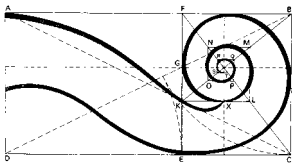

From the Maker's Bench

Part Alchemy, Part Art

The first in a three part series on Varnish

by Laurence Anderson

No aspect of violin making is so shrouded in mystery and so steeped in myth as the varnish. Varnish is, according to the many books and articles on the subject part alchemy, part chemistry and part art. As the value of the old Italian instruments, and especially the old Cremonese instruments, has increased over the centuries, the claims for the varnish on these instruments have become more and more extravagant. Some have proclaimed the varnish to be the secret to the sound of the old Italian instruments, a secret that the masters took with them to their graves. This proclamation has been repeated so often that it has become almost universally accepted. Violin making is of course a process. From the selection of the wood in the forest to the final positioning of the bridge, everything contributes to the sound. Varnish is a part of the process, but in truth, a great varnish cannot salvage a mediocre violin and a mediocre varnish cannot destroy a magnificent one.

This is the first of a three-part essay exploring varnish. I hope to expose in these essays some of the myths and the extravagant claims and share some of results of modern research on the varnish of previous centuries. This article deals with touch-up varnish.

Pictured is a 1723 Stradivarius photographed with ultra-violet light. The refraction clearly differentiates to the trained eye the original varnish from the touch-up. This photograph reveals that nearly 80% of the original varnish has worn off. If varnish were the secret to the sound, then this instrument, stripped of most of its original varnish, would have suffered a profound deterioration in sound. In fact it is still a prized solo instrument. Indeed, as I am writing this article, I have before me a 1746 Brothers Amati, a 1606 Maggini, and a 1763 Balestieri. Only the Balestieri has more that a fraction of its original varnish, yet still they all speak with a valued warmth and complexity.

Varnish changed from century to century, from school to school, from city to city and from maker to maker. Makers even experimented with different varnishes during their lifetimes. Scholars have recently suggested that makers purchased their varnish from the local apothecary, so varnish might have changed as the supply changed. Of course all statements on varnish are speculative because the old masters kept so few records. Nevertheless the recipes are still available and informed opinions about varnish are possible.

I recently restored the varnish on a violin made in 1760 by the Neapolitan master, Janarius Vinaccia. I have been caring for the violin, owned by Andrea Een, a professor at St. Olaf and a member of the Minnesota Opera Orchestra for several years now, and have been urging her for almost as long to have the instrument cleaned. It was coated with layers of touch-up of varying quality and centuries of bow rosin. Varnish must be strong enough to protect the instrument but elastic enough to allow the instrument to vibrate freely and to expand and contract with the seasons. Layers of stiff shellac, touch and bow rosin can act as a mute. I suspected that the layers of dirt and touch-up on her violin might be restricting sound.

Cleaning begins with Q-tips soaked in grain alcohol. (This is a controlled substance in all but a few states. I have to smuggle it into my shop from states where quality moonshine is still sold!) The instrument is initially cleaned while held under UV light, which clearly reveals the original varnish even under layers of dirt and touch-up. Cleaning proceeds deliberately, for the older varnish is the more difficult it is to dissolve and remove; the original varnish is almost always the most difficult to dissolve.

The color of my Q-tip for the first several hours is a dark green, the color of bow rosin. Initially that is what I am removing. As the cleaning progresses, color moves to a honey brown, the color of touch-up. The cleaning finally uncovers the original iridescent orange varnish on the back in the C-bouts. Cleaning instruments is a little like an archeological dig. I uncover the work of past restorers, some quite skilled, other amusingly incompetent.

I use two types of touch-up varnish. For quick repairs, I use an alcohol soluble mixture of shellac, copal and sandarac. This is a quick drying durable clear varnish. I suspend pigments in the varnish to match the color of the original. For major restorations, I

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use a variety of cooked terpenes, the color and elasticity determined by the time and temperature it is cooked, mixed with combination of alcohol and turpentine. This dries in a few hours. I can create texture by heating the varnish before applying, and I can simulate crackle by adding a little walnut oil. This touch up, to the naked eye and under UV inspection, has an remarkable resemblance to old Italian varnish.

When Prof Een played the instrument after restoration, she smiled with a little twinkle in her eye. She asked me if I noticed an improvement in sound. I did notice a sound a little more brilliant and focused. It was not a profound change, just enough to put a smile on the face of a musician. This is what a good varnish can do.

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