to fit perfectly.

corners before and after the replacement

The ribs

All the cracks need to be cleaned and glued properly. Often they are open, dirty and glued uneven. The old glue is hard to remove, because it is not the bone glue we usually use. Inside the cracks are held together with thick wooden patches, which are usually bad for the sound of an instrument.

Here some pictures from before and after the work:

before

after




Some pictures of the inside, first the old patches, then the newly glued pargment and linen.




The scroll

The pegholes are bushed several times and I have to replace them, and set new pegs.