After years of research and experimentation, Boris Sverdlik has found a varnish process which he believes creates a look and sound comparable to the great Italian masters. **Barrie J. Kolstein** explores his theories

Recapturing the golden period

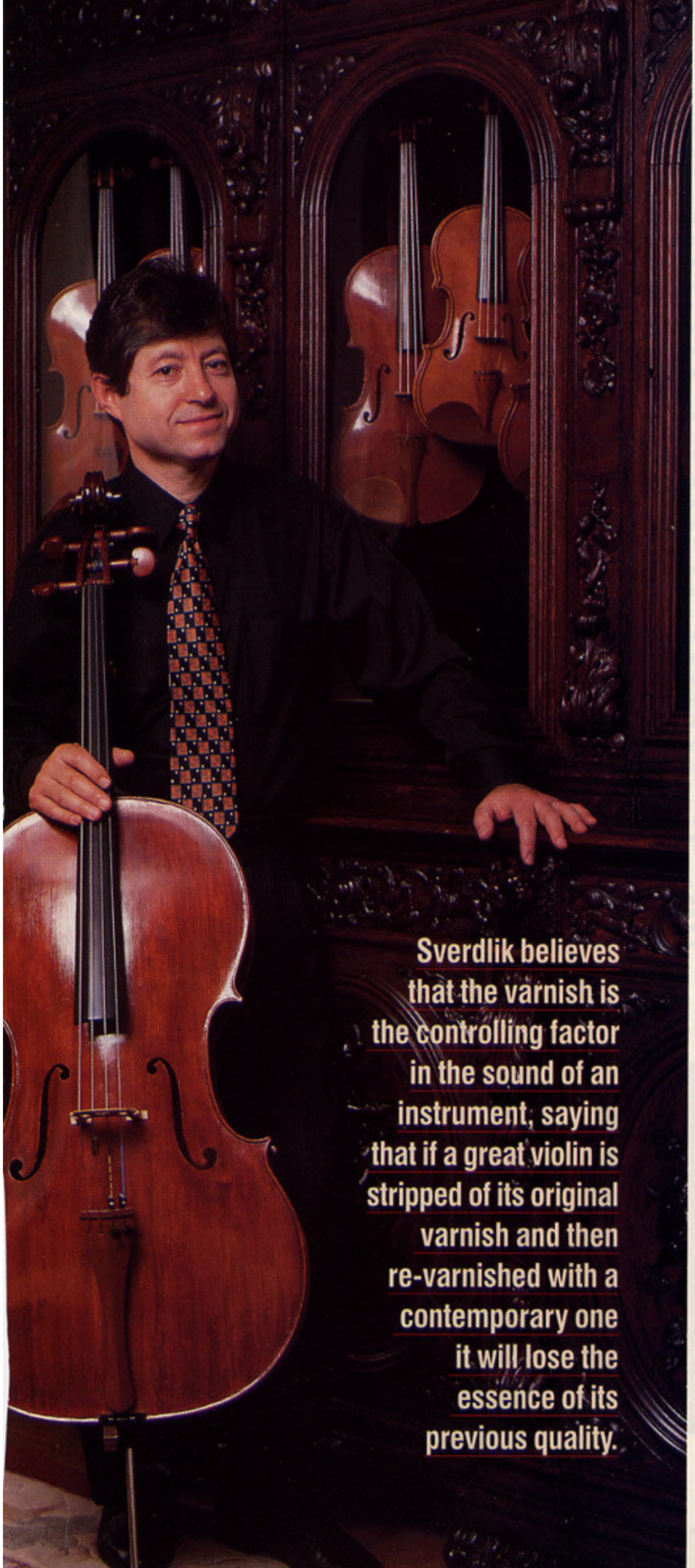
Boris Sverdlik, a gracious and talented man and a fine contemporary violin maker has, since 1986, been a part of Manhattan musical life, in his workshop overlooking Carnegie Hall. There Sverdlik has pursued his interests in new making and restoration, and, especially, his research into golden period varnish.

Sverdlik was born in Russia in 1948. Trained initially as a violinist, he journeyed to Israel in 1972, where he gained first-hand experience with artisan workmanship. His potential was soon recognised and he became an apprentice to the Tel Aviv-based violin maker Amnon Weinstein. Three years later Sverdlik enrolled in the International School of Violin Making in Cremona, studying under Georgio Ce, and returned to Israel in 1976, where he established his own violin-making shop. His move to the US in 1982 brought him to New York where he worked under the auspices of Rene Morel in the esteemed shop of Jacques Français Rare Violins, leaving in 1986 to set up Boris Sverdlik Violin Workshop, Inc.

Sverdlik's formal training not only provided him with a depth of experience in new violin making but also revealed his expertise in restoration work, an invaluable asset enabling him to make string instruments that have wonderful aesthetic qualities, possessing seasoned 'old world' tone qualities without sacrificing the structural integrity of an instrument. 'Rene Morel opened my viewpoint towards re-elevation of fine restoration and the research of varnish techniques,' says Sverdlik.

Sverdlik's philosophy of violin making is one of re-capturing and maintaining the tradition that existed with the master Italian makers of the so-called golden period, something he feels has been lost in the modern schools of violin making. His training and development, through observation and respect for these great makers, has enabled him to incorporate their methods into his approach to instrument making and restoration. He has adhered to what he feels are the quintessential guidelines of the master makers: that of design and form, arching and varnish. All three factors have a definite cause and effect upon functionality and the tone qualities of any instrument.

Sverdlik's credo takes a drastic turn as he stresses that the most essential detail between one instrument maker and the next is the varnish, believing it to be the controlling factor in creating success or failure in the overall quality of a violin. Many luthiers, he points out, have copied the form, design and archings of a Strad but almost none have succeeded in capturing the quality of sound. And although the woods, the style of making and the locality of the maker can vary from instrument to instrument, Sverdlik believes that the varnish is the controlling factor in the sound of a string instrument, emphasising that if a great violin is stripped of its original varnish and then



Sverdlik believes that the varnish is the controlling factor in the sound of an instrument, saying that if a great violin is stripped of its original varnish and then re-varnished with a contemporary one it will lose the essence of its previous quality.

re-varnished with a contemporary varnish it will lose the essence of its quality that previously existed. This directly reflects in the sound, authenticity and value. Sverdlik discusses the reality that if cuts from the same sample of wood of the same sample of wood are are cut into similar dimensions when in the white or unfinished stage, they have comparable tone qualities when tapped in order to generate a tone. However, if these samples are varnished with different mediums and application techniques, distinctive differences in tap tones become apparent from sample to sample. This supports Sverdlik's belief in the importance of varnish in producing an instrument of superior tone quality.

Sverdlik's expertise as a restorer has enabled him to make string instruments that have wonderful aesthetic qualities, possessing seasoned 'old world' tone qualities without sacrificing the structural integrity of the instrument.
Opposite page: **violin by Sverdlik made in 1994.**
This page: **Sverdlik's copy of a Matteo Goffriller viola**

Photos Sergey Zavorin

Sverdlik points out that 'transient' makers who shifted from locale to locale within Italy carried both the continuity of craftsmanship and the continuity of woods with them. The variance in the quality and technique of varnishing within each locale, however, often greatly influenced and affected the environment the makers were working in, thereby adding support to Sverdlik's claim as to the effect of varnish on an instrument. Sverdlik states that, similarly, it has been shown that when a different nationality of maker enters another country and adopts the varnish techniques of that country, he or she becomes regarded as a maker of that nationality; makers including Goffriller, Tecchler, Platner and Panormo support this premise.

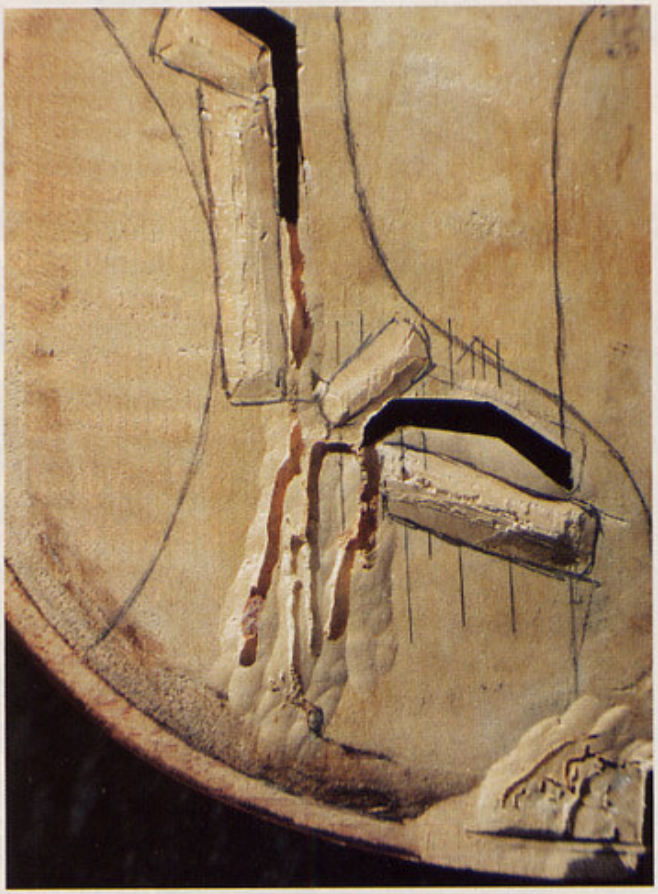
But is this transition from one country to another by a maker more than just changing varnish techniques or, rather, the use of a more localised wood supply and/or an approach to making that follows techniques associated with, say, the Venetian, Roman or English schools of violin making? Sverdlik agrees that the wood and a maker's approach to it is a factor in the making of a fine instrument, but he is committed to his belief in the importance of varnish. Subsequent makers situated in the same locale as the golden period Italian makers had access to similar quality wood with similar density and tone qualities, yet the final product was not tonally in the same class as the original master instruments. The reason? The varnish!

Sverdlik discusses the notion that the downfall of the golden period Italian sound and workmanship lies in the advent of a newly formulated Italian varnish. This replaced the older varnishes' cooking process which created a great deal of smoke, forcing it to be produced outside the cities. The original golden period varnish was made on a large scale by pharmacists or varnish makers and was sold to individual violin makers. The varnish that was introduced in the late 18th century was more or less an experimental error, made by the contemporary makers of the day who began to experiment with the varnish-making process in the hopes of creating a more simplified and economically viable varnish. This newer varnish was much easier to manufacture and could be made within a violin maker's household or shop, thereby alleviating the financial burden upon the violin maker to buy the golden period varnish from a commercial source. Unfortunately, over time this new varnish became further simplified by the process of dissolving resins and pigments into spirit solvents (alcohol) which had a tendency to evaporate after about six months, resulting in an instrument being sealed within a hard resin. This created a harsh flat tone lacking in depth and sonority, a far cry from the essence of sound of the older Italian master violins.

The cooking process used by the old Italian masters transformed natural resins into varnish that was comparable to that of Stradivari. Thus when this golden period varnish formula disappeared, so too did the incomparable quality of sound associated with the fine master Italian violins, and what seemed to late-18th-century violin makers as progress resulted in the downfall of an important part of the tradition of violin making.

After many years of establishing his own thoughts and opinions on this area, Sverdlik discovered historical reference in the Hills' book, *Antonio Stradivari, His Life & Work*, in which the Hills stated their belief in the importance of varnish to the sound of an instrument. 'I was so pleased when I first had the opportunity to read the Hills' comments on the connection of golden period varnishes and sound,' says Sverdlik of the book first published in 1902. 'To see such findings were supported by the Hills' research so long ago made my research all the more gratifying.'

Carlo Antonio Testore's c.1730 viola was suffering from extensive worm damage before Sverdlik restored it. Once the cracks were washed and glued the instrument needed grafting and patching. Sverdlik cut out chips of wood from the instrument's body, each chip having the same grains and flames as the spot where it would be grafted. Trying to preserve as much of the original wood as possible, he followed the worms' passage ways, uncovering them and smoothing out uneven surfaces. After fitting, each patch assumed almost improbable shapes, complicating his work further



Photos B. Sverdlik

As Sverdlik states, 'it is like re-inventing the wheel'. Violin making and its future lies within past traditions and varnish is an important part of this circle. After numerous years of extensive research Sverdlik has rediscovered what he surmises were the original techniques of varnish preparation and application used by the Italian master makers. His premise is that all great golden period varnishes were made after the 16th-century makers, prior to the 'new period' late-18th-century varnish formula. Many makers since have attempted to duplicate the golden period varnish by using the newer formulated varnishes, but none matched the effect upon the tone qualities as well as the aesthetic qualities of the master makers' varnishes. The golden period varnish stayed within the parameters of a light reddish-amber colour to a deep reddish-brown: the colour of the master violins. Sverdlik feels that this is not accidental but a by-product of the preparation procedure in the making of this exceptional varnish. This varnish is pigment free and is a product of a simplified cooking process which uses neither alcohol (spirit) nor oil-based solvents in the making process.

For the varnish to achieve a colour range from light reddish-amber to a very deep reddish-brown, the quality of resins used, the duration of the cooking process and the degree of temperature that the varnish components are exposed to must be taken into consideration. The application of the varnish to different woods, its absorption rate and the compatibility of the colour of the varnish to a specific wood will have an influence on the final colour of a new instrument and the retouching varnishing of restorative work.

But what about the light-fast qualities of this varnish? 'The varnish by nature is not what is considered light fast,' Sverdlik explains. 'However, I have discovered over the years of experimentation that a degree of protection to the colour can be created by the amount of layering application of the varnish to a newly made instrument.' Sverdlik does not advocate over-varnishing, believing that a great varnish allows flexibility to all parts of the instrument. He does admit, however, that the final layer of varnish is of a slightly different formula, applied to give additional protection to the instrument's colours.

Sverdlik is opposed to sanding the wood before applying the varnish, preferring it to have a burnished-scraping effect, a high-quality method whereby the top surface is scraped so that the grains are raised or accentuated, giving the wood an almost polished finish. Once prepared, the instrument has his specially formulated varnish carefully applied in a slightly heated form directly to the raw wood. A process of double-heating the varnish in heated sand ensures that the varnish is uniformly heated during the application. Before the varnish is applied it is a reddish-brown colour, but on application it penetrates the wood, perhaps 0.2mm deep, resulting in a wonderful golden-honey underwash or sizing layer. Sverdlik controls this depth of penetration by moistening the wood and as the exterior of the wood begins to dry, the varnish is applied. While the interior of the wood is still damp it prevents the varnish from penetrating too deeply. His varnish is not affected by moisture or humidity and the remaining moisture in the wood eventually dries completely.

By using this one varnish for everything, total material compatibility is achieved. Within a few brush strokes, the instrument transcends through a spectrum of lush reddish-brown colours. When the instrument is fully varnished it is ☛

The varnish introduced in the late 18th century was more or less an experimental error.

then ready for a final rub down and polish to enhance the patina of the varnish.

The finished product of this 're-found' varnish is a deep transparent colour that is dry and playable within two weeks. The varnish is a flexible medium that allows the instrument to freely vibrate. It thus does not restrict the back, top tables or ribs from properly producing a calibre of vibrations that will in turn create rich sound qualities, abundant in overtones and aesthetic likeness to instruments synonymous with the fine Italian instruments of yesteryear.

The arching, outline, graduations, interior components, neck setting and, of course, choice of woods are a vital part of producing a fine instrument. However, Sverdlik places the final emphasis on the varnish as the true key to making a finely crafted instrument, one of superior sound quality equal to that of the workmanship of the maker. Sverdlik spoke of his meeting in Parma, Italy more than 20 years ago, with Maestro Renato Scrollavezza, who asked him: 'How many maestros made a Stradivari violin?' His response to Scrollavezza was, 'one maestro exists for each Stradivari or any great instrument: the maestro himself, Stradivari.' Scrollavezza replied: 'No. Two maestros exist: that of the Maestro Stradivari and the maestro tempo [time and usage].' Over the 20 years that have passed since this meeting Sverdlik came to realise that a third maestro exists, in the form of the hands of fine restorers who have put their influence and efforts into restoring a fine instrument.' One cannot argue with this viewpoint and it is evident that it applies to the realm of his restorative work.

Sverdlik is an expert restorer whose approach is steeped in tradition. He is not adverse to change, but he approaches the altering of the original makers' work guardedly. Too much restoration over the lifetime of an instrument has resulted in unnecessary and detrimental restorative work on fine instruments. Re-graduation of the master instruments, in Sverdlik's opinion, is something that should not be tampered with unless, for tonal reasons, it is absolutely necessary. Even then it should be approached conservatively. Too often Sverdlik's restorations involve adding wood in order to re-establish the quality and integrity of the original maker's work.

Sverdlik's fine restorative talents are clearly exhibited in an extensive restoration of a fine *c*.1730 Carlo Antonio Testore viola, suffering from extensive worm damage. Sverdlik meticulously added exterior grafts to the damaged areas which were taken from cuttings within the viola to resurrect this instrument from a certain structurally destructive path. Upon the restoration of the varnish, using the results of his research, he created an undetectable match of colour and quality. 'The compatibility of materials and application and achieving a closeness to the methods that the original maker followed is the key to the proper restoration of varnish,' he asserts.

Sverdlik's instruments show fine, steady workmanship, while his varnish demonstrates clarity, depth and a purity that is a true complement to his instruments. The success of any violin maker is measured by the respect of his or her peers and, more so, by the performing artists that are loyal to the maker and his or her instruments, and Isaac Stern is not the only one to classify Sverdlik as 'an outstanding violin maker'. Through dedication to his craft Sverdlik has glorified the art of violin making and restoration. ❑