FoMRHI Quarterly

BULLETIN 72
BULLETIN Supplement
Membership List Supplement

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FELLOWSHIP OF MAKERS AND RESEARCHERS OF HISTORICAL INSTRUMENTS
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FELLOWSHIP of MAKERS and RESEARCHERS of HISTORICAL INSTRUMENTS

Bulletin 72

DID YOU GET THE APRIL Q? The Manchester Post Office, bless their fumbling little fingers, sent me a packet containing a number of empty FoMRHI envelopes, and a number of loose Q 71s and Lists of Members, most of them torn and/or scrumpled, with a note saying that if anything was missing, I could write and tell them. Write and tell them I did, and I've sent them a bill for the repeated postage and the replacement Qs. Obviously I've sent replacements to all those whose empty envelopes I had, and to the two or three who've written to me saying that they got an empty envelope in the post. These went off after a delay because it took a while to get a stock of Qs from Eph. What I don't know is who else didn't get their Q. Hence the question with which I began. If you are lacking Q 71, let me know. I apologise for the delay in sending the replacements; that was our fault. I suggested to the Post Office that it would be nice to have an apology from them for the initial clumsiness that left our Qs strewn across their floor, but that they have not had the common courtesy or sense of good customer relations to send (they're a monopoly, so why should they bother with courtesy or good customer relations?) - they haven't paid the bill yet, either, but they'll get a copy of this paragraph with a few choice remarks about their efficiency. They really are the end. They get more and more expensive and less and less efficient. I'm just waiting for the day when a rival firm gets permission to start up. We do all our non-local phone calls on Mercury now - more efficient and much cheaper than British Telecomm. I look forward to something more efficient than the Post Office (and maybe cheaper).

LOST MEMBER: Michael Ransley's Q has come back from Lostwithiel in Cornwall, marked 'Gone Away'. Anyone know where to?

LIST OF MEMBERS: Apologies to Martyn Hodgson for omitting him.

MEMBERS' LIST SUPPLEMENT HEREWIT: There a few, very few, new German postcodes on this list. These were supposed to come into effect on 1st July, ie last week. Would German members please send us their new codes. The German post office has threatened to return any letters that bear the old codes, and I warn our German members that if their Qs are returned because they've not bothered to give us the new codes, I'm not going to bother to send them off again! Anyway, I shan't have the new codes to send them to, will I?

FURTHER TO: Bull.71 p.2: According to rule, I didn't comment on Bob Barclay's note in the last Bulletin, but I'd suggest that you take with a mild pinch of salt his remark that CIMCIM is open to any member with a professional interest in musical instruments. I know at least one highly reputable person whom that describes (he's a member of FoMRHI, too) who has been told that he isn't welcome at CIMCIM meetings. But if you're interested in being a member, do try it. I tried for years without success before I became Curator of the Bate, but if they're serious in what they say, then let's hope that they have become more open. Museums shouldn't be secretive nor curators a closed society. We curators need to work together with makers and researchers, and we can learn and benefit from each other.

ditto, p.3: I was gossiping with a visiting maker from Australia a couple of days ago, and he was saying that he uses bone where possible rather than any of the ivory substitutes. What he showed me looked very well and, more important, it felt better than any resin, and it was nearer the same weight as ivory, which is important for balance and also acoustically. There are problems of size, of course, but it does seem worth trying where possible.
Comm.1154: I have had a couple of letters saying that members' local bookshops can't get hold of Rob van Acht's *Checklist of technical drawings of Musical Instruments in public collections of the world*, published by Moeck. I hadn't put Moeck's address in because I thought anyone could find them (it's D-3100 Celle and they're in our List of Members) and anyway I'd rather assumed that one would get it through a music shop, who'd certainly know Moeck, rather than a bookshop who might not. Anyway, its number in Moeck's catalogue is 4057 and its ISBN number is 3-87549-054-1 UDC [whatever that is] 681.81. I went through the book the other day, and the Bate Collection has produced more wind instrument plans than any other museum in the world except The Hague Gemeente. I'm very pleased with that and we will do our best to keep it up. It's one of the most important services that we can provide and I'm proud to be a leader in providing it and more grateful than I can say to all those who draw plans for us.

Comm.1156: Laurence Picken has pointed out that the important thing about these bells is not merely that they are folded iron but that they are forged iron. He is, of course, absolutely right on this. If we were to construct a hierarchy, for example to fit them into a classification scheme, then the first figure would be forged bells followed by four (perhaps more, but these will suffice for the moment) subsections, one for those which are forged and then, in the forging, bent into shape (eg the Ghanaian atoke), the next for those which are hammer or otherwise welded together (eg the iron double bells from West and Central Africa), the third for those that I described as being made with a dome attached to a skirt, and the fourth those which are folded to shape (those with which my Comm was most concerned). Unfortunately the Hornbostel-Sachs classification system, which despite later attempts remains the only one that really works, is so designed, with the prime distinction between the bells that are resting and those that are suspended, that this hierarchy won't fit it! Of my four subsections above, the first is presumably resting (it usually rests in the hand); I'm not sure where the second fits, being on an integral handle which is held in the hand, but the bell neither rests nor is suspended; the other two usually being suspended.

Comm.1162: David Van Edwards has written to warn us that some of the hardeners used with epoxy resins are very carcinogenic and that therefore casting such comparatively large amounts of resin should be done in a fume cupboard with extraction, or at least out of doors.

A Comm herewith: You will remember the debate that we had some little while ago about ivory and whether it should be used. Simon Jenkins, the ex-editor of *The Times* and now one of its regular columnists, wrote on this matter a fortnight ago, putting better than I had some of the arguments in favour of legalising ivory. I could not resist writing and asking permission to reprint his article. This permission has very kindly been given and you are welcome, of course, to come back to the matter. It is quite clear, to me at least, from Jenkins's article, that we were taken for a ride back in '88 and '89 and that those who were campaigning in our pages for the ban on ivory were themselves being deluded by a militant lobby. While I respect the right of any creature to live, I am not a vegetarian, and I see no difference between farming cows and farming elephants, or for that matter whales if any way could be found to both treat and eventually kill them humanely. The slaughter of poaching cannot be tolerated, nor that of current methods of whaling, but that does not mean that we should not seek to find ways that would work and would be tolerable. What of course would be absolutely essential, if the ban on ivory were to be rescinded, is to be very careful on whence one's ivory comes, whether it comes from the corrupt areas, where a fiver secures a licence, or from the properly controlling areas, where every tusk sold ensures the survival of the elephant as a species.

WORKSHOPS AVAILABLE: I have received a letter from John Sinclair Willis of Conacher Organ builders which, he has said, we can include in the Q; you'll find it elsewhere here. He
says: So many people think that musical instrument making is a dying art. If by establishing a "Working Studio" promoting the skills of the makers and restorers of many different instruments from all periods I can do something to raise the awareness of the public I feel that I will have achieved something worthwhile. If, at the same time, I can help young makers to launch their careers I will be very happy.

DRAWINGS AVAILABLE: Jan Bouterse writes:

What I heard some months ago, and I don’t know if the FoMRHI-members will know, is that there is an interesting article about the 17 Baroque oboes of Michel Piguet, written by himself in the "Basler Jahrbuch für Historische Musikpraxis" (Nr. XII, 1988, pg. 81-107). Amadeus-Verlag. The name of the article: Die Oboe im 18 Jahrhundert (The Oboe in the 18th-Century). It is of course all in German language. But: what is very interesting, for only 9 Swiss francs you can order a set of drawings made by Mary Kirkpatrick of the 9 most interesting oboes of this collection: by H.Richters, I.H. Rottenburgh, Jer. Schlegel, T.Lot, Carl Sattler, C.Delusse, C.A. Grenser, J.F.Engelhard and Jo.Bradbury. Most instruments are in good to excellent condition. Annotations on the drawings are also in German language, but I don’t think that that is a problem for anybody who is interested in and has some knowledge of Baroque oboes.

How to order the set of drawings: write a letter to:
Schola Cantorum Basiliensis
Sekretariat der Forschungsabteilung
Leonhardstrasse 4
Ch 4051 Basel, Switzerland
and ask for "Beiheft zum Basler Jahrbuch für Historische Musikpraxis XII (1988)", with the drawings of 9 oboes by Mary Kirkpatrick.

REQUEST: Bruce Haynes asks:

May I ask you to include in your next FoMRHIQ Bulletin a request from me to readers for the location of any 17th- or 18th-century pitchpipes about which they may know?

There is, as far as I know, no written source that lists the locations of pitchpipes. By "pitchpipe" (tuyau de ton/diapason/corista a fiato), I mean an object like a small recorder fitted with a movable piston, on which a scale of about one octave is often marked.

BATE NEWS: I told you in the last Bulletin that I’d just produced our first Demi-Catalogue, covering the Keyboard Instruments. I have now produced a second one covering all (except a serpent and an ophicleide that have just arrived – see below) our Keyed and Fingerhole Brass Instruments. Each costs £3.00. More will follow as time permits. Also new is the 1993 edition of our Complete Checklist, which includes everything in the Collection including the new acquisitions below, and which has rather more information in it than previous editions though still sticking almost invariably to the one-line-per-instrument format which is essential if I’m to keep the price down to £2.00. If it got much bigger it would be beyond the scope of our photocopier and the price would then more than treble.
A major new acquisition is 22 instruments, originally from Reginald Morley-Pegge's collection and now restored to it by Katharine Jeans who had bought them from Morley many years ago. There is an unmarked recorder with a carved head, perhaps by J B Gahn, traverse by Camus, Delerablé, F G A Kirst, and Thomas Lot, flutes with 6 keys by Kirst and 8 keys by Goodlad, two third flutes by Goulding, 1-key and 4-key, a 1-key Bb flute by Bilton, and a 1-key piccolo by Goulding, a 10-key oboe by Martin Thibouville, a curved 12-key + brille cor anglais by Triébert, a 5-key Bb clarinet by Baumann of Paris, for which we already have the A joints, 6-key C clarinets by Cramer and Gerock, a 6-key Eb by Clementi and an 11-key Eb by Lesfèvre, two 6-key bassoons by N M Raingo and Sautermeister & Müller, a 3-key serpent by Milhouse and an 11-key C ophicleide by William Baker. Some of these are notable and highly important additions to the Collection; we are very grateful to Miss Jeans for the gift.

OTHER MUSEUM NEWS: The Museums and Galleries Commission has published a report on the problems and needs of music museums in Britain entitled Museums of Music by Kate Arnold Forster and Helene La Rue; it's available from Her Majesty's Stationery Office, and presumably bookshops, at £9.95 and the ISBN is 011 290 5161. They've not sent it for review but I mention it because it is worth reading. Some of it is silly; we are often reproached for not doing things that we would love to do if we had the staff, the time, and above all the money. On the other hand, many such things are worth saying because they might impel someone to give us the money! If we had the money we could employ the staff and find the time. There are some silly errors, too, it's a very long time since our R stood for Restorers, and that's not the only such error.

OTHER PUBLICATIONS: The Recorder Magazine has been bought by Peacock Press from Schott; their address is now Scout Bottom Farm, Mytholmroyd, Hebden Bridge HX7 5JS. They say that they will be giving away sample copies at their stand at the Horticultural Hall Early Instrument Exhibition.

L'Histoire de la Lutherie Parisienne du XVIIIe siècle à 1960 by Sylvette Milliot is being published in four volumes by Les Amis de la Musique, Avenue Reine Astrid 73, B-4900 Spa, Belgium. The first volume, on La Famille Chanot-Chardon, has been published at what seems the exorbitant price of 4,250 Belgian francs, or $129, or French francs 709. Plus postage etc of 360 FB, or $11.

The Editor of RiDiM/RCMI Newsletter suggests that you might be interested in it. These letters stand for Repertoire International d'Iconographie Musicale and Research Centre for Musical Iconography (address City University of New York, 33 West 42nd Street, New York, NY 10036). They've not sent review copies, but my latest copies (Spring 1991, Fall 1991, and Spring 1992, which arrived all together about three weeks ago, include articles, in the first of these issues, on 'The Frame Drum as a Dionysian Symbol in scenes on Apulian Pottery'; 'Presepi scultorei con strumenti musicali del Cinquecento in Puglia'; 'Alcuni gruppi strumentali nell'iconografia musicale de area Saluzzese'; 'The "Livre de franqueses i privilegis del Regne de Mallorca" - a source of Music Iconography'. The subscription rate is $10 for individuals and $20 for institutions for two issues a year, and at that price it is worth having; there's nearly always at least one interesting article and sometimes more, and there are also reviews and notes of what's going on.

EXHIBITIONS: The Liverpool Museum has dug out some or all of its instruments and put them on display until the end of the year. They describe themselves as 'one of the top five musical instrument collections in the country' and that I take leave to doubt. There is a fairly wide-ranging events programme if you happen to be in Liverpool and a fair amount of bally-hoo.
They said that they were producing a catalogue which I have, of course, asked for a review copy of. This has not arrived and that rather confirms the doubts expressed above.

As I assume most of you in the UK know by now, the Early Instrument Exhibition at the Horticultural Hall is from 12th November to 14th. I'll be there as usual and so will Barbara and you will be able to renew your subs there as well as have a chat. I look forward to seeing a good many of you there. If you want to book as an exhibitor, they've usually got a few places left even at this fairly late date. Write to Jonathan Askey at the Early Music Shop, 38 Manningham Lane, Bradford BD1 3EA. It is always a good occasion to see one's friends as well as to see who is making what and does it work.

The Utrecht Early Music Festival has two exhibitions this year, 28/29 August for Recorders and 3-5 September for Early Instruments in general. They don't say when bookings have to be in by; their address is STIMU, Postbox 565, 3500 AN Utrecht, The Netherlands; 31-30-322787. It's likely to be too late by the time you get this, but they don't allow for time scale with a quarterly Q. At least if you write they'll put you on the mailing list for next time.

The Accademia Bartolomeo Cristofori has been established in Florence (Via di Camaldoli 7/R, 50124 Florence) as a centre for the study of the early fortepiano, with a collection of instruments, etc. They told me (in June!) that they had a conference with masterclasses etc in May this year. Maybe another year they'll give us a bit more notice. Anyway, the collection is there and presumably it's open at least some of the time. Their leaflet has no indication of hours or days.

The Centro Studi Marangoni (Via Paris Bordone 11, 20149 Milan) is putting on an exhibition next year combined with a competition for the best violin "by young violin makers". I have tried to discover whether they are interested in copies of original violins or whether they are only interested in modernised instruments; they haven't responded and I suspect that it's only modern fiddles. If you want to try them yourself, get in touch with them. They are offering quite a good first prize, 6,000 Ecu (£4,700).

CONFERENCES: The Utrecht Early Music Festival is including a Symposium on the Recorder in the 17th century. Dates are 27-30 August. Address is as above.

The American Musical Instrument Society is holding its next meeting May 18–22 1994 in Elkhart Indiana. For information get in touch with Margaret Banks (in our List of Members under Shrine to Music Museum).

COURSES: I've already told you of Jane Clark's Scarlatti Weekend here at the Bate, October 30/31. The sonatas she suggests for working on are Kirpatrick 6, 9, 116, 201, 216, 220, 225, 226, 238, 239, 259, 380, 421, 435, 450, 465, 490, 491, 492, 501, 516, 519, 527, but she says bring any others that you want to play. Cost is the usual £20 (£15 Friends and students). You'll have to put up with English, French, or Flemish harpsichords; we haven't anything Spanish.

We shall also have a Recorder Weekend with Alan Davis on November 20/21, the week after the Horticultural Hall. Any recorder people from abroad coming over for that might like to stay round an extra week! As always, at least some of the playing will be on original instruments. Cost as above.

It's time we had another Oboe Weekend but I can't get hold of any of the oboe gang; presumably they're all abroad playing. Maybe we can fix something for the spring.
CONCERTS: The Friends of St Cecilia's Hall are putting on a whole series of concerts as part of the Festival Fringe at the Edinburgh Festival this year on August 15, 17, 19, 21, 24, 26, and 28, 3.00 pm each day at St Cecilia's Hall, Niddry Street, Cowgate, Edinburgh. If you're going to be in Edinburgh this is a golden opportunity to hear some of the wonderful keyboards of the Russell Collection. You can book from that address or from the Festival Fringe box office, or chance that there are still tickets left at the hall on the day.

DEADLINE FOR NEXT Q: October 4th please.

That's it for now, though this'll have to wait till Monday as I've not yet had the latest member's list update from Barbara yet, so there may be a few late bits to add then. There were and I've added them. I want to get it off smartish because CIMCIM meets in Antwerp on Thursday, and I'd like to get it to Eph before then rather than let it wait for ten days till I get back.

We are actually having a summer this week; very nice. That was last week; it's gone cold again today; at least we had a week. I hope that you are enjoying some good weather. See you at the Horticultural Hall. Between now and then I'm a bit in and out, so if you need access to any Bate instruments, ring up first. As well as Antwerp, I'm going to get a couple of weeks holiday in August, and then there's the European Seminar in Ethnomusicology seminar in Barcelona in September, and possibly another short conference in Leiden immediately before it. Still, I'll be here more or less continuously from mid-September on.

Jeremy Montagu
Hon Sec FoMRHI

PS It occurred to me on reading this through that some of you might prefer to have the Bate Demi-Catalogues and CheckList on disk (DOS only; I can't cope with Mac). If so, please say whether you want a 3.5" or 5.25" disk. Price is £8 for the three on the one disk in WordPerfect 5.1 or £10 if you need ASCII (which will take me more time to do and which may strip out some of the information, so I don't guarantee its quality despite its higher price). If one day the Faculty does what it's promised and puts me on line with e-mail facilities, you could have them that way, but unfortunately not yet.
Who rediscovered the idea that English viol bellies were made of bent strips?

An article on Dietrich Kessler by Jane Dorner in the Strad (May 1993) gives Kessler the credit for discovering, in 1980, how 16th and 17th century English viol makers constructed their fronts from bent strips. His article about this was published in Early Music (10/3 July 1982). This article was the first to show that the strip edges were planed for joining in the same way as lute backs, but not the first publication to state that English viol fronts were constructed from bent strips. Credit for that should go to my Comm 188b (Q15 April 1979). That Comm included a review of Kessler's chapter on making viols in Ford's book "Making Musical Instruments". Most of that review complained that the chapter ignored the historical evidence, including Simpson's statement implying that the bellies of viols of the usual shape were not 'digged out of the Plank'.

I remember discussing the issues of the review (including belly construction) with Kessler later that year at the London Early Music Exhibition. Dietrich explained that he was asked to describe how he made viols, not how they were made originally. He politely (as usual) accepted my point about bent-strip construction as an historical possibility, without any indication that he had already thought of it. Knowing Dietrich's honesty and integrity, I am sure that when he took the idea seriously (apparently in the following year), if he had remembered that conversation at all, he did not remember with whom it was. He was (and is) in very good company (a large fraction of makers and players in early music), who want to forget any statement I make (that they hear about) implying that some of what they are doing (in expressing their creativity and in their devotion to customer satisfaction) is contrary to historical evidence.

When I published the idea in that Comm, I was interested in promoting authentic viol construction, and gave no consideration to who thought it up. Now that this is an issue, I must report that I heard it (as an attempt to explain the burn marks on the inside of the front of the V & A Rose viol) from Stephen Gottlieb. He should be given credit for it (unless someone else suggested it to him).

If I remember correctly, Jane Dorner (the writer of the article) is Stephen Gottlieb's wife. He deserves a special treat from her in compensation for overlooking his contribution.

CNC

Under this heading in my Bulletin Supplement of the last Q (71) I mentioned that if a few members asked, I would reverse my decision not to publish Barry Jefferies's Comms on CNC history and advantages in an industrial environment. There was only one request, so I stand by that decision. I repeat it this time with a 24 page contribution of his on CNC history, programming and salesmanship for its advantages, none of which seems to be (nor is claimed to be) relevant for musical instrument making. It was obviously prepared without musical instruments in mind, and if the author will not bother to prepare a tailored version for our interests, I felt disinclined to bother to give it space. What he additionally sent and could be relevant is included in this Q.

A Mistake and an Omission in My Comms

On the table on p. 47 of Q69 in Comm 1129, I made an arithmetical error in calculating proportions while analysing Simpson's triple-time information. As a result, the slowest triple-time column (on the left) should be shifted about a cm to the right, representing a tempo of 56 MM. The same applies to Simpson's 6, which should be represented by 112 MM. The two triple-time tempi mentioned by Playford (1654/1674), displayed with each as an average of two of Simpson's tempi, should be shifted ¼ cm to the right. This does not seem to affect anything else in that Comm.

On p. 39 of the last Q in Comm 1167, towards the end of the third full paragraph, I forgot to draw two little diagrams on the final word-processor printing for inclusion in the Q. They are:
Restoration

The 26 June issue of *New Scientist* discussed a report on musical instruments by the Museum and Galleries Commission (Jeremy’s Bulletin in this Q mentions it). It quotes: “So much restoration has been carried out on early instruments that there has been a serious depletion of our record of knowledge about their original condition.” It estimates that out of 4000 early keyboard instruments only 1% remain in original condition. (I am far from sure about that 1%). It says that restoration destroys “the key resource on which research about a maker’s techniques is based”.

No doubt much valuable information about an instrument’s history can be uncovered during a restoration. Unfortunately only a tiny fraction of it is published so that the rest of us can know about it. It is not good enough for the information to be in the restorer’s head, verbally shared with other restorers, in rough notes or even in a restoration report in a filing cabinet. Such reports are particularly welcome here. If the owner is adamant on restoration willy-nilly, it is much better for instrument history that it is restored by someone who will publish a report than by someone else who won’t. This in an excellent reason for taking on such a job irrespective of one’s ideals about the situation.

In a museum environment, this information can be gleaned from X-rays and other methods (present and future) without restoration, and it can be repeated as often as one wants to confirm observations and to check out new ideas about the instrument’s history.

Another thing that bothers me about the restorers in the bassoon controversy is that they have no respect for why the instruments were shortened. If one must restore, the most responsible approach is to restore to the last state in which it was part of a living musical culture. The bassoons were shortened for a living musical culture, and for a pitch standard probably more authentic for the music played on the restored instruments today than the a’-415 Hz that the instruments have been ‘restored’ to. Of course the owners give them no choice in this matter, but if they have any interest in music history they should at least be curious about how the instrument works in its shortened state.

The owners need an instrument in a’-415 and want to believe that it has been restored to its original state, so the restorer is under tremendous pressure to find evidence that it had been shortened. Is the evidence for shortening good enough to convince an objective person who is not under this pressure (and who is scholarly enough not to be taken in by the Haynes version of pitch history) that this happened?

And what will happen to these bassoons when the music public realises that a’-415 Hz was mostly a wind-band pitch, that 440 is at least as authentic, and early music and classical music complete the amalgamation that is well under way already? Will the bassoons be shortened again or be abandoned (i.e. sold to a student) and replaced by an instrument in the new compromise fashion? The restorers are lovely people whose greatest joy is to use their considerable skills to give happiness to the musicians that they respect and admire, and who also are lovely people. What they don't think about is that after they and their musician friends are dead, bassoons should live on and keep telling more of the story of the early bassoon. The ones they've restored, if lucky enough to survive (as well as the replaced crook, pads, cork, etc), will have much less to say. I can't imagine that the restorers are so short-sighted and unimaginative as to assume that the answers to their questions that an instrument gives them during a restoration is all it has to say that will ever be considered worthwhile.

My Comms

I am particularly pleased that my Comm 1167 induced Remy Gug to contribute his Comm on Medieval Glues in this Q. In whatever ways the two Comms are in conflict, consider Gug’s real evidence as correct, and my statements appropriately modified or withdrawn.

You will probably notice that I have no Comms in this Q. I was working on a Comm modifying my work on fingerboard curvature taking into account the depression of the string towards the fingerboard by the bowing or plucking force. I had just solved the differential equation and was looking at how the shape differed from a logarithmic spiral when in casual reading during a break I came across some evidence on medieval tempi that I could do something with. A more objective
interpretation of this evidence was a breakthrough when compared with the information in Comms 1129 and 1130. Things started to make a lot of sense and pieces of the jigsaw kept falling into place. Consequently I have just finished a 12 page paper (almost 9,000 words) entitled "A History of Tempo to 1700". It has reasonable answers to almost all of the basic questions I could think of asking, so it feels good to have worked it out. Now that it's finished, my main problem is what to do with the thing. I will try publishing it in a journal where the readers are supposed to be interested in the topic (and who will be most astonished by reading it). Trouble is anticipated because of its length.

The gist of the conclusion is that a prominent note value of the most popular type of tempo was at all times in the range of the pulse (60 – 80 MM). It was the breve at the beginning of mensural music, later the perfect semibreve, and by the middle of the 14th century it was the minim in major prolation. By late in the 15th century it was the cut-time minim in minor prolation, and by the 17th century it was the crotchet in common time. Models for how and why most of these changes happened are offered. I suggest that we start thinking about accepting that historically accurate tempi will not make the music 'live' to modern ears, but a disciplined higher speed related to the historical evidence would be truer to the intentions of the composers than just following musical intuition.

Tempo is very relevant to our study of historical instruments. I know from my strings business that one of the most important factors that today's early instrumentalist look for in their equipment is quickness of response. They are our customers and we do our best to give it to them in the products we make. But if we have made a really accurate copy of an early original, we must remember that we shouldn’t necessarily expect it because tempo standards then were likely to have been slower.

Workshops for rent
In the Announcements section, the Conacher Organ Builders of Huddersfield are offering to share their own facilities with instrument makers or restorers who will join them, creating a centre of excellence. It is a lovely idea, thought of many times before. We wish them luck. At NRI in Manchester we have been trying to run a similar scheme for a couple of decades (the workshops that are available now start at £18/week). We’ve found that it works only when either we generate a large fraction of the maker's business (particularly difficult nowadays) or he or she does a lot of local business repairing modern instruments.
BUILD YOUR OWN PICTISH HARP IN A DAY

On Saturday 3 July, and again on 4 September, the Leisure Services Department of Ross & Cromarty District Council is hosting a 1-day workshop with Tim Hobrough at which participants will build (assemble), string, and learn to play a small 12-string harp based on the ancient Pictish instruments. The fee is £25. Entry is open to anyone over 8 years old. Places are limited, and the first workshop was over-booked in 2 days.

The harp is small and "modernized", having nylon strings, zither tuning pins, and a length of birch dowel for the pillar. However, its historical origins are evident in its shape, the hollowed-out soundbox, and use of European timbers. Assembly will consist of sanding, finishing (wax), tightening a screw, screwing in the tuning pins, and stringing, and tuning. Experienced or adventurous builders can easily take the harp apart to do more work later. Tim will bring a selection of tools and instruments so participants can get hands-on experience of how more authentic historical harps are made.

At the end of the July workshop William Taylor will complete the day by teaching the builders how to tune and play their new harps. Bob Pegg will instruct the September builders.

The harp is part of Tim Hobrough's ongoing Pictish harp project, which started when he was commissioned to build an "authentic" copy of the instrument shown on the Nigg stone, which is the oldest known representation of a European triangular-frame harp. Tim's copy is in the Groam House Museum, a prize-winning museum devoted to the Picts located in Rosemarkie, 15 miles from Inverness. Tim then designed a 19-string Pictish-style harp, suitable for novice medieval harpers, made by Ardival Harps Ltd. of Strathpeffer. The 12-string harp is pushing things a bit, but its sound is not too unlike the much more expensive authentic harps of its type, so the harp could be used for medieval music in schools or amateur groups, without too many apologies. But really, it is intended to be a FUN harp more than anything else.

An interesting development is that a group of Cumbrian schoolboys are going to assemble some kits for use by the Sunbeams charity, which brings music therapy to "special-needs" children in the Lake District.

The low cost of the building workshops is made possible by the support of Ross & Cromarty District Council, and the generosity of Cromartie Estate Timber Mill, Castle Leod, Strathpeffer IV14 9AA, who are supplying locally grown beech and pine from their extensive stock of native timbers.

Tim Hobrough is interested in hearing from anyone who would like to organize a similar workshop in their area.

Leisure Services have organized several "early music" events in Ross & Cromarty. In the past these have included a weekend for instrumentalists and a weekend of madrigals, both led by James Ross; a renaissance dance workshop with William Taylor and Barbara Swetina; and numerous harp classes with William Taylor. On 10 July, as part of the activities connected with the "Scotland's Music" exhibition, Charles Foster will lead a workshop on early Scottish music for singers and instrumentalists. If you would like to be informed of future events, please write to Bob Pegg, Leisure Services, Ross & Cromarty District Council, Council Offices, Dingwall IV15 9QN, or telephone Bob Pegg on 086-283-2685.
"The Home of Highland Music" has recently opened in a restored 18th Century mansion on the north bank of the river Ness. The main exhibition consists of several video and audio installations tracing the history of music in Scotland and particularly in the Highlands and the Western and Northern Isles.

There is a small theatre showing a 15-minute introductory video, and the two main exhibition rooms each have another short video. There are also 16 audio "stations" at each of which the visitor can listen at leisure to 5 or 10 selections of music. There are numerous explanatory panels. A studious visitor should allow 2 or 3 hours for the experience, but it would take 8 hours to hear and see everything. Naturally there is an emphasis on "native" Highland music but "main-stream" or "European" music is also included.

Balnain House also has an expanding collection of musical instruments which visitors are invited to play (or try to). These include bagpipe, tin whistle, fiddle, bodhran, and 4 harps. The collection of harps is unique, especially since they are there to be played. The harps are: a small medieval harp (on loan from the builder), a medieval wire-strung clarsach, a renaissance brayed harp, and a modern gut-strung clarsach (these three being the gift of Marks & Spencer Plc). Donations or loans of early or modern instruments connected with music in the Highlands are most welcome.

There are plans to have occasional instrument-makers in residence.

The building also houses an excellent licensed café; a shop selling tapes, CDs, books, and other items; and a small recital room. A library and archive devoted to the music of the Highlands is being assembled.

Music Fyne and Coronach took part in the opening festivities, and are believed to be planning return visits. William Taylor is presenting a series of recitals on a variety of harps associated with the early and traditional music in Scotland, and practical workshops on playing and arranging for small harps.

For further information and a list of forthcoming events contact:

Lucy Conway, Manager
Balnain House
40 Huntly street
Inverness IV3 5HR

telephone 0463-715757
18th June, 1993.

Mr Jeremy Montagu
Faculty of Music
St. Aldate's
OXFORD
OX1 1DB

Dear Mr. Montagu,

As someone who is involved in musical instrument technology I am writing to you to float an idea I have for assisting young musical instrument makers and restorers whilst helping to promote their skills and talents at a national and international level.

If you were about to launch your own small business, making or restoring musical instruments, where would you go?

You would need premises, equipment, office facilities, and the right environment.

I have the premises, Springwood Organ Works, in the centre of the University town of Huddersfield which, as well as being a famous centre of musical excellence, is set in some of England's most attractive countryside.

We have well equipped workshops that not only have the basic facilities (such as benches, glue kettles, cramps, and drill presses) but also boast everything from a working forge to a lathe with a 12 ft. bed!

The office has a word processor, photo copier and a fax machine.
The environment would be ideal - a small group of musical instrument makers and restorers, working individually, who could exchange ideas and skills and share a common aim.

Road, rail and air links are excellent, relatively low cost housing is available, and we have a local authority that is keen to promote small businesses!

I hope to make our workshops a thriving centre of musical instrument making and restoration with an international reputation for excellence.

We already have groups of visitors from Europe and America and the U.K., and I imagine that in time our centre would become an important forum for the music world.

Everyone involved would benefit from sharing the costs (I expect rents to start at £20 a week) and facilities.

I intend to convert one floor of the building into a gallery where instruments would be exhibited, concerts could be held, and students, musicians and even paying members of the public could be entertained, generally promoting the work of all the people involved.

The more people I speak to, the more enthusiastic I become about this idea.

If you agree that the music world would benefit from a national centre of excellence in musical instrument technology, and can help by publicising the idea or by introducing a young person who may be interested in participating will you let me know?

Thank you for your help.

Yours truly,

for and on behalf of
PETER CONACHER & CO. LTD.

John Sinclair Willis,
Managing Director.
Review of: CIMCIM Publications no.1: 
Recommendations for the Conservation of Musical Instruments: an Annotated Bibliography, 1993, 19 pp, no price stated; available from EUCHMI, Reid Concert Hall, University of Edinburgh, Bristo Square, Edinburgh EH8 9AG.

This is a must for anyone involved with musical instruments, whether you’re someone who is looking after them in a museum, or someone who wants to get at them in a museum, or whether you are a conservator or a restorer who is being asked to work on them in a museum. Equally it is a must for anyone who owns any instruments in a private collection, who looks after them, or who tries to play them, and so on. It is addressed, of course, to museum instruments, whether public or private collections, but this isn’t just ‘early’ or antique instruments. It covers, obviously, the instruments of other cultures as well as our own, and it applies to pretty well any instrument the moment it leaves the hands of a regular player and, if one can afford to buy modern instruments, anything old or new, the moment it arrives in a collection.

It argues strongly against the use of museum instruments, emphasising the preferable course of making reproductions for use instead. I’ve never understood how one can expect to make true reproductions unless one knows what the originals sound like. However, the advice given in the introductory text is something that we can all argue about and discuss (and rest assured that we shall later this week in Antwerp at the CIMCIM meeting). What is important, and why I say that ‘this is a must’, is the bibliography. If you have the books listed here, and there aren’t so many of them, you have all the essential material. Obviously you can go on accumulating books — every one of these titles will contain its own bibliography. But this is the basic library. If what is here is read and understood, nobody can go far wrong.

There’s only one book that I was surprised to see omitted, and a flyer for that came with my copy of the bibliography: the Anatomy of an Exhibition: the Look of Music, which was edited by Robert Barclay after the Vancouver exhibition (published by IIC-CG, POBox 9195, Ottawa, Ontario, Canada K1G 3T9, price to IIC members $12, non-members $15). This has so much detail of the trials, tribulations, and all experiences of setting up this exhibition, including the technology of getting instruments to it from all over the world, that it is absolutely invaluable for anyone, especially for anyone who is setting up a museum or a display within a museum. Even more for anyone who is thinking of mounting a loan exhibition or who is asked to lend instruments to any exhibition.

Coming back to the CIMCIM bibliography, I am sorry that they’ve not told me what it costs, so that I could tell you. It is important to pretty well every member of FoMRHI, because if you don’t have any instruments lying around, why do you belong to FoMRHI? And if you do have any instruments lying around, if you want them to go on lying around and not deteriorate, there is essential advice here for you. Incidentally, only two of the books recommended is not titled in English, and those are both conference reports with some of the contents in English. So if you can read this page, you can read the books annotated here. If money is a problem (and it’s a pity that they don’t give at least an indication of the prices of any of these books), the excellent annotations will give you an idea of the comparative importance of each of the books so that you can arrange them in a ‘how many can I afford’ order.

There's been a general change of cast in AAMIM, with new President, new Secretary, and so on, and apparently an anonymous editor for JAAMIM, because while the Secretary (Ken Tyrrell of 10 Hydrae Street, Revesby 2212) has signed the Editorial, the editor's address is given as Box 341, Epping, 2121, an address that doesn't correspond with that of any name listed. Good luck, and best wishes for a flourishing AAMIM, to the new officers.

There's more meat in the J than usual, with, among a number of other articles, a particularly interesting one, reprinted from The Strad back in the 1920s, on making violins from red cedar. Also one on digital sampling and musical instrument testing. Another on making your own ivory (not so different from Brian's in the last Q) -- I hope that they note, and reprint for their members, David Van Edwards' warning in this Bulletin.

Do you get excited when the postman brings your Q?

I have done quite a lot of travelling lately, and in addition to enrolling a few new members, have met existing ones. Some of these have said things like "What's happening to FoMRHI? It has so many silly things in it", and so on. They probably know that they're not being entirely fair, but they remember a time when the Q was fat with good ideas, scholarly research and workshop tips. This is a shame. The more members we get and keep, the better will be the contributions both in quality and quantity.

Perhaps we should get our 'Editorial team' to tactfully explain sometimes that some items, from the unintelligible to the abusive, be returned with helpful comments, encouraging the author to resubmit after seeking help with language or checking facts or whatever. It would only entail slight adjustment to a very few Comms, and would do nothing but good for the contributors, as well as improve the quality of the Qs and the reputation of FoMRHI.

Controversy is to be expected but should be illuminating and benefit those involved, and definitely not involve any semblance of a slanging match, which always weakens the point being made. However there may be people who'd argue that a damn good slanging match makes for a good read!

So what must we do? - Recruit anyone, and especially recruit everyone who is working on their speciality and has or will soon have something to say. The quarterly is an organ which should encourage new writers, it being less daunting to write for because of the facility of adding something in the following edition. This is its strength and creates for me at any rate, an aura of being in a club, not so much a social one, but a world-wide 'pen-friend' type of thing with a common and passionate enthusiasm for anything to do with historical instruments.
Welcome back the Hunter – Income from the ivory trade is the best assurance for the survival of elephants


Voltaire famously wrote to Monsieur l’abbé: “I detest what you write but would give my life to make it possible for you to write it.”

I could never shoot an elephant, or any other animal, but I shall devote a Saturday column to the case for allowing others to do so. After reading Raymond Bonner’s book At the Hand of Man (Simon & Schuster), I shall go further and say their hunting should be encouraged, as should the selling of ivory.

Ray Bonner and I are elephant enthusiasts. Most years I contrive a journey to some African waterhole. There I watch these majestic beasts act out evolution’s first attempt at communal living. I see them wander the bush, “as if”, in Karen Blixen’s words, “they had an appointment at the end of the world”. Africa has nothing to equal it.

Bonner’s credentials are more substantial than mine. He has studied both elephants and elephant diplomacy in detail. He has gazed into the cesspit that is the world elephant lobby, and come away spitting with anger at its lies, faction fighting, and patronising attitude to Africans. I shall choose my wildlife charities with more care in future.

Three years ago we could not open a newspaper or children’s magazine and avoid heart-rending photographs of mutilated elephants, villainous poachers and bloodstained ivory. The pictures were always accompanied by appeals for money, never for an address in Africa. I was puzzled at the time to visit a game reserve and encounter fury at this publicity. Elephants in southern Africa were not dying out, let alone “endangered”; they were increasing. Competition for land and vegetation required their culling and management, paid for (up to a point) by the sale of shooting licences and ivory. Certainly numbers were falling in East Africa, through corruption and political ineptitude. But Botswana alone had twice as many elephants as Kenya, and its herd doubled in the 1980s.

The essence of Bonner’s case is that Africans must be able to make money from elephants or they will wipe them out as Europeans once wiped out bears and wolves. Poor people who live among wild animals — rhinos, lions, gorillas — must have a financial interest in their survival. This means exploiting them in the same way that the British farm grouse or stags, not just getting occasional compensation for trampled crops. Nor is mass tourism the answer. As Bonner points out, the 20 Land-Rovers that now encircle every lion pride in Kenya destroy habitat, bring little revenue to local villages and turn reserves into zoos. If elephants are to survive in anything like a natural state, Africans must want to protect them and the ecological diversity that goes with them.

Until 1968, says Bonner, every leading conservationist backed the “sustainable utilisation” of African wildlife, treating animals as part of the local economy. So did conservation groups such as the WWF and the African Wildlife Foundation.

The AWF, based in America, supported the agonising decision to shoot the last herd of 100 elephants in Rwanda in the late 1970s. The elephants were eating the forest in which Africa’s most important colony of gorillas live. It was elephants or gorillas. Gorillas had to win.

In 1989 the tide turned. Elephant conservation across the world was suddenly overwhelmed by militant American “animal rights” groups using emotional publicity, much of it based on the political anarchy in East Africa. Conferences saw white zealots pitted against white zoologists (Africans were seldom involved). At the 1989 Lausanne conference, East Africans were browbeaten by American lobbyists into
switching sides. The elephant was ludicrously declared "endangered", and the trade in ivory was banned. Southern African states bitterly opposed the ban but were forced into line. Zimbabwe was even threatened with the loss of American aid.

The motivation behind the ban was simple. Just as America’s Irish policy has little to do with Ireland, so America’s elephant policy has little to do with elephants, and everything to do with fund-raising. Bonner reports an AWF official in 1988 complaining that consultants were "screaming" for endangered status for the elephant because of its phenomenal publicity value. Mangled tusks and fabricated statistics, cries of holocaust and genocide, threats of extinction in "ten short years" were turned into the most successful fundraising in conservation history. The elephant ousted pandas and whales as king of the "charismatic mega-species".

International bureaucracies lack the accountability of domestic ones. Both the AWF and the once-moderate WWF were dragged by militants into what was a patently false campaign for an ivory ban. Bonner cites memos in which frantic officials conceded ground to extremists for fear of losing members and funds. Reluctant European affiliates were bludgeoned into following suit. African states and local conservationists fearful for their grants felt it politic to switch too.

The impact of the 1989 ivory ban was swift. The ivory price fell and Africa lost some $50 million in hard currency. It received not a cent in compensation. In Nairobi, Richard Leakey staged an "ivory burn" for President Arap Moi. Three million dollars, badly needed for Kenya's conservation programme, went up in publicity smoke. Here was Africa paying for the conscience of the West with a vengeance. I wonder how Britain would have reacted to a Zimbabwean demand for an ethical ban on all trade in grouse, furs or deerskin?

The power of Bonner’s case comes both from his evident love of elephants and from his instances of how good management can stabilise numbers. At Kaokoveld in Namibia and Nyanzinyami in Zimbabwe, poachers are literally turned gamekeepers. Africans are guaranteed the revenues from hunting and culling and come to recognise elephants not as enemies but as valuable to their economy. Money comes not from government but from the market, albeit a strictly controlled one.

One licensed hunter is reckoned to equal a hundred ordinary tourists in cash to local villages. The hunter not only pays to cull, he does far less damage to the local ecology and way of life. To ban the hunter and his ivory is to deny the Africans a livelihood that is theirs by right. The ivory ban was imposed on many African states flagrantly against their will and the interest of long-term conservation.

Bonner’s book is full of morals. Lobbyists who ignore elementary economics defeat their own ends. Declaring the elephant endangered may yet endanger it. "Good cause" crusades, especially those directed at distant countries, are always vulnerable to perverted motives, and above all to the need for money. Accountable to no government or country, international philanthropists can become accountable only to their own bank balances.

I accept that some people find the killing of any animal for pleasure more than they can stomach, even if they buy the products of such animals. They find the killing of stags and game birds equally cruel. But we do permit animals to be killed for pleasure. To tell Africans, incomparably poorer than we are, that they may not earn money from such killing is insufferable hypocrisy. Elephants may belong to the world, but Africa is their custodian. If Africans choose to save them from extinction by managing their numbers, all strength to them.
A Counterblast to the Calvinist Tendency.

Leaving aside the technical and the purely personal matters raised by participants in what I suppose will be known to future generations as the Great Bassoon Row (Comms 1119, 1143-6, 1159 and 1160), I want to comment on the philosophical issues raised.

The following propositions seem to me to be self-evident:

1. The purpose of music is to please the ear and move the heart. An authentic performance is one which really does this.

2. Music is not a purely intellectual activity. Scholarship, however, is: its purpose is to discover truth. Establishing the truth (or at any rate setting limits to error) about historical instruments and historical performance practice is worthwhile in itself, regardless of how this knowledge is used. For this reason, mutilation of old instruments is to be deplored as it makes the discovery of truth more difficult for those who come after. But scholarship is not music. Historically accurate performances on historically accurate instruments are musically worthwhile if, and only if, they are moving and effective. Historical study is valuable to a musician in so far as it enables him to perform more musically. Historical accuracy is not in itself a musical virtue.

3. Although taste can be developed by study and experience, we cannot be argued into thinking something beautiful or striking: it is ultimately an intuitive response. Since we are twentieth-century people, our judgments of what is beautiful and moving cannot be other than twentieth-century judgments. However deeply we immerse ourselves in historical study, we cannot hear Monteverdi, for example, with the ears of a seventeenth-century Venetian.

4. Nowadays life and vigour has been added to performances of older music by restoration of the original nuances and ornaments, use of appropriate instruments, and so forth. In this way, historical study has immensely enriched musical life. But in any performance decision, the ultimate touchstone will always be the performer's own musical judgment. It isn't a question of whether this ought or ought not to be so: it cannot be avoided if the music is to be performed as opposed to merely demonstrated.

There is therefore no reason for a musician to be ashamed of choosing, for example, to use finger-holes in a baroque
trumpet copy or extra keys on a bassoon, if he needs them to get the effects he wants. Provided no original instrument is mutilated, this is not a moral lapse.

I am tired of reading sneering and self-righteous denunciations of practising musicians in FoMRHI. It is far harder to be a true musician than to be a good maker. In my view we exist to serve musicians and, through them, the art itself. Let’s have a fruitful dialogue, based on mutual respect, with the performers; and let’s be a Broad Church, not a rigid Calvinist sect constantly on the lookout for impermissible deviations and constantly crying "J'accuse!" That way leads away from music into a cul-de-sac of coterie, irrelevance and decline.

5. Actually all attempt at historical reconstructions are doomed to failure. How we smile now at Landowska’s boast: "You play Bach your way, I'll play him his way". But such attempts may be valid musically if we find that they please and move us now. All music, however long ago it was originally composed, is contemporary music when it is performed. All music happens in the present tense.
There used to be endless arguments about the exact nature of authentic musical performance. Nowadays we know that this cannot be pinned down; what is necessary is to educate one's musical perceptions by assiduous study of sources and then to get on with it. "A good Ear improv'd by Practice is preferable to all Rule or Direction that can be laid down." This was the great 18th century oboist, Fischer's view. In Fruelleur's "Modern Musick-Master" of 1731 he suggests that to get the lowest note on the oboe, you "blow somewhat strong." Writing some 40 years later, Fischer agrees that you must "blow pretty strong." He goes on to say that "Every Hoboy will not admit of being Fingered alike." Yet in the past few issues of this journal there have been astonishing attacks made on performers in general and in particular, for, among other things, the fingerings that we use.

It has been asserted that "nobody can earn a living just off early music." This is totally incorrect. I earn my living just off early music and so do most of my woodwind and many of my string playing colleagues. I am not alone in spending hours and hours each year in making reeds for and learning to play a whole range of early oboes, trying to get as close as possible to what would have been "right" at the time. Many of us have reason to be grateful to the Bate collection for lending us instruments specifically for this purpose, and the collection in return has benefited from our upkeep of certain instruments and our donations of reeds. In the orchestras I play in, the string players argue passionately about bowing, phrasing and vibrato and there is an entire spectrum of chins off or on, as one would expect among players whose clothing around the neck and shoulders is so much less than in previous centuries. And for some years now, horn players have not used hand stopping in baroque music.
It is well established fact that certain fingerings and articulation which work well at home let you down in rehearsal and fail completely under the stress of performance and recording. Perhaps some instrument makers are not aware of these difficulties. Many of them, however, have a positive and creative relationship with players and this is the only way forward. We are interdependent and I would suggest that discussion, not mud-slinging, would be to our mutual benefit.
Hello, and greetings to all of you with whom I haven't been in touch for some years. Concerning Paul White's Comm. 1119, we have had replies from those implicated; it seems relevant for someone else to put a word in as well, so I would like to share the body of a letter which I wrote to Paul on April the 8th:

Dear Paul,

It was nice to chat with you on the phone a while ago. Now that I've seen the latest FoMRHI, I can see what you mean about your article having created quite a stir. Actually I had no idea you were referring to Graham Lyndon-Jones. I have visited him, discussed bores and compared notes generally about instrument making -- I remember explaining my method of forging key trunnions, and watching him solder a crook for a dulcian. I have one of his dulcians, together with his booklet listing various historic types and how they differ. I am convinced that his conception of what constitutes a historic reproduction is vastly more conscientious than what you suggest. We Americans have a tendency to take things too literally. Graham, as I remember, is a congenial person with a good sense of humor. If he mentioned that he was going to use his Stanesby reamers for the Eichentopf (meaning that he was roughing out the blanks, undersize) and expanded that idea with an "aside", perfectly deadpan, that no one would know the difference anyway, that sounds to me like a typical example of British workshop humor (and a good one). If some such misunderstanding has opened up what may be an unhealable rift between two former colleagues, it's a pity. An accusation of the sort you have made is not to be taken lightly, because of the considerable time and energy required to make a reply in defense.

As for Alberto Grassi, I do not know him personally, but what he writes about the process of getting the bassoon in question playable sounds to me quite reasonable. Unfortunately, the vindictiveness you have shown casts a shadow over the rest of your communication, because when one sees an excess in one area, one may suspect a similar excess, or lack of judgement, in another, and so what you wrote which is of value has less chance of being taken seriously. And I think you raised some very good points, especially the way a maker's eagerness to get a copy to play more easily often results in losing the character of the original. Wouldn't we love to conjure up some expert makers and players from the 18th century and get their feedback!

I suppose the beginning of Paul White's Comm. 1160 could be interpreted as a reply to this; I had no reply from him directly. As I said, I commend Paul's ideals in this. It is good to do some serious soul-searching from time to time as to what we are really doing. It is time also for us to get down to specifics, and I think when we makers (and players) have some insight to share based on our own experience, as to how to better achieve a more authentic sound or response, we should do so. In this spirit I would like to point out some questionable logic in the third to the last paragraph of Comm. 1160, as I have some experience in measuring and restoring bassoons.

About two years ago I restored a Schlegel bassoon belonging to Libby Hedrick. There were obvious things to attend to: woodworm, cracks, springs and pads. What came to light only when the lapping was removed was how much the instrument had been shortened. At both ends of the wing and long joints, the tenons had been expertly cut back on a lathe, so that only a very slight eccentricity and the lack of scores showed up the more recently turned portion. Part of getting the bassoon to play more authentically was then to make rings to take up the space in the sockets, when the tenons were withdrawn to their original positions. The bottom of the butt joint had been shortened as well -- simply sawn off, as well as the septum having been raised. When I removed the cork (it had nearly disintegrated), the former positions of both cork and septum were clear from marks on the inside. By the way, does removing a cork to examine the septum constitute tearing the bassoon apart? (Paul's words). I suppose it might, if you couldn't make a new cork! The new cork in this case had to be quite thin, which was tricky, and for the septum, I carved a piece of boxwood to fit (matching the wood that had been removed), set it in place with hide glue,
and filled any remaining gaps with beeswax. The playing characteristics of the Schlegel were already considerably improved by withdrawing the tenons; after having restored the cork and septum, they took something like a quantum leap forward -- the intonation and overall resonance improved remarkably. There remains the lengthening of the top of the wing joint and procuring the ideal crook to complete the restoration; luckily the bore has not been enlarged at the top. The total amount that the bassoon was shortened is a minimum of 57 mm., a maximum of 88 mm., if the top of the wing joint had been originally level with the bottom of the bell joint.

What struck me principally about this bassoon was how expertly the shortening had been done. As the pitch standard rose, it must have been common practice, bassoons being the expensive things that they are. It doesn't surprise me at all that "most Grenser's" would have a "series of sub-arches" leading up to an extremely high septum, if these turn out to be traces of earlier positions of the septum. What would be interesting would be a report on the differences in playing characteristics between those Grenser bassoons which have these sub-arches and a high septum (and perhaps other traces of shortening) and those that do not. If the Gothic arch shape of the septum is a "unique Grenserian feature," could it be simply the trade mark of the craftsman who gained a reputation (and hence the business) for bringing up the pitch? -- who may even have been the maker himself, to judge from the high standard of craftsmanship of the work done on the Schlegel.

FoMRHI Comm. 1177

An eminent professional player of early instruments (not one of our members and, as he has not replied to my letter asking whether I may quote him, remaining anonymous, but please take my word for it that he is at the top of the tree) has sent me a cassette proving that a number of our better early horn players play baroque music without putting their hand in the bell. Specifically Andrew Clark on a Max Thein copy of an Ehe, Gavin Edwards on a Nicholas Perry copy of an Ehe, Anthony Halstead on Meinl & Lauber and John Webb copies of Leichamschneiders, and Christian Rutherford also on a John Webb Leichamschneider. I said in my Comm that there were exceptions and indeed there are, and glorious ones, too, as this tape asserts. And if my correspondent is correct that there is a certain amount of disquiet in the horn fraternity over these allegations you have made in FoMRHI about hand-horns (hand technique) still being used in baroque music, I would say three things: 1) I am glad that FoMRHI is being read by such people and that they react to it; 2) sincere apologies to those four players named above and to all others who play in the way that they do; and 3) I only wish that it were true of everybody. There are still too many players (we've all seen and heard them) who use modern mouthpieces/reeds/whatever, who use modern, sometimes still even plastic, bores inside old-pattern exteriors, and so on and so forth (no need to repeat in detail). It's wonderful that some people are truly authentic. But Comms such as we've had recently are still necessary in the hope that we may open the minds of some of the others to the possibility that better sounds, truer music, might follow from original equipment and techniques. Correct us when we go too far (as several have done to Paul, who did) or when we give the impression that we think everyone's doing it wrong (as presumably I did, and I apologise unreservedly for so doing), but then help us to persuade the unregenerate to change.
Thanks to Alec Lorretto for his comment on boring bar cutting under CNC control. A very good idea and one that I shall pursue, as it seems much more flexible than reamers as a technique and completely dispenses with tool making for most bore profiles.

Thanks also to Brian Ackerman for his suggestion of a secondhand Denford mini CNC lathe as an alternative to ST Deans retrofit and agree it sounds much more viable.

However, the ST Dean system was considered worthy of comment as it could be a resolution to the problem. No money! No CNC!

The original article illustrated artifacts made on the system, which were very neat and most of the technical difficulties inherent in the machine design seem to have been overcome and I consider this 1989 system to be a good starting point for anyone considering a retrofit. But I will admit that using such technology as a Myford ML7 lathe c1950 and a Sinclair ZX Spectrum computer of 1981 that loads in 8 bits is not the appropriate technology for the reproduction of historical artifacts.

My current researchers into CNC techniques have shown me mechanical and electronic advances made since their machines were designed so enormous as to be almost unbelievable.

At the time of writing I had only knowledge of this system and the Denfords! But in the high speed world of CNC engineering everything updates annually in fierce competition, the objective of which is lower cost, higher speed, more accurate manipulation of the environment. A little knowledge is a dangerous thing! This I did not realise!

I'm very glad J Goodacre wrote 1137: it saved me starting in the wrong direction with pilot hole and has thus eliminated a 'hole' operation per component which just goes to show how useful these quarterlies can be.

BARRY JEFFERIES
LOW COST CAD/CAM

CAD/CAM is the name given to CNC machine operating software for PCs.

CAD = Computer aided design.

CAM = Computer aided manufacture.

Camtek Peps is a pack that will operate on IBM 486 compatibles and costs £450.00.

It will operate two axis machines (such as lathes), it creating an image of chuck, work, tail stock, and cutting tool.

One defines the stock size and cuts the work as a graphic this software working within a windows environment. Thus it is possible to graphically simulate the cutting of:

i Reamers

ii Socketing tools

iii Exterior turning of joints/decorative rings

This data is storable on floppy disc. Once this CAD picture is made the software will operate a CNC lathe to cut it out.

Thus, if one considers cost effective production it can be seen that a very flexible systems can be had by way of the following set-up:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amstrad 486 SLC</td>
<td>£800</td>
</tr>
<tr>
<td>Peps 1</td>
<td>£450</td>
</tr>
<tr>
<td>Denford lathe</td>
<td>£1250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£2600</strong></td>
</tr>
</tbody>
</table>

An alternative to this is the Emco Unimat mini lathe which is a bit small for our requirements of woodwind instrument reproduction but cost less at £1494.61 (plus computer), this being £710.89 for the manual lathe and £783.72 for the retrofit and software, the system also running on IBM compatible.

This system is aimed at the hobbyist engineer whereas the Peps-Denford is a more professional set-up.

BARRY JEFFERIES
Recently arrived for restoration at my shop is an Italian harpsichord. It lacks antique inscription. However, on the basis of molding and arcade profiles, in addition to a number of other features of its construction, I feel it might be advanced as an unlisted instrument by Giusti. One matter I need help on is an inscription left by a person or persons unknown to me. Perhaps others have made acquaintance with the following people and could tell me more about them.

Inside the keywell of the harpsichord is this faint, pencil inscription:

Inspectado por
Barkin y Ormondroyd
Ingenieros de
Clavicémbalos
Condición: δωρετος

I render the inscription into English as “Inspected by Barkin and Ormondroyd, Harpsichord Engineers. Condition: Excellent.” Beryl Kenyon de Pascual hasn’t heard of Barkin and Ormondroyd in Spain. Has anyone else? Perhaps in Latin America? Or, leaving aside momentarily that all inscriptions should be taken to be serious and historical statements, does anyone else imagine that there might be a bit of leg pulling here? In any case, I’d appreciate any news of Barkin and/or Ormondroyd. They’ve become an interesting pair. Thanks.

2325 3rd Street, #425, San Francisco, CA 94107 USA.

The oboe with the stamp "W: BEUKERS" in the Victoria and Albert Museum in London is famous for its woodcarving. The sockets and the baluster are each covered with three long acanthus leaves, changing in four ranking branches with leaves and berries along the columns and the keys. This complicated change in pattern from three to four elements is nicely done; all carving is top quality in design and finishing.

The carving on the bell is very interesting. On the front of the bell a group of four men is visible, playing double reed instruments: two oboes in the normal size (treble in C), one longer oboe (probably tenor in F, with a curved staple) and one bassoon. The players are placed standing around a table, on the table two music scores are visible. The oboes are played with the right hand below, just as most players now prefer to do. The tenor oboe and the bassoon are played with the left hand below. This is especially interesting in the case of the bassoon. All Dutch oboes I have seen are made symmetrically, with two D#-keys and with all fingerholes in a straight row. So the instruments can be played either with the left, or with the right hand on the lower joint. The Baroque bassoon is not symmetrically made and the normal way to play the instrument is with the right hand below. Playing with reverse hands is more or less possible on 3-keyed bassoons (with a F-key on the front of the boot joint, corresponding with a C-key of a Baroque oboe, and a D- and Bb-key on the back side of the bass joint, but I think that it is not easy to do so because of the oval shape of the fingerholes, with the long axis of the oval transverse on the fingers. With a G#-key (corresponding with the D#-key of a Baroque oboe in C) added, playing with reverse hands is impossible. There seems to be an octave bassoon by the German woodwind maker Johannes Scherer Jr. (1664-1722) with two G#-keys, for left and right playing (Bellerive Museum, Zürich, Switzerland).

However, the bassoon on the Beukers oboe is not played with reversed hands, the whole instrument is reversely carved, in a mirror image. The player covers the holes of the wing-joint than on the normal way his right hand. I have never seen bassoons made so, and it is the question if the wood-carver (who was likely not the woodwind maker himself) made a mistake or "copied" indeed a reverse bassoon.

- About the fourth key on a bassoon: it is said that the first picture of a bassoon with a fourth key (G#-key) is the bassoon on the trade cart of Rijkel (ca. 1705). This instrument is just as the V&A Beukers-oboe reversely engraved and is also turned in the old fashioned way, with many ornamental rings on the bell-joint. Later Baroque bassoons have bell-joints much more smoothly turned.

- Another remark about left and right playing on Dutch woodwinds: most Dutch recorders (made in three joints: head, middle and foot joint) bear a makers mark on the foot joint, not in line with the fingerhole of the foot joint, but in line with the six fingerholes of the middle joint. And: in that position the lowest fingerhole is placed on the right side, so you have to play the recorder with your right hand below. Of course it is possible to play the instrument with the left
hand below, but then you have to turn the foot joint so far that the stamp is almost on the back-side. The only exception on this rule are three recorders stamped W:BEUKERS with a crown. These instruments have a foot joint stamp just below and in line with the fingerhole of the foot joint.

- There is perhaps one real asymmetrical aspect on some Dutch oboes: on the fingerholes 3 and 4, double drilled, allowing to play f\# and g\# without fork-fingering. The small double drilled holes are placed either at the same height, or with the right hole somewhat lower. But never is the left hole placed lower. Also on the V&A-Beukers oboe the right of the two small holes (seen from the position of the player) is placed somewhat (0.1 resp. 0.5 mm) lower on the instrument.

Back to the carved details on the V&A-Beukers oboe: on the back of the bell of the Beukers-oboe a man and a woman are visible, dancing to the music of a smaller person who is playing a violin. All the woodcarving of the playing and dancing persons is done very accurately, with sharp details e.g. of the instruments and also of the clothes (presumably in Dutch style, between 1690 and 1700) of the players and dancers. Eric Halfpenny wrote about this oboe and the woodcarving in the Galpin Society Journal (Vol.X, 1957, p.60-62).

Halfpenny saw that the stamp of W.Beukers was not original, the remnants of an earlier stamp are clearly visible on all joints. The old scroll is inside its lines just slightly smaller than the new stamp of Beukers (12 mm); outside it is with 12.5 mm just slightly longer. I have never seen scrolls on stamps of W.Beukers. (Scrolls on Dutch woodwinds are found on the instruments of Haka, his pupils Rijkel, Van Aardenberg and Steenbergen, and further on the instruments of Robert and Willem Wijne, and on one tenor oboe by H.Richters).

Beukers stamped his name almost straight, in a slight curve (in fact I have seen two types of curves, with two different radii). Below the stamp on most instruments a broad Fleur de Lys (double lily) is stamped. On one alto recorder (Haags Gemeentemuseum) and two voice flutes (in private collections in the Netherlands) is instead of the lily a crown visible, in top of the name. On one of the three oboes in The Hague a deer is stamped, very much resembling the deer on the instruments of Abraham van Aardenberg. The Fleurs de Lys are also stamped on the oboe of the Victoria and Albert Museum, and on the top and middle joint also a crown is stamped, not very clearly and sharp, but similar to the crown on the alto recorder mentioned above.

On the moment we don’t know the differences between the stamps of father (1666-1750) and son (1703-1781) Beukers. Both had the same initials (W). One oboe (Ea 1017-1933) in the Haags Gemeentemuseum is made by the father, because the year 1704 is engraved on the pad of the lower c-key. The stamps on this instrument are very similar to the two soprano recorders and slightly different from the stamp on the alto recorder, all in The Hague. The stamp on the oboe in London resembles as far I can see most the stamp of the soprano recorders in The Hague, but the crown is similar to the alto recorder. Also: it is difficult to say who made which instrument. Actually, it should be better to have all instruments together for a better comparison. It is also interesting to see the differences between the Fleurs de Lys of the Dutch woodwind ma-
kers: in fact there are two types of Fleurs de Lys: a high and a lower (and broader) type (see illustration). It is not always easy to compare these stamps, because the quality of the stamp depends much on the wood (softer or harder) of the instrument.

Back to the scroll on the oboe in London. The size and shape of the scroll is similar to the scroll of Richard Haka and the slightly longer scroll of Rijkel. But: the oboe in the V&A-Museum instrument is made by somebody else. On the middle and top joint the last two characters of the old stamp are visible: in lower case italics: "...en" or even "...ren". The first letter is also more or less visible, it is a capital with a complicate shape, with many curved lines and only partly visible, so I can't tell you what it is. Perhaps infrared photography can bring us more details of the old stamp.

I have never seen stamps on woodwinds (of dutch or foreign origin) with this type of "written" italic letters. The name must be rather short, between 5 and 8 characters long. The last two letters: "en" or "ren" could very well be the end of a dutch, of perhaps of a german name. Some short dutch names on early woodwinds could be possible: WVBUUREN (W. van Buren) for instance was a woodwind maker in the early 18th century, and I saw an interesting oboe with some deviating details he had made (the oboe was sold on the Mengelberg auction in 1952, and is now in a private collection). But the stamp WVBUUREN on that instrument was quite different, very simple, all upper case, without scroll etc., just as I typed it here. Who else could be the maker?

Back to the instrument. The keys are made of silver, but I didn't like the whole appearance of these keys. The design and the finishing are not as good as on many keys I saw on the instruments by Haka, Rijkel, Steenbergen, Van Aardenberg, Beukers, Beuker, Richters etc. The spurs of the keys have a rather strange shape, the wings and pads are somewhat irregular, it is all to me not very well "in balance" and not convincing. The keys show some tool marks, probably caused by a pair of pincers, used to fix the keys at a polishing procedure.

About the profile of the oboe: the top joint is rather slender, with a short finial; the bell to the bell is on the contrary very wide. This details can be seen on more dutch oboes! The key rings (with the grooves for the c- and d♯-keys) on the middle joint are rather small and low. The tenons of the oboe are remarkable short. The small ivory socketings are turned with rather sharp beads and V-grooves. I didn't see that before. The also small ivory ring at the bell rim has a smoother and more rounded profile. In fact, on an oboe with such beautiful woodcarving, these small ivory rings are not convincing to me. If I should make a copy of the oboe, I should leave them out.

The wood of the instrument is European boxwood, I suppose, and not stained, now having a light brown colour (surely not reddish brown as some colour photo's I saw in a publication would suggest). But: I saw unstained instruments (especially some oboes made by Steenbergen) that keept their original light yellowish colour much better.

About the bore: the bore of the topjoint is on the narrowest point (the transition from the staple or counter bore to the "main bore") very wide (6.8 mm). Such a wide bore I saw only on some Rich-
ters oboes, or 18th-century Richters-imitations (Haags Gemeentemuseum, The Hague). In the bore one or two "reamer ends" are clearly visible, I think that the bore was made with at least three different reamers. The bore of the middle joint has a more regular (but not very smooth) conical profile, showing some concentric reamer marks. The bore of the bell is quite normal: smooth in the turned section, showing some concentric reamer rings in the reamed part (up to the socket). The lip of the bell rim is short and rather thin.

Some fingerholes are drilled at an angle: 1 and 4 up, 3 and 6 down, all quite normal (but most Beukers-oboes I saw have straight drilled holes). All holes have rather sharp corners (not rounded) and are only slightly undercut. In the table the most important measurements are given, the drawing of the three joints gives some extra information to understand the table. I hope I have given just enough measurements that you can compare the V&A-oboe with other instruments. Anyone who wants to make an exact copy has to make additional measurements (and many photos!) himself or herself.

Conclusion: the "Beukers-oboe" in the Victoria and Albert Museum is an interesting instrument, with very nice and interesting woodcarving. But the oboe is in other details less convincing (keys, bore), showing some "dutch details" in shape and design, but also different from the oboes by the well known makers (Haka, Rijkel, and -of course- Beukers).

I think that the instrument was made in the late 17th or early 18th century, very likely by a Dutch maker, who is so far unknown to us. The oboe was not made by one of the great makers of that time (Haka, Rijkel, Boekhout). In the first quarter of the 18th century there was such a great production in woodwinds (especially oboes and recorders) by many makers in Amsterdam that it doesn't surprise me if there were some amateur- or lesser known makers who tried to join in the successes of the big names.

I must return my thanks to Mr. Yorke of the staff of the V&A museum for giving me the opportunity to see and measure the oboe, and to Mathew Dart, the bassoon maker in London, who have read this article and made some corrections.
W. Beukers-Oboe, Victoria and Albert Museum, London (UK)
Code: 808/69

Some measurements, in mm.

L = Length
D = Diameter
l = left; r = right (seen from the position of the player)
F = Fingerhole

Top joint

L joint without tenon: 210.5
(+/- 0.5 mm); L tenon: 19.1
F-1 (to shoulder): 73.5
F-2 (idem): 41.1
F-3l (idem): 7.3
F-3r (idem): 7.2

Size of the holes (+/- 0.1)
F-1: 2.8 x 3.2
F-2: 3.7 x 3.9
F-3l: 3.0 x 3.1
F-3r: 3.0 x 3.0

Bore top joint (from reamer entrance)

D (+/- 0.1 mm) L (+/- 1 mm)

<table>
<thead>
<tr>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0/2</td>
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<td>11.8</td>
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<td>11.4</td>
<td>24</td>
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<td>8.6</td>
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</tr>
<tr>
<td>8.4</td>
<td>132</td>
</tr>
<tr>
<td>8.2</td>
<td>134</td>
</tr>
</tbody>
</table>

Bore from staple entrance

D
L

Middle joint

L joint without tenon: 216.5
L tenon (to bell): 23.0
L socket (to top joint): 19.5
D socket: max. 18.7
F-4l (to socket corner): 46.2
F-4r (idem): 46.7
F-5 (to lower shoulder): 130.6
F-6 (idem): 97.2
F-d#l key (idem): 55.1
F-d#r key (idem): 55.0
F-c key (idem): 21.7

Size of the fingerholes
F-4l: 4.0 x 4.1
F-4r: 3.9 x 4.1
F-5: 5.1 x 5.1
F-6: 4.4 x 4.7
F-d#r: ca. 4.4 x 4.4
F-c: ca 6.8 x 7.2

The keys were not removed, so all key-holes data approximately.

Bore middle joint (from reamer entrance)

D
L

<table>
<thead>
<tr>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.1</td>
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</tr>
<tr>
<td>17.0</td>
<td>10</td>
</tr>
<tr>
<td>16.8</td>
<td>15</td>
</tr>
<tr>
<td>16.6</td>
<td>23</td>
</tr>
<tr>
<td>16.4</td>
<td>27</td>
</tr>
</tbody>
</table>
### Bore middle joint (continued)

<table>
<thead>
<tr>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.2</td>
<td>44</td>
</tr>
<tr>
<td>16.0</td>
<td>hole of c-key</td>
</tr>
</tbody>
</table>

Some diameters measurements of the profile of the oboe

**Top joint:**
- Finial end: 23.3/6
- Baluster (max.): 24.6/9
- Top of column: 15.7
- At F1: 16.7/17.0
- F2: 17.7/19.1
- F3: 19.8/20.0
- Lower end of column: 21.6
- Tenon: 17.9 to 17.5

**Middle joint:**
- Socket corner: 25.1
- Socket bulge (max): 30.3/31.0
- At F4: 20.7/8
- F5: 20.8/21.4
- F6: 22.1/23.5
- Upper key ring (max): 29.9
- At d#-key hole: ca. 25.5
- Lower key ring (max): 31.4/5
- At c-key hole: 26.1
- Shoulder ring: 32.4/5
- Tenon: 25.5 to 24.1

**Bell**
- Socket corner: 33.0/2
- Socket bulge (max): 41.2
- At resonance holes (waist): 27.7/28.4
- Bell rim (max): 67.4/68.0

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Stamps on W. Beukers Oboe (VrA Museum)

Crown only on upper and middle joint

New Beukers stamp over old scroll (bell)

Reconstruction original stamp (upper and middle joint)

Fleurs-de-Lys on Dutch Baroque woodwind instruments (on different scales)

All instruments in the collection of the "Haags Gemeentemuseum", The Hague, Netherlands

R. Hake Oboe Ea. 6.1922
W. Beukers Soprano Recorder Ea. 270-1933
C. Rijke Oboe Ea. 6.x.1952
W. Beukers Oboe Ea. 1-1933
W. Beukers Oboe Ea. 1-1992
Steenbergen Oboe Ea. 1-1952
v. Aardenberg Oboe Ea. 1-1952
v. Aardenberg Oboe Ea. 1-1993

All measurements ± 0.1 mm
Medieval Glues... sounded well!

Though I had not yet the intention to publish separately some of the data collected for my History of Glues, the communication [1167] of E. Segerman in the last Q. forces me to break the silence. The picture a given scholar has from the Past depends, first upon the historical documents he actually studies and secondly upon his understanding of those early sources. As Ephraim obviously did not make use of the same sources (the references of which are lacking in his comm.) as those I'll quote in this article, my picture of medieval glue-technology in the woodworking crafts in general and more specifically in instrument building will be different from his own. We shall see that a generalized glueless-technology theory cannot be upheld.

"We are generally aware that medieval woodworking traditions rejected any reliance on glue to keep components of an object together" (E.S.). This statement embodies only a part of the early reality, only one facet of the historical polyhedron.

From the history of woodworking guilds - and this can be observed in many medieval towns in Europe - we know that it was during the 14th century, that the boundary between carpentry (in our modern understanding) and (more recent) joinery became more precise. To avoid the traditional problems of competition between these two categories of craftsmen who at the beginning employed the same tools - hence were able to fulfill the same works - the authorities of the towns in question choose a practical and effectual solution : thereafter the use of glue was strictly forbidden to the carpenters (together with the use of planes). [More on that point and the references in my work in progress].

But such specific rules applied within the joiners craft itself, where three possibilities regarding the use of glue can be encountered :

a) whether glue was well suited, hence allowed or obligatory (see below).

b) in some specific cases, glue was forbidden to joiners, who had to use solely wood-pinning technology. We hear about that in many early guild rules giving information relating to the "visible pinning" : For example "Que nul ne face huisset de chesseeit sans gougons non decouverts et collez à colle de morue" (1), "blind pinning" and gluing were forbidden.

c) a mixed technology was obligatory in some other cases, i.e. the concommitent use of glue and pinning : "que chacun panneau ait gougons, selon la longueur du bois, avec la gluz..." we hear in 1382 among the specifications given by the authorities to the Parisian joiners who were making the wainscoting in 14th century houses (2).

Now we see that the glue-prohibition - Ephraim's groundstone for his construction - is applicable neither to all craftsmen who could make use of this very old means for joining wooden components together, nor to all wooden artefacts occuring during the centuries in question. The situation, as
it was, does not allow us to speak of an universal medieval "glueless technology" in that field. Each case has to be taken specifically and the musical instrument makers could and did use glue much earlier than imagined by Ephraim, as we shall see below.

No bones...

As I'll show in my work announced above, the Middle Ages knew more than one kind of glue. "The high strength glues readily available" actually were "composed of gelatine extracted from animal tissue" (E.S.). Yes ! But among those, "bones" (E.S.) were quite out of question. We have to wait until the 17th century to see the first experimentings to extract glue from bones. Our modern bone-glue is a byproduct of the steam-engine civilisation. Recipes for bone-glue making only appear in the treatise and recipes-books at the end of the 18th century.

Some glues used in medieval times were the same as those used in Antiquity. Different sources inform us that glue was already known to Egyptian, Greek and Roman craftsmen.

Antiquity.

A. Lucas : "The earliest example [of glue] known to the writer is from the Eighteenth Dynasty (about 1500 B.C.), of which period a specimen found by Dr. Howard Carter has been examined. This was in the form of a rectangular piece 13 centimeters (5.1 inches) long with a square section of about 2 centimeters (0.79 inch) each way, that had manifestly been cast and, except that it had dried and shrunk, it could not be distinguished from modern glue, to all of the usual tests for which it responded. (...) glue was present on many of the objects from the tomb of Tut-ankhamūn, where it was employed to fasten wood together and to fix ebony and ivory veneer and inlay in place (3).

From this excerpt we cannot infer which kind of glue was discovered by the archeologist in Egypt. What had been the raw material? From writings of Plinius (1st century A.D.) we learn on the contrary that two kinds of glue were in use in Antiquity:

the one made from the skins of bulls (the Greek Taurokolla, the Latin gluten taurinum)

-and the second sort made with some parts of fishes: Ichtyokolla, a name still in use in the 18th century.

It is not clear whether the Greek Xylokolla (literally "glue for wood"), Latin gluten fabrile, both referring to the glue specifically used by craftsmen, applies to the taurokolla or to the fishglue.

Antique craftsmen had made some good observations and collected some experiences with wood that had been glued. For example, the Greek writer of the 4th century B.C., Theophrastus gives precise informations for our topic, informations he obviously gathered from the craftsmen of his time. In the chapter dealing with "the woods suited for carpenter's various purposes" we read : "The wood of the silver-fir may be called the strongest of all. But for the carpenter's purposes fir best takes glue because of its
open texture and the straightness of its pores; for they say that it never by
chance comes apart when it is glued. (...) However oak-wood does not join
well with glue on to fir or silver-fir; for the one is of close, the other of
open grain, the one is uniform, the other not so; whereas things which are to
be made into one piece should be of similar character, and not of opposite
character, like wood and stone. (4) Two varieties of wood have two different
behaviour in climatic changes, hence the appearance of tensions when joined
together. More than two thousand years old facts, not unknown to whom is
working today with that "noble material"!

The Middle Ages

Many studies in different fields of history of arts or technology
show how strong the survival of Antiquity lasted on into the Middle Ages.
The art of joining by means of glue also did not disappear.

A good source that can inform us about the existence of
procedures used at a given time is the language of daily use, all those words
or typical expressions used by an epoch, collected and written down in early
"Vocabularies". Thomas Wright, who published in 1884 a series of such
manuscripts kept in British Libraries comments: "It was a common practice
with the Anglo-Saxon teacher to add in the Latin book he read in the schools
an interlinear gloss, explaining the more difficult words, the meanings of
which he was perhaps afraid of forgetting himself. Some one of them, in the
glossary here printed, has taken evidently from several of these glossed
manuscripts, the glosses, and placed them in alphabetical order, for greater
facility of reference."(5) A closer look at some of the early sources printed
in Wright's book, show the evolution of the terms for glue between the 11th
and 13th centuries.

In a Glossary of the 11th century, the Latin "gluten" is translated
"lim". In the same 11th century, the term "glutinatum" is given "tosomne
gelimed" (the modern German "zusammen geleimt" = "glued together"). That
the expression "gluten" was not a general term covering all what could join
together (also solder or mortar for example) is enlightened by the expression
that follows "gluten" in the first list: cementum = "lim to wealle" (glue for
the walls, i.e. mortar). A distinction was clearly made by the medieval
teacher...! Four centuries later, a 15th century glossar renders "glutinum" by
"glewe" (hence the modern English "glue" and the modern German "Klebe").
That the same word could sometimes have more than one meaning, we hear
it from another source, published by Baxter, where a 13th century list gives
"gluten" as "oxgall"(6).

There remains the following question: what kind of glue was in
daily practice at that time? The two sorts we met in Antiquity still existed.
But the Middle Ages seem to have added a third kind of glue, not referred
to by any author of Antiquity (that is no proof that it actually did not exist):
cheese glue, "gluten casei" [casein glue].

The well known medieval author Theophilus Presbyter wrote his
treatise in the first half of the 12th century. Chapter XVIII of this
encyclopaedic work which has survived in about 24 manuscripts kept in
European libraries (7), is devoted to the art of making skin-glue and glue
from antlers: "De glutine corii et cornuum cervi". Chapter XVII gives a
precise description of how to make casein-glue.
More interesting for our topic here is his remark, that wooden panels (for the altar-pieces or other doors) joined by means of casein-glue will be unaltered neither by humidity nor by heat: "nec humore nec calore disjungi possint". The Ancients knew (by long observation as usual...) of the properties of the "animal-glue" mentioned by Ephraim and, according to Theophilus, they had detected the higher resistance of casein-glue against changing climatic conditions. But what was the exact degree of this difference? Would this also change the conditions of parts of Ephraim's reasoning?

Though we do not know if casein-glue had been used, it is interesting to quote from a fine work published by Jacqueline Marette who made a thorough study of a great number of the wooden panels used by early painters. She was impressed by the high quality of medieval flat joined panels: "Le Musée d'Art Catalan de Barcelone offre de nombreux témoins de revers absolument intacts. (...) Les plus anciens témoignages d'assemblage à joints vifs collés, que nous y avons rencontrés, appartiennent à l'école catalane du XII° siècle". Testimonies contemporary of Theophilus (§).

The valuable quality of the "glutinum casei" explains the longevity of its use by joiners. Casein-glue for joining wooden panels on which the painters could put their work in the 12th century, as described by Theophilus (and Jacqueline Marette) did not disappear in the Renaissance. The document found by the Italian scholar (and, following the exact term of his time: antiquarian) D. Maria Frederigi in the Archives of the Duomo of Treviso and published at the beginning of the past century confirms this statement. On March 7th 1520 "l' soldo" was given to Mistro Lio who made the panel for the principal altar-piece of that church, to buy cheese to make the glue for fastening the planks of it: "Dati a Mistro Lio che facca la pala per comprar formajo per far la cola da incolar le tavole de dita pala". (§). At least, a five centuries old craftsmen-tradition!

Glue trading

We stay in Italy but two centuries earlier. In the 14th century, different kinds of glue were common trade items. Francesco Balducci Pegolotti is the author of an invaluable source for the trade history in the Trecento: "La Pratica della Mercurata". "Whenever he may have compiled the book, and the writing itself was no doubt a lengthy operation, certainly embodied in it material collected over a large part of his working career, material, in other words, which would refer back to various dates in the period between 1310 and 1340."(10) When speaking of the trade with Alexandria, he mentions "colla". At the end of his work, he lists alphabetically all "nomi di spezierie" known to him and available on the market of his time. Among them, three kinds of glue: "Colla fiorentina, Colla bolognese and Colla di pesce". The two first are named after their town of origin, as was the case for so many trade items in early times; we ignore all about their characteristics centuries later, though the Ancients knew exactly what had to be understood on a technical level behind the specifications of a local provenience. The third kind is fish-glue. Finally Pegolotti, when describing the characteristics of some other trade items, explains that the different kinds of "Draganti" have different colours, according to their origin; to define the colour of one of them, Pegolotti makes the comparison with "colla di pesce": "giallo cetrino scuro in colore di colla di pesce o uno poco più chiaro...". Fish-glue was well known from Antiquity onwards and not only in Italy.
Also in 14th century England fish-glue was in the hands of woodworkers. Salzman (11) is well informed: "So in 1348 we have 18d. paid 'for 100 soundes for making glue for the carpenters', and four years later 3s. 'for 100 greylyngsones for joining boards'. In 1358 glue (gluten) was 4d. the pounds, but 25 'fisshesounds' cost 2s., which seems disproportionately expensive. At Moor End payments were made in 1366 'to Brassingbourne, fisherman of Northampton, for 60 sounde of hard fish for making gleu 18d. And to William Glovere for paccheis (i.e. patches of leather) for the same - 2d." We meet again the two traditional kinds of raw material. And finally Salzman was lucky to find a reference of the use of the glue-pot "which makes a rare appearance at Westminster in 1386, as 'olla plumbea pro glutine'".

If different kinds of glue were available in great quantity, we may guess that it was produced by a specialized craft. Those artisans probably may be indentitied with the "glutinatores" often mentioned in early Vocabularies among the other medieval "opifices" (crafts), even since the 9th century.

Musical Instruments.
From the quoted sources, no doubt may exist that different glues were available during the Middle Ages and that gluing wood was far from a rare undertaking. Further researches will nevertheless be necessary to find out the actual occurrence where glue was a) obligatory, b) forbidden or c) used together with pinning (the three cases alluded to above).

As musical instrument makers were also working with wood (in many towns they belonged to the joiners-guild), we may ask the early sources if it could have been possible that these specialized craftsmen did encountered the one or the other of the three cases enumerated under a) b) and c).

The first testimony stems from 1420. The French "antiquarian" Victor Gay published a century ago an excerpt from the accounts mentioning the expenses for the organ of the cathedral of Troyes (in Champagne...). There we can see that 30 soldi were payed to a grocer of the town for 3 pounds of glue of German origin: "A Guiot Angelin espicier, pour 3 liv. de cole d'Alemaigne". And further, fishesounds are mentioned in the same relation: "pour 25 peaux de morue à gluer trapens esd. orgues..., au pris de 12d. la pièce, valent 15s." What had been the exact use of these two kinds of glue in that organ? (12)

The second sound comes from 14th century Italy. In his Libro dell' Arte, written around 1390, Cennino Cennini indicates the use of glue by lute-makers. Much more, from the remarks he makes in his Chapter CVIII ("A che modo si adopera la colla di pesce") and CIX ("Come si fa la colla di caravella...") we learn that lutes could have been assembled either with fish-glue or with skin-glue: "A struggerla, è buona e perfettissima a incollare liuti, o altre cose gentili di carta o di legname o d'osso", for the fish-glue. For the other sort of glue: "Ed è buona colla da legname e da molte cose (...) e in che modo in gessi, in temperar colori, far liuti, tarsie, attacar legni, fogliame insieme ..."(13)

A third testimony is found in the above mentioned work of Theophilus. His Chapters LXXII "De Domo Organaria" and LXXXIII "De Conflatorio" describe respectively the construction of the windchest and the connecting piece of the bells of the organs in the 12th century. After all pieces are ready, the two planks, which form the windchest will be glued together with casein-glue "His ita dispositis conglutinentur haec duo ligna, quae domum organorum conficiunt, glutine casei;" and the wooden pieces at the outflow of the bellows are also glued together by means of casein-glue "Sicque conglutinabis ipsa ligna glutine casei..." and further: "ipsum lignum glutine casei firmabis" (14). Here glue was absolutely suited for a question of airtightness, case a) of our above given classification. Other pieces in turn were (obligatory) joined by visible pinning: "apparent clavorum capita superius" (14).

We have here once more a good example of how long Experience brought the Ancients to the point were the right material connected with the right procedure permitted to attain the desired result, thus satisfying one of the greatest and most important criteria of all early guild regulations: the high quality and huge longevity of each work made by human hands.
Can we still speak of "any medieval woodworking traditions that rejected any reliance on glue to keep components of an object together" (E.S.)? This seems not systematically apply to the medieval music instrument makers. The sources teaches us that glue-using technology was technically not a problem. They show us also that each case is an individual case either of glueless technology or of glue-using technology, and both may occur on one same instrument.

The present excursion into glue history throws a different light onto Ephraim's article; maybe some of the processes described there actually had been in use. The medieval instrument-maker could have, in specific technical or other possible cases, recognized the superiority of a glueless solution and consciously decided not to use glue. In other cases, he could not do otherwise than use one of the different kinds of glue available at his time. He was master of the procedures inherited from... his master!

Which parts had actually been glueless (our case b) and which had actually been glued (cases a) and c) on the different instruments mentioned in the following verses from the 13th century Romance of Thomas of Erceldoune? (15)

XLVII

Harpe and fethill bothe þay fande,
þe geterne and als þo þe sawtrye,
Lutte and rybybe bothe gangande

"Called also The Rhymer, Thomas occupies much the same position in Scottish lore as Merlin does in that of England, but with some historical foundations. (...)During the 14th, 15th and 16th centuries, says Chambers, to fabricate a prophecy in the name of Thomas the Rhymer appears to have been found a good stroke of policy on many occasions. (...) The reputation of Thomas as a prophet is connected with the date of 1285 and the death of Alexander III predicted in that year to Patrick, eigth earl of Dunbar"(16). Unfortunately Thomas the Prophet could not predict that in the year 1993, researchers of the FoMRHI in Oxford would have been interested in knowing more about the technology of the instruments listed in his Romance....

Notes and Bibliography:


7. Theophile, "Essai sur divers Arts", publié par le Cte. Charles de L'Escalopier, Paris, 1843. For a good discussion on the 24 extent manuscripts see: Rozelle Parker Johnson, "The Manuscripts of the Schedula of Theophilus Presbyter", in Speculum - A Journal of Medieval Studies, Vol.XIII, 1938, p.86-103. This medieval general survey of craftsmen practice awaked interest till the 17th century, as testify copies made of it at that time. After a century of silence, the German author Gotthold Ephraim Lessing discovered a Theophile-manuscript in the "Herzoglichen Bibliothek zu Wolfenbüttel" and published it in 1781, followed by other scholars during the 19th century. The more recent publications known to me are:
   - Lipinsky, A., "Oreficeria, argenteria e gioiellaria... La diversarium artium shedula di Theophilus", Ravenna, 1964.
   - See n.14.


P.S. Denzil Wright informs me: "according to Klaus Martius of the Germanisches Nationalmuseum where the TRASUNTINO 'Clavemusium omnitonum' was restored, this harpsichord was glued using casein glue. Klaus and I also found casein glue in the 1697 Grimaldi harpsichord".
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* in left hand margin - change of address or other change

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