Newsletter

of the British Violin Making Association

Editor: Shem Mackey

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Editorial

London accomodation

Members of the BVMA who need somewhere to stay in London while attending exhibitions (Benslow concert, or otherwise) should make contact with London-based members who can provide accomodation in their homes. Please make contact with the officers of the association if you do not know any members in the capital and they will assist you in whatever way they can.

Benslow Trust concert and exhibition

The Benslow Trust is holding another concert at the Purcell School on 21st. November 1997. The BVMA have again been asked if a number of makers would like to exhibit. This time the numbers have been limited to eight. Please return the enclosed form if you wish to be considered. As before the names will be drawn randomly. Previous exhibitors are not eligible.

Wanted: Newsletter Editor

As this is my last newsletter as editor I would like to thank everyone who supplied me with articles and letters over the past two years, whether voluntarily or under duress! They were all greatly appreciated by me and from the many replies that I have recieved I know they were equally appreciated by the membership of the BVMA.

Deadline

Next issue 28th November. Send articles to Shem until further notice.

Letter from the Chairman

It is with much regret that ("our friendly editor") informed me of his intention to stop editing the newsletter.

Since the first issue in September 1995, already two years he has produced , not only nine excellent quarterly newsletters but also set an outstanding standard for future editors to follow. Having worked closely with him I can assure you this is no mean feat. Unfortunately pressure of work has forced his hand.

It falls to me to appeal to all members in order to find a new editor (or editors, possibly a team to spread the load) to carry on with this great publication which is at the core of the BVMA.

A fitting tribute would be for all of us to work for the making of the newsletter, be it editing, providing articles, letters or photos, helping with the mailing (which incidentally is a whole day's work) or doing any related jobs. Please give your newsletter the help it deserves. To finish I would like to say on behalf of everyone; Thank you Shem.

Marc Soubeyran

The Vogtlander Violin Makers, alive and smiling

What happened to the violin factories of the former East Germany? The history of these manufacturers and craftsmen reads almost as a history of central Europe itself. The great changes and conflicts of the past hundred years are reflected in the fates of these makers whose resilience still ensures that the craft is alive and well and on the increase. ***Tansin Dietendeck*** *recently took a trip to the region and here she tells us what she found.*

The large factories of Markneukirchen and Klingental in the Vogtland of Germany, producing 80% of the worlds violins at the turn of the century are known to most violin makers, but what of the Vogtlander makers after that, after the war, after the Russian occupation, after 40 years of communism and after the last upheaval, German Unification? I went to Markneukirchen andspoke to two masters about how it was, how it is and what the future holds for them.

As you drive into the town it is easy to see why the rumours spread that Markneukirchen was almost dead, a ghost town. It seems shut at first, passing derelict old houses and factories with musical instruments painted on decayed walls gives an almost haunted feeling, but then I walked into the centre and the life slowly became apparent. It was market day in the newly reconstructed centre of a town thick with music shops and music. The shop windows nearly all have some sort of instrument in their display. The sides of the houses very often have a form of tiling on them depicting in almost cartoon style, different forms of instrument making and the names of different companies. The small brass plaques by the front doors tell you of the trade of the inhabitant and they are fun to read - brass instrument mouth piece maker, reed cutter, string maker. Not forgetting the museums, including one for Nickelodeon music machines. Then, just to reassure you that you're not in a living museum, you may pass the hairdresser Nuremberger or be almost run down by the speeding green van of the Electrician Pfrezschner. So what is really going on here ?

Wall Street crash

Eckart Richter was kind enough to bring me up to date on recent history. He had himself learnt violin making in the 50s passing his mastership in 1959 which was apparently not easy, as I was about to learn, then became self-employed 'Communist Style' in 1970. He explained, "even in the old days the violin making industry relied on export. Most of the factory instruments were exported to America and when the Wall Street crash came in 1929 the violin market crashed too. Nearly all of the factories were reduced to nothing by 1930. The German economy was also

spiralling at this time, inflation hitting 400%, everyone was in the same boat, but then the war came and all normal life was halted". After the war, Vogtland lay in the Eastern part of Germany, the area was claimed by the Russians and they very quickly occupied it. By the middle 50s, the iron curtain was securely in place and East and West cut off from one another, but the violin industry began to thrive again in Markneukirchen. The State quickly realised the financial benefits of exporting cheap violins to the 'capitalist' countries who couldn't afford to produce their own. Mostly the Asian market was targeted and remains today the largest export possibility. The factories were set up in a true communist style, the workmen were taught to make instruments quickly, to a certain standard only, for the required market. Further qualifications in this trade came only in the form of 'industry master' which had no practical connotations, they were employed as the factory leaders only, not masters of violin making. It was almost impossible to learn the 'handcraft' skills of violin making, but a few managed to. Eckart Richter went to Weimer to study with an old master there. Even after this fine training the masters were not allowed to set up on their own, they were expected to work in the factory until the 1970s when the State recognised the huge market they were missing out on for good handmade instruments. Existing masters were allowed to set up their own workshops and more important to take on apprentices and educate

journeymen.

In 1976 the first batch of new masters were released, Reinhard Boensch was amongst these and he told how is was for these new masters. "Being able to have your own workshop was certainly a step forward in quality violin making but the masters weren't free to make their own decisions. Each one of us in Markneukirchen had a contract imposed on us by the State to make 4 to 5 instruments a month, so speed was everything". These quality instruments were sold through a company called Migma to the Asian market.

A unique school was set up in 1988 (The Master School) to forward the skills of violin making. After three years of apprenticeship the students could go on to the school for a further four years. Both Eckart and Reinhard teach at the school which is still running and had the previous night celebrated the end of the school year, which might explain their abnormally subdued nature when I spoke to them.

The German Unification of 1990 doesn't seem to have affected the craft at all. Migma became a co-operative and continues to buy the instruments from the makers. The big difference now being, the master can choose for himself how many he wants to build and in what style. There is an important distinction impressed on all the visitors to Markneukirchen between the 'industry' and the 'craft'. Since the 70s they became quite separate and remain so. These new times look very bad for the industry now formed in a company called 'Musima'. Labour costs are too high and they went bankrupt earlier this year, potentially causing further unemployment for the factory workers. Although a buyer has been found many hold a pessimistic outlook for their future but Eckart was very insistent and proud to make clear that the future of the handcraftsmen is all sunshine. "There are 130 workshops of different trades taking 500 employees , either apprentices or people in associated jobs. Nearly all the instruments are still exported and this trade has not changed, not a single workshop has closed since unification".

Schoenbach

But what of the third town in this triangle of violin making industry, Schoenbach? Laying only three miles away from Markneukirchen through the beautiful forests covering the whole area, it still remains cut off because it is actually over the border in the Czech Republic. In order to drive there you must cross an official border crossing which is a good 20 miles away. If you wish to visit though don't look for Schoenbach on the map because it's not there. Schoenbach was originally founded by Germans over 300 years ago, hence the German name. After the war all those of the German 'race' were expelled. Those violin making families of Schoenbach went to Bubenreuth and built up the thriving centre of today on the Schoenbach model. The town reverted to it's Czech name Luby, which incidentally means 'the ribs of instruments' in Czech. Since the collapse of the iron curtain the factories of Luby have found survival harder than

the masters of Markneukirchen. After the factory's bankruptcy almost the entire town is now unemployed. Some have turned their hand to other things and you can find beautifully made purfling of any material or thickness you require as well as rosettes and inlay for guitars and early music instruments at extremely reasonable prices. A relaxing walk through the forest is certainly worthwhile if you ever visit Markneukirchen to pick up a few little treasures from Luby.

As I sat in Reinhard's back garden, eating cake and drinking tea I too could feel the optimism that surrounds the people here, but as the rest of Germany tries to blow away the clouds of depression, how will the future of violin making progress here? Both masters replied 'good', but their vision of the future differed. Eckart as an older more traditional maker saw the future as it is now, exporting anonymously through Migma for an almost guaranteed income, what could be better! Reinhard, from the newer generation, felt a need to be in contact with the musicians and other makers. He had a certain desire to lessen the contact with Migma, slow down and get back into personal contact with his instruments. Either way, Markneukirchen is alive and although not exactly kicking, smiling with a certain security.

HEAT TREATMENT OF TOOL STEEL FOR INSTRUMENT MAKERS

***John McLennan**, a retired lecturer in metallurgy at the University of Newcastle (Australia), has been actively undertaking research into the materials acoustics and construction of violins since 1980.* *In the following article he explains what constitutes a good steel for tool making and the processes involved in it's production.*

It appears to be generally true that plain carbon steels seem to give the best edge for wood cutting hand tools.

For the present purpose a brief explanation of the metallographic changes taking place during the hardening of plain carbon tool steel might be helpful. While the "background" structure in the steel as it undergoes the various changes during hardening consists of a mass of crystals, each differently orientated, it is more correct to speak of them as grains because of their irregular shape due to impingement. The usual mental picture of crystals is one of regular mirror-like facets as seen in geological exhibits.

The changes that take place when tool steel is hardened depend on the fact that iron has two different crystal forms with greatly differing abilities to hold carbon dissolved in (solid) solution, at high and low temperatures. Both of these crystal types exist as close assemblies of grains. On heating or cooling slowly through a critical temperature, at about 730°C, the crystal structure changes and one set of grains is replaced by a new set as the (phase) change takes place.

On heating, the grain size after the change is small but if the temperature is taken higher some grains grow absorbing others and the grain size is enlarges. With longer times held at these high temperatures, the grain size increases. On cooling this size is preserved until on passing through the "critical temperature" new grains of the crystal structure stable at low temperatures form replacing those previously there. The new grains will be smaller than those they replace but not as small as they would be had the higher temperature grain size been small. One limits heating above the critical temperature to about 100°C when hardening.

Hammering (forging) above the critical temperature (and one can go well above to make it easier) results in a small grain size if the hammering is continued while cooling to just above the critical temperature. The working causes continuous recrystalisation so that grain growth does not occur at the higher temperatures unless the hammering stops.

The crystal structure stable at high temperatures can dissolve most of the carbon present in high carbon tool steels say about 50°C above the critical temperature. If the steel is cooled slowly, the carbon comes out of solution because the stable low temperature

crystal structure can hold almost no carbon in solution. It does not come out of solution as carbon but combined with some of the iron as a compound called cementite. At ordinary rates of cooling the local dynamics of the change result in the microstructure called pearlite which is a fine "finger print" like mixture of iron with almost no carbon in solution and cementite which has all the carbon.

On very fast cooling. as in water or brine quenching, from the high temperature stable condition with all the carbon in solid solution. there is no time for the relatively slow separation of the cementite to form pearlite. Instead. because the change in crystal structure of the iron cannot be prevented. the carbon is forced to remain in solution in the low temperature stable crystal structure. This causes a great increase in hardness due to the distortion produced. The enormous stresses created now make the steel brittle and if left in this state cracking can occur (or the piece can shatter).

The microstructure (we cannot really talk of grains now) will be coarse and therefore more brittle, if the grain size in the high temperature was large, and fine if it was small. Hence the need to prevent heating to too high temperatures before quenching.

The quenched state is not stable and as correctly emphasised, is brittle. To remove the brittleness the steel has to be tempered after quenching. This allows the carbon to come out of solution as a fine dispersion of cementite in newly recrystallised fine grains of ferrite. His happens at temperatures above that of boiling water. The higher the tempering temperature. the coarser the dispersion and the larger the ferrite grain size becomes. There is only a very slow change on holding for long times at the tempering temperatures. The hardness decreases and the toughness increases as the tempering temperature is raised. The lowest practical tempering temperature is 230°C and the highest 650°C.

It is important to temper very soon after quenching to relieve the enormous internal stresses. It is also important to quench the article immediately after tempering to prevent impurities segregating to the grain boundaries of the ferrite which gives rise to temper brittleness. Heating for hardening should be done quickly to the lowest desirable temperature. usually about 850°C, and held for the minimum time needed to achieve uniform heat distribution and solution of the cementite (about 1 h per inch of section) and preferably surrounded by charcoal to minimise loss of carbon from the surface layers.

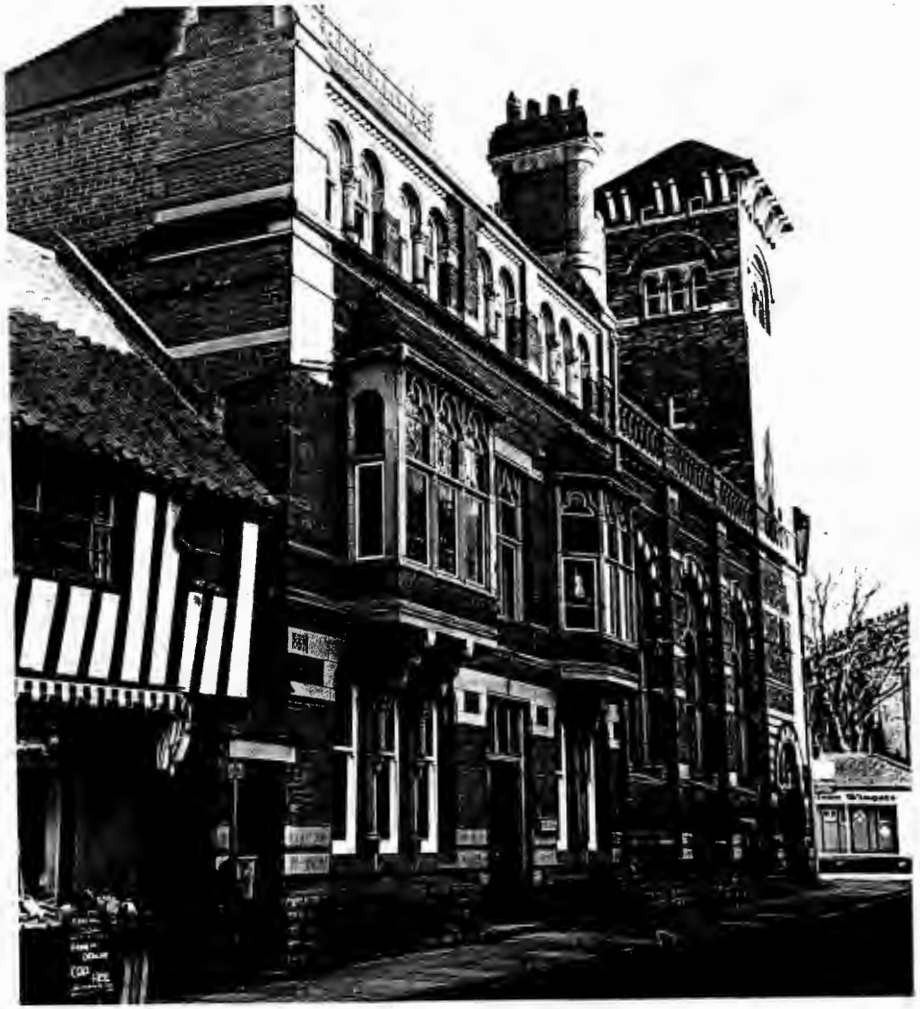
Tools should be quenched held vertically to minimise distortion or warping and agitated to break up the gas film that forms on the surface which acts as an insulating layer to slow the quench.

Water or brine at room temperature are suitable quenching media. Brine is a little faster.Tempering at low temperatures can be done in an oven. If some form of temperature monitoring is available an oil or sand bath can be set up and heated externally. Wood working chisels, gouges and plane irons tempered at 230°C (say 1/2 h) retain maximum hardness (65Rc) and have almost no "wire edge". This temperature gives a light straw colour on a clean surface. Higher temperatures are needed for greater toughness.

Many of the names given to the different states have historical connections. The high temperature state is called "austenite" after an English metallurgist William Roberts-Austen. The low temperature stable state of "ferrite" has a Latin root. The name "cementite" comes from the practice of cementation when carbon was added to iron bars by heating in contact with charcoal. The name "pearlite" comes from the play of light on the structure that resembles "mother of pearl".

The freshly quenched state is called "martensite" after Adolf Martens, a German metallographer.

The final state after tempering is simply known as "tempered martensite" although in earlier times there was a proliferation of names which resulted in confusion between tempered structures and structures of similar hardness produced by continuous cooling but of quite different microstructure and mode of formation.



Newark School of Violin Making Celebrates its 25th Anniversary

Britain's best known school of Violin Making celebrates its 25th. anniversary this year. To mark this we have invited three people connected in different ways with the school to give their views on it's past present and future.

Malcolm Hunt *manages the School of Technology and Crafts at Newark and Sherwood college.He outlines a brief history of the violin making course, it's content and the plans for the future.*

Newark and Sherwood College's School of Violin Making has been training people in violin making for twenty-five years. Maurice Bouette, the first course director of the school, stated with a single group of twelve students in September 1972. The aim of the course was, and indeed still is, to teach violin making to the highest professional level attainable in the duration of the course. A mark of the school's success in this goal is apparent in the success of both students and ex-students in international competition.

In 1976 a second year student, Ian Clarke, won silver at the Cremona trienniale and Wilfred Saunders, a part-time member of staff, also took silver at the same competition. The first gold was achieved by Roger Hargrave for his cello in 1979. These awards were the first of many to be won by students and graduates of the violin School in its 25 year history.

The school moved to its current home, the Italianate Gothic style, former National Westminster Bank, in 1978, and was marked by an official opening by Yehudi Menuhin.

Four years later in 1982 Prince Charles honoured the school when he visited as part of the College's Centenary celebrations. The Violin School marked this occasion by presenting Charles with a cello made by Glen Collins assisted by other School staff and students.

In August of that same year Maurice Bouette retired as violin course director and was succeeded by Bob Payn, a teacher at the school since 1977. Bob later (in 1991) also became the Head of the Woodwind and Piano courses, posts he held until his retirement from full-time teaching in May 1996. The Instrument Technology Courses are now part of the School ofTechnology and Crafts, Kerry Boylan is the tutor for violin courses.

The majority of the teaching is still undertaken by professional makers, who are engaged in their own businesses of violin making and repair. Current staff include Paul Gosling, Paul Harrild, Pat Jowett, Bharat Khandekar, Bob Payn, and Viola Ziessow. The school staff are also supported by guest speakers who this year included John Dilworth, Paul Bowers, Hamilton Caswell and Charles Beare.

In the early years, students would make seven or eight instruments in two years. Today's students undertake a three year programme of study. In the first year students now make two violins in college. A further violin must be constructed in their own time, to re-inforce their training. In the second year approximately one fifth of the time is spent fitting up and varnishing. The majority of the year being spent learning repair techniques. Towards the end of the second year, students begin making a viola, this is completed at the beginning of the final year. The majority of the time remaining in the

third year is devoted to making a cello or a pre-test violin. During the last term of the course two hundred hours are devoted to the final test instrument. The whole of this test is undertaken in School. Arrangements are also made for students to visit the Ashmolean Museum and the Royal Academy in order to study instruments.

At the end of the third year it has been traditional for students of the Northern School of Music or the Royal Academy to both play and constructively criticise the third year student instruments.

A student's progress is monitored throughout the course against assessment standards which are externally verified for City & Guilds of London by Mark Robinson. Mark is also a Violin Maker and therefore provides another valuable link to the requirements of the current trade. A separate Violin School Diploma is awarded at Distinction, Merit or Pass grades based on a student's performance in the final examination of the test instruments and an overall course assessment. For many years the external verifier for this diploma has been Charles Beare.

Twenty-five years ago entry to the course was only possible if a prospective student was successful in an entry test which included woodworking skills and drawing. This interview process disappeared when the Foundation Course was introduced. However, the School is re-introducing the test for students wishing to start the violin making and repair programme without the foundation year for the September 1988 intake.

The number of students has increased from thirty-six students in 1978, the majority of whom were British, to one-hundred students today from all over the world. The increase in student numbers has however put strains on the School's resources. In September 1996 a planned replacement of benches and tools marked the start of an improvement programme. It is hoped that over the next two years the facilities will be doubled to increase the space available for the current volume of students and permit the classical guitar courses to be housed in the same building. This will allow us to focus all our facilities to the advantage of both groups of students. A new resource room, varnishing room and a student common room are also planned.

Without the help of its first Honorary Advisors Yehudi Menuhin, Charles Beare and Desmond Hill, the School would not have been celebrating its Silver Jubilee this year. It is our intention to continue strengthening and expanding our partnerships with organisations involved in the craft of violin making and repair.

Newark School of Violinmaking Diploma Show 1997

***Paul Bowers**, himself a graduate of the college and an ex-member of staff, reports on this years open day and exhibition.*

The 1997 exhibition of third (final) year students work took place on Saturday 28th. June in the College main hall.

This annual even is not only a showcase for the School, but provides a unique opportunity to compare and contrast all the instruments completed during the students three years of study.

The work of thirteen violinmaking students was represented this year along with guitars from the more recently established guitar making course. A high proportion of students chose to construct a 'cello during their final year, and this year was no exception, with eight 'cellos completing quartets. The overall standard of work was excellent, the instruments not only displaying good technique and workmanship, but well observed and understood stylistic nuances. Several instruments showed a maturity one would not normally expect to see in student work! Particularly pleasing to see was the improvement in varnish and overall finish of instruments compared with previous years. (I have to admit to having reservations however with the few reproduction style finishes, particularly in this stage in a student's career). Great credit is due therefore to both students and tutors operating in difficult circumstances. Perhaps the highlight of the day was the playing of the student instruments by the Cat quartet which took place during the evening. This also provided a unique opportunity to compare instruments played by excellent musicians, a difficult and confusing task, but entered into with great accommodation, enthusiasm and humour by the quartet. If nothing else, it reminded us that we work in partnership with musicians and serve music.

The standard of violinmaking in Britain is certainly assured given the talent and enthusiasm displayed in the show this year. How sustainable that will ultimately be, with thirty-six students leaving each year from now on is debatable. I find it depressing that the institutional demands of Newark and Sherwood College conflict with the

needs of the Violinmaking School, its students and staff - disabling rather than enabling. I care too much for our craft and its practitioners past present and future to think otherwise.

A students view

After working in joinery and furniture for ten years ***Anthony Carr*** *enrolled at the Newark School of Violin making in September 1994. He graduated in June 1997*

My intention was to complete the course, find employment and eventually set up on my own. Unfortunately, due to government cut-backs I could not obtain a grant. So the biggest hurdle I had to climb was financing my living and the expenditure of the course, for tools and for wood for the instruments. This meant I had to take time out from studies to earn money to help towards the cost. One of my jobs as a milkman was useful in providing me with a good

knowledge of Newark and environs. The course began with eighteen students of whom twelve graduated. Four were British and the remainder from European Countries. They were a good crowd and we shared many laughs and traumas together.

Over the three year our main teachers were Paul Bowers, Rowan Armour Brown, Pat Jowett and Paul Harrild. All had different approachs, giving us a good general knowledge of making and repair. They mixed well with the students in and out of class, and we enjoyed the odd drink together. This tended to colour over the problems of the school itself which are:- increasing student numbers, less teaching hours and limited equipment. Next summer thirty-six students graduate and even though numbers were supposed to be reduced with this year's intake, I understand that this has not happened. The problem being pressure from the main College for the Violin School to finance itself - in other words, bums on seats.

Sadly during our second year after many years of teaching Rowan passed away, she was and will be duly missed. Paul Bowers left after fifteen years of teaching. Since then a new phenomenon has become apparent; new teachers that come seem to use the School as a fill-in between jobs. Admittedly, ever increasing number of students means ever increasing pressure for teachers and this may be the underlying cause.

Due to the saturation of the violin job market less than half the students of my class have found employment so far. One of my biggest fears has happened, I've had to fall back on my former trade, but hopefully only temporarily.

In spite of the problems, instruments of good quality are still being turned out and, personally, I feel the school still ranks amongst the best in the world and has a lot to offer to any aspiring maker. I very much enjoyed my stay in Newark and feel that I gained a great knowledge of the violin making world.

BVMA Makers day 1997

The British Violin Making Association will hold it's first 'Makers day' on Sunday 19th. September 1997. The event, which will be an annual occurrence, will be held in the concert hall at the Guildhall School of Music and Drama. Forty makers of violin family instruments, bowmakers, early strings and electric instruments will be showing.

The event opens at 10.15am. and will close at 4.15pm.

Admission is free.

WILLIAM ROBINSON VIOLIN MAKER

Among professional violin makers working in Britain in the first half of this century quite a large number were, surprisingly, self taught. ***Dennis Plowright*** *delves into the history of one of these men, William Robinson. Therein he finds finds a story, elements of which would not be out of place in Hardy or Trollope.*

William Robinson was born in 1873 into a poor family living at Avebury, Wiltshire. He left school at an early age and was put to work to mind sheep on the Downs and while doing this, he amused himself in carving small toys from wood; these he sold to the village children to help the family finances and to earn pocket money. At the age of fourteen, he was apprenticed to the local saddler in nearby Marlborough (probably Chandlers) and continued working as a saddler for ten years after his apprenticeship had finished. Near to the turn of the century he left Wiltshire for London and entered employment in the Woolwich Arsenal as a leather worker, buying a house in Rochdale Road. Abbey Wood so as to be near his work. Here he started to make violins as a hobby.

In violin making he received no formal education, he was entirely self taught. His first instruments date from 1908 and he took some of them to Dykes & Sons for their criticism. They were encouraging but pointed out aspects of his work which should be improved. This lack of formal training shows in his work which does not lack finish yet has a certain lack of sharpness and certainty about it which is absent in the best apprentice trained makers.

After the end of Word War I Robinson decided to leave his employment at the arsenal and take up making and repairing violins full-time. From this period the earliest I have seen is No.17 dated 1919 but No. 39 is dated 1920 so that he was evidently quite busy as a maker. Many of his early violins were styled after Guarnerius del Gesu. The majority of his violins are numbered and dated with WR added in ink at the bottom right of the label, but a few were not numbered but given names e.g.'Victory' (1919) and 'Jubilee' (1935). The violas and 'cellos I have seen were not numbered. In all he made 420 violins, 40 violas and 15 'cellos: his last violin is dated 1957.

In 1923 he was successful in winning the Cobbett prize for the best toned modern British violin (winners in other years were Glenister, Richardson and Vincent and it is a curious fact that, so far as I am aware, all four winners were self taught in violin making). From this success his instruments, especially violins, gained great popularity and they were much in demand both at home and abroad: some famous soloists played upon them publicly. Between 1923 and the commencement of World War II he made about 250 violins as well as some violas and 'cellos.

The East End of London suffered greatly during the 'Blitz' and Robinson decided to move out to Wiltshire. He took a small house in Devizes at the lower end of New Park Street but there was no room for a workshop there. Geoff Oliver who owned the local music shop 'Handel House' let Robinson have a small workshop there; the music shop has long since gone but the workshop forms part of a restaurant known as 'Handel's Kitchen'. During his stay in Devizes, Robinson made a number of instruments but not so productively as hitherto (No. 353 is dated 1939 and No. 387 is dated 1946). These all bear the usual printed label giving Plumstead as the place of manufacture. Asked why he did not change the place name to Devizes he said that it had taken a long-time for him to become known and he did not wish to risk confusing people who might think that it was the label of another maker of the same name. After the end of the War he returned to Rochdale Road where he worked until 1957 and passed away in 1964.

Of his two sons Cedric and Stanley only the latter showed any interest in violins. Stanley trained with a full apprenticeship as an ecclesiastical wood carver and after the War was making reproduction carvings in the style of Grinling Gibbons in bombed London churches. He made about thirty violins, I think that he made no violas and certainly no 'cellos. Some of the violins were made in collaboration with William and labelled with their joint names while some are labelled individually. He helped William by carving a few scrolls at which he was adept. On the whole his work is rather more carefully finished than his father's. Stanley moved to Devizes in the late 1950's and worked in the large joinery shop of W E Chivers & Sons where he was in demand whenever there was any wood carving to be done. He made no violins while in Devizes and died suddenly at work in 1968.

HIS WORK

William Robinson's work is full of character. The details are, for the most part, finished carefully enough but not so far as to eliminate personal touches. The early violins were frequently made with the style of Guarnerius del Gesu in mind sometimes just under 14" and

never over 14 1/8". Often the backs are made from a single piece of wood and I have never come across an instrument made by William Robinson in which plain timber has been used, often the hardwood is very handsome. Some of his wood came from Dyke's and this, it was said had come from Craske's stock: Certainly the few pieces which I had after Robinson's death were brown with age. The edges of his violins are not over thick and well rounded, the corners are not left 'square' but just slightly rounded off. Frequently the button, which is on the large side, is surrounded with a narrow ebony edging. The backs are not pinned on the examples I have seen. The tables are often of widish grained wood but whether wide or medium grained, the reed is made to stand out: some tables have a rather 'washboard' effect so prominent is the grain and this is not to everyone's taste.

At the height of his fame he used a personal model in which he has combined points from classical masters: these violins measure 14 1/8" or a shade less, he never made violins over long in the body. The soundholes are set fairly straight and the lower wings are sometimes slightly hollowed. The heads are well finished, often showing cutting marks from the gouges: sometimes the necks are left very 'chunky'. Stanley helped his father with some of the heads and at other times, when William was very busy, part finished heads were worked up.

The violas are in several sizes. Most of the ones I have seen are around 15 3/4" but I have also seen one of 16 1/8" (made in Devizes) and 16 1/2": Tertis model violas were very popular towards the end of his career but I have not known him to make any on this pattern. The violas are just like the violins in style. The 'cellos are nicely made and from handsome woods but all of the ones I have seen were very heavy and far too full of wood to sound well which is a great pity because otherwise they are so nice.

The varnish which Robinson used was always an oil one and he bought this in from various sources. For the most part he favoured shades of golden - brown (sometimes now a bit yellowish) and red-brown. I have never seen an instrument where he varnished to simulate ageing nor one where the varnish has crackled, in this respect he was more fortunate than many of his contemporaries.

What position does William Robinson hold as a maker in the modern English school? In his lifetime he enjoyed considerable success but towards the end of his career and after his death, his instruments, like many of his contemporaries, were not much sought after and could be bought quite cheaply. This does not make him a failure as a violin maker -English makers of this period were undervalued in the same way as Italian craftsmen were so often over-rated. In his day, his violins sold for their good tone and performance and were sought after on this account: these qualities will not diminish with age. Now it is pleasant to find that the work of this interesting craftsman is becoming more valued.

Early Music Festival in Boston USA - A Feast !

Ute Brinkmann *visited this years Boston Early Music Festival and Exhibition. Never considered to be very high on British makers exhibition list, she says come on over and try it!*

In June 1997 a feast took place for connoisseurs of Early Music: The ninth biennial Boston Early Music Festival & Exhibition (BEMF&E) designated "France & Italy: A Tale of Two Countries" the most ambitious and sensational celebration since its inception in 1981.

Music

Performances by the world's leading early music ensembles took place throughout the week in various locations in the city e.g. "*The Parley of Instruments*" from Great Britain met "*the King's Noyse*" from Boston/USA for a performance of French Orchestral Music from Beaujoyeux to Lully or "*Pour le coucher du roi*" (Late Night Chamber Music at the French court). For Louis XVI, going to bed was turned into a ceremony. He needed his musicians to put him to sleep. Therefore performance in Boston started at an appropriate time: 11pm.

The centerpiece of this year's festival was the opera *L'Orfeo by Luigi Rossi* (circa 1597-1653), with five performance by the *Drottingholm Court Theater of Stockholm, Sweden*. In 1647 Cardinal Mazarin invited 18 of Italy's finest singers to collaborate with the 24 violins of the French King for a performance of this opera, and it became the most important musical and cultural event of the mid-seventeenth century.

Concurrent events took place throughout the week: educational outreach, family programs, gala opening night reception, scholarly symposia, recording seminars, dance workshop, trade topics, forum for instrument makers and exhibitors, performance master classes, pre-opera lectures, roundtable discussions and much more.

Exhibition

The focal point of the 1997 festival was the world-acclaimed BEMF Exhibition. About 100 craftspeople from North and South America, Europe, Asia and Australia came to exhibit and sell in two different locations: the conference centre of the Plaza Hotel and adjacent to it the castle, a big air-conditioned hall in downtown Boston.

Makers of Mediaeval, Renaissance, Baroque, Classical and early Romantic instruments as well as dealers in rare books, prints, manuscripts, record companies, publishers and accessory manufacturers gathered in this spacious, impressive hall.

The 4th floor in the Plaza Hotel was dominated by harpsichords, but one was able to find organisations like the Early Music America and the Viola da Gamba Society of America. Bowmakers as well as instrument makers and dealers of high quality baroque violins/violas

found their way into the elegant setting of this conference centre.
Visitors paid a fee ($5 for a day,$20 for the week) for admission to the exhibitions, symposia and other events.
Thousands of enthusiastic professionals and amateur musicians, students, teachers, representatives of all aspects of the early music industry, musicologists, scholars, collectors and makers and the general public came to see what's happening in the world of early music.
There were hardly any old instruments to see, the exhibition was purely commercial and dealt with new instruments only. In order to see original instruments one was advised to visit the local museum. The quality of the bowed instruments varied. There were gambas with carved human heads and some with open scrolls. Most were pleasing to look at, but the workmanship on some occasions lacked finesse.
The exhibition rooms in the conference centre came in different sizes and were equipped according to the needs of the exhibitor (tables, stages and chairs were supplied) the advantage being that doors could be closed for privacy, making these rooms ideal for trying out instruments.The hall in the Castle was tastefully divided into booths, tables (with curtains) and chairs being provided. Light meals and coffee were served in the snack bar in the hall. Besides the BEMF year book there was plenty of information sent out for the exhibitors well in advance. There were a lot of first time exhibitors who dared travelling great distances to be part of the festival. Costs were an important factor, the organisation trying to help where it was possible, with housing assistance, special air fares, discounts on advertising and concert/opera tickets. Booths and rooms could be shared and many people took advantage of this.
The cost for a booth in the castle was $420, an exhibition room in the hotel was $720, $770, or $820, depending on size (first time exhibitors paid 10% less).
The festival in Boston was an event well worth while visiting. It was a pleasure to see how well things were done, the broad range of what is involved in Early Music. There was an excitement about whom one would meet, and what's new and different out there.
The Boston Early Music Festival is 'the' event in the States for lovers of Early Music but, strangely, not all of the spaces were filled in both the conference centre and the Castle. I can only hope that more people from overseas will be encouraged to consider exhibiting in a trade show in the new World. Come on over in 1999!

(Boston Early Music Festival and Exhibition, June 7-13, 1999. The theme: Music of the Mediterranean.)

String Technology

In issue 8 ***Michael Hill*** *reported on the Christophe Landon exhibition in New York. As part of the exhibition* ***Norman Pickering****, of D'Addario strings, delivered a lecture on string technology. Here is a summary of that talk written by Michael Hill. (I have to admit that the programme notes for this lecture did not whet my appetite, but I was to be pleasantly surprised - M.Hill)*

Since strings have been made for hundreds of years it's a bit surprising that it is only in the last couple of decades that some of the details of how they work have come to light. This was due to the advent of the high speed computer. We still equip bows with a combination of natural horse hair and larch tree resin. Many people believe that the horse hair works because it has a rough and scaly surface that grabs the string to make it move. This is not the case. Try to play a violin with brand new clean hair and brand new strings. Hair by itself does not have enough roughness to excite the strings (under a magnifying glass it appears as a smooth and shiny material.

Bow pressure

A popular misconception is that by applying more bow pressure you will produce a louder sound. If the distance from the bridge is absolutely constant and the velocity is constant, with more bow pressure all that is produced is a rougher and flatter tone that sounds harsh causing the pitch to lower. With a sound meter a very similar db reading will register with very different bowing pressure. The bow pressure is very critical and very hard to control. Bowing action works not because of the roughness of the hair but because of the adhesiveness of the rosin.

Rosin

The protein or collagen in the horse hair responds to the rosin particles in a similar way as iron filings to a magnet. It's a static charge that happens to organic acid molecules of rosin. If the rosin is compounded properly (meaning it has the correct amount of plasticisers) the rosin will break up into tiny particles covering the hair completely with little chunks of rosin. Sometimes when you rub rosin onto a bow chunks of rosin fly off all over the violin - this is because the chunks are too large to get trapped between the hair and the string with the bowing action. Most players put too much rosin on their bow causing a fine dust to form on the violin. Only the trapped rosin will actually do anything.

When you draw the bow, in a matter of milliseconds, the rosin will warm up to the sticky point. It will then grab the string pulling it out of line, but there is a limit to the rosins adhesion which is why it works so well. The rosin slips causing the string to rebound and catch again. this cycle repeats itself many times a second according to the frequency of the string causing a 'bond-brokenbond-bond'. This is what keeps the tone alive.

Temperature

Establishing the effect caused by temperature is a critical thing with all bowing. All that is learned from bow velocity, distance from the bridge and bow pressure becomes nothing more than an exercise in maintaining the right temperature at the point where the rosin is sticky enough to pull the string. Too little pressure or a too rapid bowing will cause the bow to grab the string, not permitting it to release properly, this will flatten the pitch. Instead of the normal frequency for that string being produced, the string is being held a fraction longer. With each cycle being a little slower the pitch gets flatter. As you get nearer the bridge the string gets stiffer both laterally and vertically so you have to press harder with the bow and probably slow the velocity down a bit, this means that you need a stickier bond between the bowhair and the string.

String Rotation

When you bow the surface of a string you are not bowing at it's centre of mass. In addition to moving the string sideways you are also rotating it. A flat slack string is almost unplayable because when the rotary motion goes down to the top saddle and back again you don't know if the string is rotating with you or against you. Each stroke becomes rather problematic. This is the reason for the development of the wire E and the silver D string. The diameter of the wire E has been reduced by 1/7 of the old gut E and the D string wound with silver has half the diameter of the aluminium. The development of strings has come a long way in the last 50 years aided by sophisticated computer science.

The Treatment of Objects Affected by Pest Attack (The "Thermo Lignum R" Process).

Michael Barrington

The following article first appeared in Conservation News, the magazine of the United Kingdom Institute of Conservators. The use of this process on musical instruments may not be viable but the basic principle behind the process is worthy of mention and may have future use in a more workshop based adaptation.

The process has it's origins in Germany where it was invented by Herr Werner von Rothberg and has recently been introduced into this country by Thermo Lignum (UK) Ltd. The most significant benefit of the Thermo Lignum process is that it is environmentally or at least people friendly; it does not involve the use of chemicals or gas. It is a development of a treatment for roof timbers used in Northern Europe which apparently reduces the risk of infestation to below that achieved by other fumigation processes. The Thermo Lignum process is based on the simple fact that a temperature of 52 deg. C kills insects. The larvae of the insects are denatured through distortion of their protein and die inside the material they populate.

Briefly the process involves:-

1. The determination of moisture content of an object to be treated with the use of a protimeter type moisture meter.
2. The placing of the object in a chamber together with any other objects of moisture content within a 3% bracket.
3. Raising the temperature of the air surrounding the object to 52 deg. C (the temperature at the centre of the object being some 4-6 deg. C lower) and maintaining the temperature for 30-60 minutes. The treatment time will vary according to the composition of the objects and the volume of material to be treated.
4. Controlling the relative humidity in the chamber throughout the treatment time to keep the moisture content of the object constant. This is achieved automatically by an appropriately programmed computer.
5. Gradually lowering the air temperature in the chamber to ambient.

Different woods

The majority of Thermo Lignum's research has been directed at wood. The relationships between air RH, temperature and the moisture content of the wood was determined through tests on Sitka Spruce (Picea Sitchensis) of weight 27 lbs/cu ft. Specific Gravity (SG) 0.44. It appears that through further research these relationships are representative of the seasoned woods commonly used in furniture e.g. Scots Pine 26lbs, SG 0.43, Lime 35-38lbs, SG 0.56-0.62, Walnut (European) 40-60lb, SG 0.64-0.74, and Oak 45-52lbs, Sg 0.72-0.83. Surprisingly there are no figures for beech. It is questionable whether deteriorated samples of these woods (rotted or waterlogged) would react similarly. The process has been

tested on veneered, inlaid, painted and varnished furniture without adverse effects. There is apparently no deterioration in animal glues.

In the absence of specific tests we are sceptical as to whether the same encouraging results would be obtained from the treatment of japanned, lacquered and gilded furniture and also furniture containing widely differing materials such as boullework (tortoiseshell and metal) and leather. In respect of metals used in furniture decoration there is in our minds doubt as to whether glue lines might be adversely affected because of difference in coefficients and expansion. Such effects might well not be apparent instantly but rather more likely over a period of time as objects adjust after their treatment. Only experience will tell and tests on objects of composite construction are urgently needed. There is also concern about the effect on materials with a plasticity threshold below 52 deg.C such as waxes used in conservation and restoration work.

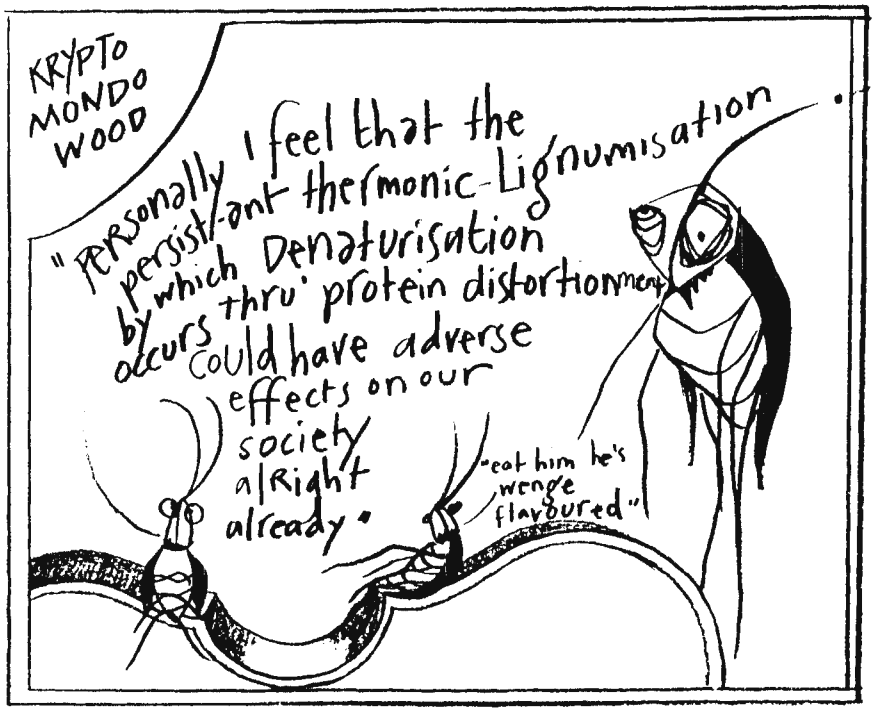
Thermo Lignum has also tested the process on other organic materials such as paper, textiles and leather but we have not yet seen any detailed results. The problem of maintaining moisture levels in thin organics such as textiles and paintings is more complex because of the faster exchange of moisture between the object and the air which results from higher surface to mass ratios than found in furniture. There is also some concern that because degraded leathers have a collagen

shrinkage temperature below 50deg.C they might shrink markedly. The change in proteins on which the process is based may raise problems in the treatment of not only leather but also natural history specimens and ethnographical material containing animal parts.

At present Thermo Lignum envisage items being transported to their premises for treatment or the leasing of equipment for site work; the latter being especially relevant to the treatment of collections. Costs have yet to be publicised.

An interesting future development being considered by Thermo Lignum is the inclusion of the options of oxygen reduced treatment (less than 1% Oxygen in Nitrogen) at 36deg. C and of 'freezing' as additional treatment available in the same chamber.

It seems that the Thermo Lignum process has considerable potential in the treatment of wood although, on present evidence, this may, so far as furniture is concerned, be limited to relatively straightforward items of homogenous timber construction. The treatment of furniture containing non-wood decorative materials needs considerably more evaluation.



The Violin Explained

Written by ***Prof. Sir James Beament*** *Published by Cambridge University Press. Reviewed by Alan Seago.*

The instrument maker and the physicist inhabit very different worlds. Whereas the study of acoustics is a science, bounded by theory and the laws of physics, the work of the violin maker is an art, the skills of which have been accumulated over centuries, and in which the only criterion of importance is whether the instrument sounds right. That being the case, the instrument maker who wants to understand a little more of the physical principles which affect sound production may open Kinsler and Frey's Fundamentals of Acoustics, and close it again with a shudder, put off by pages and pages of what seem to be impenetrable mathematics. Even with perseverance, the luthier may feel none the wiser, or that he or she has learned little that is of practical value in the workshop.

The bridging of this gap between theoretical physics and practical lutherie is one of the objectives of this book, and much of it is taken up with the role that physics has to play in the building of instruments. Beament makes the point that the sound of a violin is as much dependent on the player, as on the properties of the instrument itself; the idea that the qualities of a 'good' instrument are directly traceable to a set of measurable and unvarying physical quantities is one that is rightly given short shrift. However, although it is unlikely that we will see oscilloscopes and spectrum analysers taking their place alongside more traditional tools in the workshop, I think it is overstating the case to say that science has nothing of value to contribute to instrument making.

This cavil aside, this is a very informative and well written book. The author sets himself the task of explaining concepts like vibration and resonance without recourse to mathematics, and succeeds admirably; the occasional foray into mathematical and physical terminology is done almost apologetically, but, for the most part, would probably not alarm even the most non-mathematical of readers.

Starting with a brief explanation of the nature of sound and vibration, the reader is taken step by step through an account of string vibration, the functions of the bridge, soundpost and tailpiece, and of the violin body as a whole. Topics such as the bow and the bowing mechanism, the bridge ratio, and even the vexed and complicated question of what causes the wolf tone are described in a style which is both clear and accessible. Something which may be of particular interest to the reader is the discussion of the work of Saunders, and his comparative measurements of the responses of 'good' and 'poor violins. (I noted a small slip on page 85 about the air resonance - it

falls rather than rises when one f-hole is closed).

Since the pioneering work of Heimholtz, it has been increasingly understood that the perception of sound is as much to do with cognition and the structural properties of the auditory mechanism as with measurable physical qualities, and it is with this in mind that the author devotes two whole chapters of the book to hearing, with particular reference to the bowed string. The rationale behind this is clear; the final arbiter of the quality of an instrument must, at the end of the day, be the ear. Beament considers the character of string tone across the playing range as being a function of the uneven loudness response of the ear; however, I think the less technically oriented reader without some moderate background in acoustical theory may find themselves struggling with the complexities of the inner ear and Fletcher-Munson curves.

Considering the number of myths current which put the perceived superiority of, say,

Stradivarius violins down to 'something in the varnish', the discussion of the function and importance of the glue and varnish is timely. The physics behind the adhesive qualities of glue are explained, followed by a consideration of the differences between synthetic and animal glues; similar comparisons are made of oil and spirit varnishes. Citing the work of investigators in the field, as well as his own experience, the idea that varnish affects the tone of the instrument is dismissed, along with several other commonly held beliefs which are taken to task in this book; in particular, notions like, for example, that tone improves with age, or that 'playing in' the instrument cracks the glue in the purfling, making the plate more flexible, are dismissed.

A very useful final chapter on purchase and maintenance is included.

Potential purchasers of a musical instrument seldom have very much in the way of guidelines on .what to look for; and as the author notes, once purchased, an instrument seldom comes with a manual. Here, the author provides practical tips on buying from dealers and makers, (as well as guidance on the possible pitfalls), and on what is involved should repair be necessary. In addition, consideration is given to left handed instruments and the purchasing of instruments for children.

I enjoyed reading this book, and learned much about the mechanisms of sound production in the violin which I would not have found in most books on musical acoustics. A list of further reading is included for anybody wanting to delve further into the subject; however, anybody engaged in violin making, as well as musicians (and acousticians!) will find this book of enormous interest. Full of valuable tips and advice, derived from a considerable wealth of practical experience, and written with a wry humour, this is a valuable and very accessible addition to the literature.

(Alan Seago is a lecturer in acoustics and Musical Instrument Technology at the London Guildhall University)

To Kill a Wolf

Marc Soubeyran's letter on wolf notes in the last issue of the newsletter elicited responses from three separate quarters, each with somewhat differing points to make.All three are published together here starting on an interesting and practical historical note from ***Michael Heale****.*

(I would refer readers to an article by Florian Leonhard in issue 6 (Winter 96/97) which though not directly related does have some similarities.Ed.)

MORE ON WOLF NOTES

It was with interest that I read the short piece "Wolf Notes" , by Marc Soubeyran in the last newsletter and I proffer the following thoughts:

Within a 'cello which I was recently working upon, the ticket reads:

LOUIS NOEBE
BAD-HOMBERG 1922
No. 1083

Also, branded upon the inside back is:

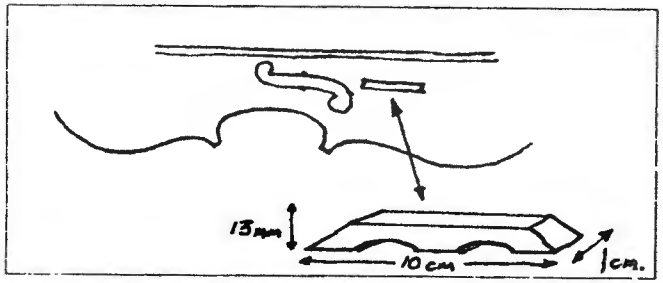
SYSTEM NOEBE
1922.

The workmanship is very good; very neat scroll, fine choice of wood etc. which gives the impression that Louis Noebe was not likely to fool about inventing a "system" unless it was of worth. The "System Noebe" consists of the addition of a type of sound-bar, placed below the bass side F hole, near the bass-bar and running parallel to it, thus (Fig A): It would appear that this was a way of eliminating the wolf as it is placed within the area where one commonly sets an internal wolf eliminator. This instrument had no wolf!

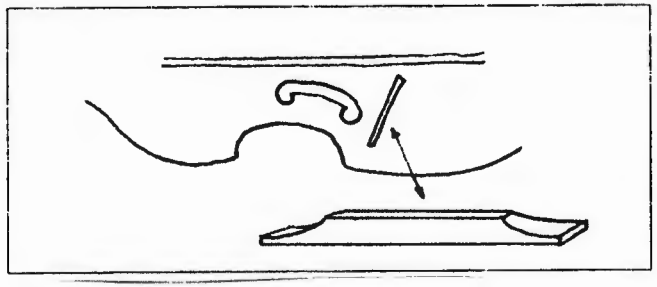
I have tried a small bar in viols and I am finding it of great value, i.e. it works! (Fig B)

Concerning the purpose of the bass-bar I am led to believe it has a two-fold purpose. To eliminate the wolf as much to support the belly.

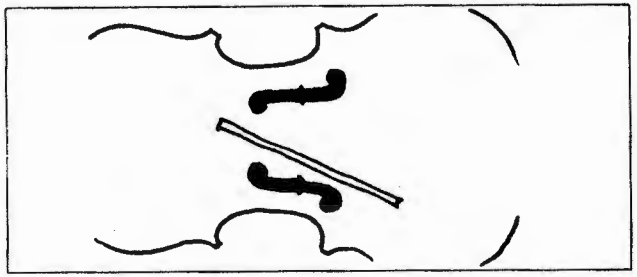
A



B



C



Some years ago, Drew Dipper brought my attention to a tapered sound-post within a 'cello; he put forward the suggestion that this could be to eliminate a possible oscillation within its length and to steady it, if steadying were needed. Could this also help in eliminating a wolf?

In renaissance bowed instruments the bass-bar is very often absent and if present, it acts as a supportive bar by being placed down the centre of the belly. This is also seen in all the instruments from the Alemannische school of violin making, circa 1670.[i] Some later makers in other places seem also to have regarded it in a dual role, as for example in the Colichon bass viol, made in Paris in 1691, where it takes a more acute diagonal line from that adopted most commonly. This also occurs within a tenor viola by Matthus Steiger of 1664[ii]. The diagonal line of the bass-bar here extends towards that part of the belly which seems most susceptible to generating a wolf. (Fig C).

Marc Subeyran suggests "setting the neck to a flatter angle"; if this means what I think it means then the nut will be above the level of the belly-edge to tailpiece-saddle, which would cause me to question the compatibility within commonly accepted geometric configuration.

Michael Heale
Guildford

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[i] (see Olga Adelmann *Die Alemannische Schule*, Berlin, 1990.) Incidentally, this I believe could be the school of making which greatly influenced the first violin/viol making in England. This evidence certainly being in evidence in the instruments of Jaye/Mears/Norman in the decorative knots of purfling. Also the vaulting of some early English instruments echoes that school of making.

[ii][ii] cited no. 35 in *Shapes of the Baroque*: William Monical 1989

The Physics of A Wolf

As Marc Soubeyran says, every instrument has a potential to wolf; in practice they are very rare on violins, occasional on violas and common on cellos. Some of the remedies he suggests work sometimes, most will reduce the wolf to a level which a good player will be able to control, but the best remedies do not interfere with the rest of the instrument and work every time. They are based on knowing exactly why a wolf happens.

A wolf note is not caused by air resonance; it does not correspond to air volume. The wolf pitch can be anywhere between D and F# on the same size cellos, and we have measured one at F# on a quarter-size instrument. A wolf is caused by the combined effect of a strong narrow resonance peak of the front, and insufficient damping in the spruce to absorb its energy. With uniform bowing at the wolf pitch, the vibration of the front builds up rapidly and removes so much energy from the *fundamental* of the string's vibration that the string switches to its octave mode (similar to that of the octave touch harmonic). This deprives the wolf resonance of energy. It dies rapidly, the bow regains control and the whole process repeats, at about five times a second.

Since one cannot increase the internal damping of the wood, the cure is to prevent the resonance from building up, preferably without compromising the normal operation of the instrument. Of the several recipes, the most inelegant is to find the point of maximum vibration of the front at the wolf resonance and stick a 50p coin there with blutak! The principle of reducing the energy available to the wolf is a better approach. Increasing the weight of the top of the bridge does that, but it reduces the energy of all notes, and their high frequencies more than their low ones - after all, that is what a mute does. Likewise soundpost adjustment alters the overall balance between all the higher and lower harmonics, and should be kept for modifying tone according to the taste of the customer. Thinner gut strings may help by reducing the total power of the instrument's vibration. But every packet of high tension steel strings comes with a free wolf and killing wolves is only one of many reasons for using gut or gut-imitating strings.

The ideal way to eliminate a wolf is to place a small rubber-lined brass sleeve on the tail of the bottom string between the bridge and tailpiece, and find a position along the tail where the wolf disappears. This occurs when the weight tunes the tailpiece system to resonate at the fundamental of wolf pitch. The tailpiece then removes energy from that frequency at the top of the bridge, before it can get to the offending resonance. It is ideal because it simply augments the normal function of the tailpiece which is to act as a universal mini-wolf eliminator; without it the behaviour of all instruments would be much more irregular. There is a detailed account in my book *The Violin Explained.*

All this raises a question on which I would welcome observations. About the only change with age which has been discovered, which might affect the behaviour of an instrument, is a decrease in the internal damping of the spruce. The change in damping may not be significant, but if it is, then in theory this should make an instrument more liable to wolf and more difficult to control. I heard a Peter Guarnerius last year which when powerfully played produced a resonance pitch of its own as well as those determined by the violinist. Do those members who set up instruments find, for example, that they have more problems finding suitable tailpieces and tail lengths for old ones than for new?

Prof. Sir James Beament. Cambridge

The Tail of the Wolf

I read with interest Marc Soubeyran's article "Wolf Notes" in the summer newsletter, and I appreciate that Marc's intention was to stimulate debate. I must take him to task on one basic point, however: that of string length. Moving the tail piece as he suggests will not alter the string tension in the slightest, once the strings are re-tuned to their original pitch. The swing length (the distance from nut to bridge) determines the tension for a given pitch and vice-versa, so that moving the bridge forward will reduce the string tension after re-tuning to original pitch. Whilst the length of the string behind the bridge will not affect the tension, it will of course alter the pitch of the 'sympathetic' strings between bridge and tailpiece, and this has been known to help with wolf notes.

In the case of cello wolf notes, I have found that the 'glue-on' type of eliminator suppresses the wolf very well if it is accurately placed, without shifting the pitch of the wolf.

Chris Johnson
Sileby
Leics.

PS I think what Marc and his family did to Pique-Bouffigue and Jean de Floret was shameful! (Joke)

Non-gritty Madder Pigment.

Re Ron Wilkinson's request (issue 8 of the newsletter) for a solution to his problem of gritty madder pigment: the answer, quite simply, is a ball-mill. Twenty years ago there was a "craze" for polishing pebbles collected at the beach and for this purpose, a machine was produced consisting of a plastic or aluminium drum which was rotated slowly on rollers driven by a small electric motor. Pebbles were placed in the drum along with water and various grades of carborundum powder; the drum was sealed and rotated continuously for a week at a time with each grade of abrasive powder, from coarse to very fine. Interest in such activities has waned and I suspect that there are now numbers of redundant pebble-polishing machines lying forgotten in cupboards, just waiting for violin makers who wish to grind pigment into varnish. Some of these machines are quite large and might be impractical for our purpose, but the smaller ones, with a drum about the size of a jam-jar are ideal. Pebble polishers are still available from lapidary shops, but the smallest and cheapest I could find here in Norfolk cost £40. So, following up an idea by John Mather and a prototype by Peter Love, I decided to make my own, using a small electric-fan motor, bits of Meccano and scraps of wood from the waste box: cost: £12!

Varnish and the dry pigment (I give mine an initial quick "whizz" in an old coffee grinder from the kitchen) are placed in a tightly lidded jam-jar together with three to five large glass marbles. Twenty - four hours or so of rotation will incorporate the pigment into the varnish in very fine suspension. The particle size will be very small and regular - much smaller and more regular, I believe, than can be achieved with the traditional muller and plate glass, and with a lot less effort. The result will be a completely non-gritty varnish of brilliant clarity, and with excellent brushing and drying properties. The pigment will stay in suspension quite long enough for a coat of varnish to be applied to an instrument without the need for further agitation: if the jar is left to stand for a while the pigment will of course, settle out. However a few minutes on the rollers will readily re-incorporate it!

Ron does not make it clear whether he was intending the "red-brown paste" for varnishing by the "glazing" method, or whether he was going to blend it into varnish for direct application. I should perhaps stress, therefore, that I have experience only of grinding madder pigment directly into varnish in the ball-mill. However, if a glazing paste of pigment and linseed oil is required, I see no reason why this could not be achieved by similar means.

Eric Mawbey
Norwich.

Saddle shrinkage?

A friend showed me the recent copy of the BVMA Assn. magazine which I read with interest. I expect you will probably get a number of comments on the same lines as mine in response to Dennis Plowright's letter about the movement of wood in instruments.Dennis made two points. One was about the deformation of the sound-post and the alteration that occurs in sound-post length. The second was about ebony saddles perhaps being "too good a fit" and cracks in the table being caused by the saddles expansion in length.

My view is rather different from Dennis' in that I would not expect very much longitudinal change in wood once it has been seasoned. I think both problems are caused by continuing movement, notably shrinkage, across the width of instruments. shrinkage continues to occur in wood over time no matter how long and well it has been seasoned. It is during initial drying that the majority of movement takes place. The reference book I have, not a wood technologist's handbook I have to admit, says that "longitudinal (shrinkage) is insignificant in practice, only 1% during the drying process, radial (along the medullary ray) 2% - 7% and tangential (along the annual rings) 6% - 15%". The wide range of these figures is because they cover all species of timber.If longitudinal shrinkage is only 1% during seasoning how much change can there be afterwards? In practice this is so small as to be ignored, even I suggest to the fit of a sound-post, crucial though this may be. There are two directions of movement which are material, radial i.e. across the width of the instrument and, to a lesser extent because of the small quantity of wood involved, tangential i.e. through the thickness of table and back. Surely cracks in the table at the extremities of the saddle are caused because the table has shrunk in width while the ebony saddle has maintained its length. A similar problem, particularly on much older instruments, (or those made with improperly seasoned wood!), is the phenomenon of the lower bout ribs becoming "too long". I would argue that this is again caused by the table shrinking in width and the ribs keeping their original length.

Regarding Dennis' remedy of making the saddle a little shorter then I can see no problem provided it is not made so short as to be loose and cause a buzz. Often after repairing these cracks I have to trim the length of the saddle before it will go back into its mortice. The changing fit of a sound-post can be affected by a number of things, continuing movement of the wood and distortion through un-relieved string tension over time plus an element of wear to inside surfaces where the sound-post bears being the most usual.

I hope these thoughts are of interest.
Yours sincerely,
Mark Moran
London W7

Steamed Seams

I must say that I was horrified by the article on steamed seams. In the first place if one makes a properly shot and rubbed joint, there is no need to cramp it, and a lot of the problems people have are due to excessive cramping. Secondly, applying what in effect is hot water to glue in a joint does not weaken the glue at all. And thirdly, if there is a gap which one closes by making the wood swell, one will be lucky if the wood doesn't shrink and pull the gap open before one has time to stud the seam. It would be quicker and better to 'start again' than to make proper studs on the joint. If one wants to open a joint on unvarnished wood, applying industrial spirit will weaken the glue without affecting the wood. I have written an article covering many such aspects of glue which will appear in the next issue of The Strad. It also is based on extracts from The Violin Explained, which has a large chapter on how glue works.
Prof. sir James Beament FRS.
Cambridge

Prele

I was interested to hear of violin makers use of Prele, or Horse tail, as an abrasive for smoothing wood. I work at the V&A Museum as Senior Gilding Conservator. I had read some time ago, in old manuals on gilding, about the use of Prele for smoothing gesso and bole, which are preparations for water gilding applied on wood. Only recently I tried using it myself, when obtained some in preparation for a talk I was giving on 'French gilding techniques, with comparisons to techniques mentioned in Wattin's 1773 book on The Arts of Painting Gilding and Varnishing'. In this book, Wattin describes the techniques and materials employed in these arts. I am only familiar with the gilding section, as I am not fluent in French, and have relied very much on working through the gilding section with various people who are more fluent, together, hopefully, our interpretation is fair.
In the gilding section as far as I am aware Wattin does not describe how to use Prele, as I assume it was then a common and familiar abrasive, but he describes what it was used for. Wattin's manual was reprinted in French in 1975. There are original editions at national Art Library at the V&A. There are also many earlier manuals on varnishing there, that your members may or may not be aware of.
I tried using Prele by the following method; first softening the dry stem by wrapping it in damp paper towel and then flattening the stem, and then using the flattened stem as one would use an abrasive paper, and it works very well indeed. At the moment the cost would be prohibitive for general use, though a friend tells me she has seen plenty of it growing wild, and in a recent gardening book it was described as a weed (Equisetum arvense prefers dry places while Equisetum telemateia prefers damp places). Apparently it is also an ancient plant, and so I wondered if it were a protected species.
I also purchased some 'whole cut pieces' of horsetail which seems to be the tops of the plant, as the larger stem sold in bundles is not present in the chopped pieces. These smaller pieces are too small to really spend time flattening them in the way described as with the stalks. I assumed these are used in a bundle in the hand? I would be pleased to have any further information on the uses and history of the plant.
Talking of abrasives I wonder if any of you had come across 'Micromesh'

abrasive cloths, originally sold to the aircraft industry? They come in very fine grades with lightly cushioned backing and are very flexible. I have found them very useful in my work for intricate smoothing where paper abrasives soon split. They are designed for smoothing and restoring transparency to clear acrylic, ('plexiglas' 'perspex'). There is a coarser range available for metals. These are not cheap, but can be washed and re-used.
I thought they might be of interest to you.
Christine Powell
V&A

Prele/horsetail
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ALADFI Conference

The French Association of Violin and Bow makers, the ALADFI is organising it's annual meeting and we would like to welcome all BVMA members to join us. The event will take place in Aix les Bains on the 5,6,7th of December 1997.
There will be a conference by Mr. Wolfgang Zunterer about violins of the German era, Mr. Klaus Grünke will talk about the German Bow Making School of Leipzig and. Berlin, and Mr. Lindeman will tell us all about his subtle way of fitting up an instrument. There will be an exhibition of major German instruments
The accomodation will cost FF1300. This includes two nights in a double bedroom, all meals, breakfasts and tea from Friday night to Sunday lunchtime, conferences and exhibition and for those who arrive in Lyon before 6pm. on Friday a bus transport from Lyon Satolaz to the hotel, and a bus transport for those who need one on Sunday afternoon to Lyon.
For more information about this weekend and registration call, write or fax. Martine Dubosson, Falknerstrasse 5, Ch-4001 BASEL. Phone: 0041 61 261 46 42. Phone or Fax: 0041 22 320 04 48. Closing date will be 30th. October.

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