
NEWS FOR CELLISTS WINTER 2012

Understanding Cello Varnish

Varnish is such an integral part of a cello's appearance that it is sometimes possible to take its full significance for granted. Good varnish is an essential ingredient of a cello's aesthetic appeal and also of its structural identity. Not only do the top layers of varnish give the wood its beautiful autumnal colour, but the under layers beneath the varnish protect the wood from grease, dirt, atmospheric humidity and sweat, even when the colour coat is worn away. Good varnish is transparent enough to allow the eye to see deeply into the beautiful grain structure of the spruce and maple wood, and greatly enhances the inherent beauty of these woods. The best varnish is also soft enough to allow an instrument to vibrate freely when played, enhancing its sound, and will continue to move and evolve with an instrument throughout its life like a living, breathing skin. Varnish is a powerful expression of a maker's skill and technique and the way it evolves and wears over time is an important indicator of the identity of an instrument, which is why it is so important to conserve as much of an instrument's original varnish as possible and to minimise interventions such as polishing and retouching.

(continued on pages 2-3)



Perhaps see your luthier instead?

Cello Gizmos

Here are a few cello-related offerings which we keep in stock in case they come in useful. Depending on the size and weight of the package, postage costs vary from £1.50 to £3.00.

Andrea Rosin (Orchestra and Solo)	£27.95
Salchow Rosin	£12
New Harmony wolf note eliminators	£15
Silicone tube bow grip	£1.50 per inch
'Suregrip' sponge bow grip	£6.75 for two

Cello Bows

Last autumn we spent eight busy weeks running *Take a Bow 2011*. Cellists visited the exhibition from throughout the UK and also flew in from as far afield as Taiwan, Spain, Norway, Germany and Switzerland.

Take a Bow veterans told us that the quality of the bows was higher than ever before and they were particularly impressed by the work of some new young makers including Emmanuel Carlier, Victor Bernard, Daoudi Hassoun and Dirk Loescher whose bows proved very popular and who will be sending us bows on a regular basis from now on for sale alongside the work of our regular makers. More than one third of the cello bows were sold during the exhibition and we have also managed to persuade the makers of the most popular remaining bows to allow us to continue showing them as part of our bow stock.

The exhibition was such an inspiring experience that we have resolved to keep a substantial stock of contemporary bows available all year round, so that cellists will always be able to try at least 30 exceptional contemporary cello bows alongside other antique bows for sale.

Take a Bow raised £1,400 for the International Pernambuco Conservation Initiative (IPCI) and these funds are now being used to help establish a new conservation project in Pernambuco State in north-east Brazil. We will continue to donate a percentage of the price of each sold bow to the IPCI to support their crucial conservation work. If you would like to donate, please visit <http://www.ipci-usa.org/> where you will find a Paypal link.

Newly arrived Cellos

Many thanks to all the players who have recently brought some fine instruments and bows to the Cello Exchange. Details can be seen on the back page of this newsletter and further details and photographs can be found on our website.

UNDERSTANDING CELLO VARNISH

The origins of stringed instrument varnish are believed to lie in an ancient wood finishing system used by Byzantine painters and craftsmen over 1,000 years ago. According to Koen Padding, a varnish researcher based in the Netherlands, this early wood finishing system involved the use of a primer to improve the wood, a sealer coat to prevent subsequent layers of varnish from sinking into the wood pores, followed by an undercoat (sometimes containing mineral particles) making a smooth surface for the paint or colour coat which was protected and sealed by a final layer of transparent varnish. Similar wood finishes can be seen in the work of instrument makers and other tradesman throughout Europe in the 16th and 17th centuries (notably the English viol makers Rose and Jaye).

The classical Italian violin makers (1550-1750) adapted this Byzantine system for their own purposes. If you look at a classical instrument with unworn varnish, it is impossible to discern the different layers of the undercoat, colour coat and varnish, because they are transparent so that we can see into the wood. However, if you look at a worn area of varnish, certain aspects of the system may become clear: you might see the golden brown colour of the primed and sealed wood next to surviving coloured layers of varnish and you can then begin to imagine the colour of the varnish which was applied after the primer and sealer. (See the web version www.aitchisoncellos.com/articlevarnish.htm for photographs of varnish.)

This wood finishing system was very flexible and could be adapted to many different applications, from icon painting to domestic wood panelling or furniture. Violin makers explored many different methods of priming, sealing, undercoating and colouring their instruments using a variety of techniques and locally sourced ingredients which in turn led to the distinctive variations in the colour, texture and softness of classical varnishes. For example, some makers would seal and undercoat at the same stage by combining different ingredients in a single application; certain stages followed by one maker might therefore be completely omitted by another. Makers also experimented with pigments: most varnishes during the early classical period were a pale golden brown, but later makers such as Stradivari began to incorporate intense pigments into their varnish to achieve a more dramatic colour.

However, classical makers resisted innovation in one crucial area: the use of pine resin in varnish. Traditionally, cooked pine resin was melted into a drying oil such as walnut or linseed oil, which formed the basis of most varnishes across Europe

during the 16th century. If cooked slowly, the resulting varnish always remains soft and flexible: a beneficial quality for stringed instruments. By the time of Stradivarius, most other woodworkers and makers of other musical instrument families (e.g. keyboard and plucked strings) had adopted more durable finishes made from the tougher resins available at that time such as copal from the Far East, but the great classical makers continued to use their out-dated wood finishing methods and materials with the result that their varnishes have remained delicate and flexible in a way that has enhanced the sound and beauty of these instruments.

If a traditional linseed or walnut oil and pine resin varnish is cooked sufficiently slowly, it will never completely harden, but if you cook oil varnish over too high a temperature, it will harden very rapidly and will then change very little with the passage of time. A varnish which stays hard and glossy for over 100 years is far too hard, and is the antithesis of the best varnishes to have been produced. Varnish which remains soft is in a permanent state of chemical evolution as it reacts with the oxygen in the air and also with other elements which come into contact with it, such as moisture, sweat and skin, as well as changes in temperature. This process never ceases, causing significant changes to the structure of varnish over time, including the extraordinary fact that linseed oil varnish becomes alcohol soluble after about 200 years.

The softness and plasticity of the best varnish also means that some varnishes acquire a complex surface texture over time, known as 'craqueleur'. This is one of the indicators of good varnish and can take hundreds of years to evolve, reflecting the minute seismic activity which takes place as upper layers of the varnish age differently from the lower layers and move in response to atmospheric conditions. In Cremonese varnish this surface texture is very subtle; when viewed through a magnifier it looks like a random network of gentle cracks in the surface of the varnish, like a very fine version of the crazing which occurs on the surface of antique ceramics or old master paintings, or a closely packed miniature ice floe. Some craqueleur is so subtle that it looks like a slight haze on the surface, or the dull bloom on a ripe plum, but when viewed through a magnifier it is possible to see that the effect is caused by the naturally textured surface of the varnish.

The craqueleur on Venetian varnish tends to be more pronounced than Cremonese craqueleur, giving some of Montagnana's instruments the appearance of being covered in a matt, leathery-looking substance. It is not unusual to see several types of craqueleur on the same instrument: for example a combination of a fine

'crocodile skin' effect, alongside areas of wrinkling. Many of the fine English makers in the late 17th and early 18th centuries such as Forster and Banks also used soft varnishes which have developed a beautiful craqueleur. From the 1740s onwards, many Italian instrument makers abandoned classical varnish recipes, often in favour of more rapidly drying, harder spirit-based varnishes. The old recipes were forgotten by the mid 19th century and have only been re-discovered by modern chemical analysis.

If you are lucky enough to have an instrument with old, soft craqueled varnish you will be familiar with its velvety, gentle beauty. The surface of the instrument will not be shiny, but you can actually see more deeply into the wood when the instrument does not reflect the light, just as you can see into the depths of a river in the shade of overhanging trees on a sunny day.

Sadly, craqueleur is one of the least well understood and loved indicators of quality in varnish. Historically, an all-too common response to craqueleur has been to polish it out by a process similar to French polishing. This gives varnish the glossy, transparent finish that we would associate with well-loved and polished furniture, but such polishing destroys the character and structure of the original varnish and also significantly decreases the value of the instrument.

Proprietary instrument polishes have often been used in the past by players and makers when cleaning instruments, perhaps because we tend to associate shine with beauty or cleanliness. There are two generic types of instrument polish, both with significant disadvantages: one type achieves a shiny finish by adding a thin extra coat to the varnish every time it is used; over time, successive layers of these thin polish deposits will accumulate on top of the original varnish, thickening it and changing the structure of the varnish from its original state. The other main polish type has an abrasive action, making the instrument shiny by removing a little of the original varnish on the instrument and revealing a fresh, shiny varnish surface. Unfortunately, regular use of abrasive polish on soft varnish can remove most of the original varnish from an instrument over a lifetime of ownership.

Varnish can also be irreparably damaged in one fell swoop when a violin maker – for his/her own reasons or under the instruction of a player – radically changes the varnish using a French polishing technique. In this operation the varnish can be partially melted and redistributed so that it loses its matt, textured surface and becomes far more transparent and shiny. Unfortunately, people who own or use instruments with great and original

varnish are sometimes advised to have their instruments polished in this way, to “bring out the colour” of their instrument. The most common victims of this procedure are instruments with a very complex, original craqueled varnish surface. Rather alarmingly, there has been an increasing incidence of this kind of varnish vandalism over the last few years. The most serious recent case was of an important Cremonese instrument on loan to a player who took it to a workshop for maintenance. When it was returned it had an entirely different appearance, with the once craqueled varnish polished beyond recognition and its value irrevocably reduced; a sad loss to the players, connoisseurs and craftsmen who cherished this instrument as one of the great icons of the varnish world.

Instruments do have to be cleaned from time to time as they accumulate dirt from the atmosphere and from the dirt and grease on their owner's hands, as well as rosin dust. The challenge is to remove dirt without removing varnish, since many varnishes are soluble in a variety of solvents including water. A good luthier will use appropriate solvents with great skill, care and patience in order to ensure that he/she is only removing dirt which had become bonded with the instrument, and not original varnish.

As a preventative, many players wash their hands before playing, as this radically reduces the amount of dirt deposited onto instruments. If you also wipe the cello gently with a very soft duster after each playing, this will remove most of the rosin dust. If the instrument has become very dirty or sticky, you should ask a luthier to clean it for you using non-invasive techniques.

If your varnish ever becomes scratched, please don't be tempted to stain the exposed pale wood in any way, as any stain applied to unprotected wood is virtually impossible for a restorer to remove. Just take your cello to a good luthier who will carefully seal the surface of the exposed wood with a suitable varnish, and then re-touch the damaged area without interfering unnecessarily with the undamaged varnish.

Photographs and diagrams of classical varnish and craqueleur can be seen on our articles page at: www.aitchisoncellos.com/articlevarnish.htm

Sources:

Raymond White, 'Varnish: Eighteenth Century Instruments Examined' (*The Strad*, August 1984 pp 258-259)

John Dilworth and Raymond White, 'The Real Thing' (*The Strad*, October 1984 pp 437-438)

Dr C.Y. Barlow and Dr J. Woodhouse, 'Firm Ground' (*The Strad*, March 1989 pp 195-197 and April 1989 pp 275-277)

Peter Forrester, 'Sticky Solutions, an assessment of 15th and 16th Century Varnishes' (*The Strad*, April 1988 pp 304-307)

Brigitte Brandmair and Stefan-Peter Greiner, 'Stradivari Varnish' 2010

SELECTED CELLOS AND BOWS

BENJAMIN BANKS CELLO c.1790

L.O.B: 29¼ (742mm) String length: tbc
Price: £60,000

A beautiful example of the work of Benjamin Banks in very good condition with well preserved deep red-brown varnish. Branded B BANKS SARUM and signed and branded internally.

KENNEDY SCHOOL CELLO c.1820

L.O.B: 30⅞" (766mm) String length: 27⅞" (689mm)
Price: £35,000

A fine professional's instrument in good condition with a rich, powerful tone and excellent projection. The beautiful varnish is a transparent red-brown.

GEORGES ADOLPHE CHANOT 1895

L.O.B: 29¾" (755mm) String length: 27½" (700mm)
Price: £22,000

A handsome cello by the famous Manchester maker in excellent condition with a rich, rewarding tone.

MICHAEL KEARNS CELLO 1998

L.O.B: 29½" (750mm) String length: 27½" (698mm)
Price: £16,000

A responsive, attractive cello in very good condition with an open, powerful tone.

LÉON MOUGENOT CELLO 1912

L.O.B: 30⅞" (765mm) String length: 27¼" (692mm)
Price: £14,500

An appealing, well built cello with a rich, powerful tone and antiqued red-brown varnish.

PRESTON SCHOOL CELLO c.1790

L.O.B: 29" (738mm) String length: 26⅝" (676mm)
Price: £12,500

This attractive old English cello is in very good condition, with a colourful and expressive tone.

CAUSSIN SCHOOL CELLO c.1890

L.O.B: 29⅝" (753mm) String length: 27⅞" (690mm)
Price: £12,000

This cello is in excellent condition with red-brown varnish and a strong, colourful and even tone.

GUERSAN SCHOOL CELLO c.1770

L.O.B: 28⅞" (733mm) String length: 27¼" (694mm)
Price: £10,000

An attractive French cello from the Guersan School in good condition with a beautiful tone of considerable quality.

HUNGARIAN CELLO c.1910

L.O.B: 29½" (751mm) String length: 27¼" (693mm)
Price: £10,000

A handsome Hungarian cello in very good condition with a warm tone and generous response.

REINHOLD GEIPEL ⅞ CELLO 1958

L.O.B: 28⅞" (720mm) String length: 26¼" (668mm)
Price: £9,000

A good quality ⅞ cello in excellent condition which has been played professionally for many years.

Selected Cello Bows

Eugene Sartory	tbc	S	£17,000
William Salchow	76.9	S	£4,710
Ron Fletcher	81.9	G	£4,580
Pierre-Yves Fuchs	81.4	S	£4,500
William Watson	80.0	G	£4,000
Carl A Nürnberger	83.5	S	£4,000
Bernd Etzler	82.3	S	£3,750
Michael Yeats	81.9	S	£3,600
Matthew Coltman	81.3	S	£3,600
Tino Lucke	81.6	S	£3,430
Bernd Etzler	80.9	S	£3,200
Ron Fletcher	80.6	S	£3,140
Steve Salchow	82.0	S	£3,140
Christian Wanka	82.8	G	£3,050
Gary Leahy	78.6	S	£3,000
Dirk Loescher	81.2	S	£2,970
Roger Zabinski	79.2	S	£2,940
Bernd Etzler	81.4	S	£2,750
Robert Pierce	80.6	S	£2,710
Steve Beckley	81.2	S	£2,610
Josef Gabriel	81.7	S	£2,540
Klaus Grünke	82.0	S	£2,540
Emmanuel Bégin	82.1	S	£2,280
Daoudi Hassoun	81.8	S	£2,200
Richard Wilson	82.2	S	£2,200
Josef Gabriel	80.8	S	£2,200
Richard Grünke	82.3	S	£2,030
Thomas Grünke	80.7	S	£2,030
David Tempest	80.2	S	£1,950
J S Rameau	76.7	S	£1,500
Pierce & Co	80.8	S	£1,360
German c.1930	85.2	S	£1,250
German c.1930	76.7	S	£1,125
German bow c.1920	78.0	S	£1,200
Elias Guasti	80.8	S	£950
Alfred Knoll	81.6	S	£820
Atelier Demarche	80.8	S	£750

Weight: = in grammes;
S = Silver; G = Gold