FOMRHI Quarterly

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REVIEWS

FELLOWSHIP OF MAKERS AND RESTORERS OF HISTORICAL INSTRUMENTS
Hon. Sec. J. Montagu, c/o Faculty of Music, St. Aldate’s Oxford OX1 1DB, U.K.
As usual in the January Bulletin, a happy new year to a minority of our members — the rest will read this greeting as and when they get round to renewing their subscriptions.

Margaret and I thank you for all your greetings and good wishes.

Margaret has asked me to say a few things for her:

a) if you wish to be formal when writing to her, she is Mrs, but she is quite happy to be Margaret Crowe; do please note that she is not a manuscript.

b) try to get her address right; at least one renewal went over the road and stuck there until the people in that house came back from holiday. It does help to put Margaret Crowe on the envelope as well as FoMRHI.

c) try to remember next year (and I'll try to remember to remind you, though it's clear enough on the form) to make cheques etc payable to FoMRHI, not to her.

d) put the right postage on the envelope.

I gather from Cary Karp that we have been guilty of putting the wrong postage on. Would those members in Europe who pay for air mail please note that what should be on their envelopes is the two words ALL UP; there shouldn't be anything about printed matter or reduced rate. If they get an envelope with printed matter on it, would they please tell Enzo (his address is in the List of Members) straight away so that he gets it right next time. (His surname is Puzzovio in case you've forgotten who does the mailing). I'm not sure what ALL UP means, but it's what the Post Office says should be on letters to make sure they go by air mail instead of rowing boat. One other check, of course, is the postmark if it's legible. Air mail should not take more than a week to anywhere; surface mail, even just across the Channel, seems to be three weeks minimum; it can take a week to get across Oxford.

LOST MEMBERS: Q.25 hasn't reached Jane Hutber of Telford and Per Sabelström of Uppsala. If anyone knows where they now are, would they please let me know, and if they happen to bump into either of them, please tell them that the subscription for 1982 is the same as last year.

INDEX: You will see that one of the Comms herewith is an Index to the 1981 Qs. We owe this to Rod Jenkins who spent so much time searching through for something that he remembered reading that, having made an index of viol-related articles, he decided to do the whole job. He would be willing to do the whole job if people would welcome the idea, and asks for any comments that might improve the one that he's done. He has omitted reviews and book news because he was uncertain whether author's name or first word of title, or what would be best, and would welcome comments on that also.

FURTHER TO: Bull.23, p.6. I wrote a note about the Korg WT 12 Tuning Meter. Geoff Burton says that he's had one for about 18 months and is very impressed with it. He says: "I must admit that when I first got the meter, I felt a bit embarrassed and even slightly ashamed. It seemed an admission that my ear was not all it might be. A very foolish attitude I now feel. In fact, I have found that it has done a great deal to improve the 'fine-tuning' of my ear. I
certainly would not have believed the improvement if it hadn't been me. And then, of course, it has enabled me to tell my wife she's blowing too hard - and prove it! (Sometimes, anyway!).

I have also found another use for it; by combining it with a pocket calculator, I can establish the exact pitch of instruments in the Bate and my own collection, so that for those which I and visitors have worked on, instead of approximate statements like 'a semitone below modern pitch', we have exact Hertz figures. Geoff also points out that although I said that it emits tones over five octaves, it will measure over seven octaves. He and two other members sent me xeroxes of the English instructions, and I'm grateful to all of them. Can I offer anybody a mains unit for one for 110 volts? That's what came with mine, but I've managed to replace it with one for English voltage, so it's going spare.

**ARTIFICIAL IVORY (SEE BULLETIN 24 PAGE 9)**

a) No, the fakers of Netsuke's cannot help us with artificial Ivory unless one is copying an original item exactly. Their process is to take a mould from the original and from it a cast is made - the grain colour being added to the surface only.

b) If sufficient interest is shown, I can arrange for a manufacturer to produce a batch of GRAINED IVORY "Acetate" type plastic. This would be the same as that used on better quality piano keys, but with the advantage that the size of slab/block would be more suitable for turning. Contact Daniel H Bangham, Woodwind Instrument Repairs, 1 Felton St, Cambridge. Tel. 64702.

**Bull.25, p. 6:** Graham Wells says that a comment of mine there implied that: "you can only buy instruments at auction if you are fortunate enough to actually be in London or New York. In fact we get commission bids from all over the world, including Australia. I realise that the one factor that might deter people from bidding is the inability to examine the instruments, but I am always very happy to give a critical condition report either through the nearest Sotheby office, or if necessary by cable."

**JM adds:** I'm not sure the extent to which people realise that instruments still turn up in the sale rooms, nor to what extent sale catalogues are available overseas. If members are interested, they can always ask Graham for a sample catalogue, to see what sort of things turn up (his address is in the Members' List), and the other two London auction houses, Phillips and Christies, would also probably help in this way. There are other places too, of course, but I think both less often and with fewer instruments than in London. At least, the only other catalogues I see are the New York ones which seem only once or twice a year, instead of monthly. Perhaps some other members can tell us what sales are in France, Holland and so on. However, one point worth remembering is a comment that Horace Fitzpatrick made in the introduction to a concert here recently: well made modern reproductions can be nearer to the originals when they were new than the originals are today. Nobody in the 17th and 18th centuries was using instruments two or three hundred years old, and age does affect the sound.

**Comm.368:** John Rawson writes:

It seems to me that this comment has done much to confuse the whole problem of how to differentiate a Spinet from a Virginal. The necessity to refer to parts of the instrument that are not visible, or to very minor differences in the layout is totally superfluous.
Whatever you care to call them there are two basically different layouts - and this comm does not point them out. Layout A has the Bass strings at the back, and the bass keys are therefore usually longer than the treble ones. Layout B has the Bass strings at the front and here the treble keys are longer than the bass ones. Most people I think call 'A' a Spinet and layout 'B' a Virginal but certainly this point is open to discussion. The two layouts however are quite distinct and there can be no intermediate or vague versions of them.

Bull.373: Paul Hailperin writes: "The painting which Buckland mentions, 'The Cat's Dancing Lesson' is certainly the same as the one I mention under the Dutch title 'De Dansles' in my Comm.32. As I pointed out in that Comm, there does exist in the Vienna Collection (Kunsthistorisches Museum) an instrument of very remarkably similar appearance. I 'copied' that instrument for the express purpose of performing Monteverdi works. Experience confirmed its suitability. The Vienna instrument also is not dated, but its environment suggests that it is pre-oboé. In his Comm.272 Buckland goes into pirouettes and lip-control. In this respect one should consider also the pirouette in Vienna, KHM (see my measurement in 'Some Technical Remarks on the Shawm and Baroque Oboe', Schola Cantorum Basiliensis, 1970) (the Nuremberg pirouettes mentioned in above turn out to be non-original or not in original state). On the difference between shawm and oboe, it would be interesting to compare the ratios side-hole diameter/bore diameter at the same point. Yes I know...I'm one of the people who, with a little time, could do this."

JM adds: I hope that Paul will find the time, and that others, perhaps, will do so as well. The division between these instruments is a very grey area, and not only in Europe.

GRANTS AVAILABLE: The following comes from the Crafts Council:
The Crafts Council's Conservation Section will be extending the terms of reference of its grant schemes in 1982 to include help for those establishing or developing independent conservation workshops. Pending the possible introduction of a loan scheme, a new grant scheme has been introduced. Applications are, therefore, now invited from private workshops needing financial assistance, for instance, to help with the purchase of specialised equipment which would specifically contribute to the range of work undertaken. The funds available in the current financial year are limited and it is unlikely that individual grants in excess of £1,500 can be awarded.

FOR FURTHER INFORMATION PLEASE CONTACT THE CONSERVATION SECTION, CRAFTS COUNCIL 12 WATERLOO PLACE, LONDON SW1Y 4AU; Tel. 01-930 4811.

MATERIALS AVAILABLE:
Do you need artificial Ivory? I have finally found a Manufacturer who will make a batch of "BEST GRAINED ARTIFICIAL IVORY" in a size that all instrument makers could use. The plastic is the same as used on quality piano keys and has until now only been available in sheet form. If at all interested please contact me as soon. Daniel H Bangham Woodwind Instrument Repairs, 1 Felton street, Cambridge, tel.64702.

JM adds that Daniel said in his covering letter that the maker will only produce if there's a minimum order of somewhere around 100kg, so it's only practicable if enough members are interested and if they all react speedily. If responses trickle in slowly, it may not work out.
A Couple of offers of WOOD: James Crabtree of 11591 Bridgeport Rd, Richmond, BC, Canada V6X 1T5 writes: "I am supplying very fine Sitka Spruce and Red Cedar in the dimensions (sic) required for most popular instruments including guitar tops, lute, violin wedges, viola, dagembas (sic), basses and harpsichord (sic) and ahrps of all sizes. All the wood is air dried to 7% humidity and has been quarter sawn. The production of the instrument blanks is in my control from the log and its handling to the final pieces to be shipped."

David Owen writes: "Supplies of exotic hardwoods (especially in smaller quantities) e.g. Boxwood, Ebony, Rosewood, Blackwood, Amaranth (Purple heart), Lignum vitae, Satinwood, Indian Laurel, Pan Rosa, Pan Bruna, Padauk (Indian and Andaman), Bubinga, Cocobolo, Tulipwood. Also good stock of English hardwoods. Also large range of woodturning tools and equipment. Available from: Alan Holtham, Woodturner, The Old Stores Turnery, 51 Wistaston Road, Willaston, Nantwich, Cheshire; phone Crewe (0270) 67010.

MUSIC AVAILABLE: The 1982 list has arrived from Archivum Musicum, Studio per Edizione Scelte, 50125 Firenze, Lungarno Guicciardini 9 r, Italy. It includes a large number of facsimiles of vocal and instrumental music, with a special list of flute music and guitar music, ranging roughly from 1600 to 1750 and costing from about 12,000 lire upwards.

BOUWERSKONTAKT: As I said I was going to, I went over to Holland in November as a FoMRHI representative at the Bouwerskontaktdag in Utrecht. I hope that it was useful to Bouwerskontakt; it certainly was to FoMRHI, as you'll see from the list of new members herewith. It was a very interesting occasion, with nearly 50 makers exhibiting and over 4,000 visitors in just the one day. I have written it up in detail for Early Music because there is one aspect which I think is very important and which is neglected in this country. Unlike the recent Early Musical Instrument Exhibition at the Horticultural Hall, where makers were exhibiting finished instruments to potential customers, the majority of makers in Utrecht were exhibiting instruments in process of construction, as well as finished ones, and were showing visitors how they made them; some were actually making on their stands. There was no sense of rivalry between exhibitors and visitors; the whole atmosphere was one of experienced colleagues helping new and aspiring colleagues, and there was a very friendly feeling throughout the school, where the day took place, and all day long.

Obviously we need the Exhibitions for makers and customers, but I think that we also need the contact days for makers and colleagues. The problem is, who can organise it, here and in other countries? It is the sort of thing that FoMRHI is for, but who would organise it? I've not got the time, at least not for a year anyway while I get lectures and the Bate Collection sorted out, and if it's to be in London, like most things in this country, it wouldn't be so easy from Oxford. I've wondered whether the new National Early Music Association (see next heading) might be interested, and we'll have to see whether they would. But who could organise such an event in USA, Canada, Australia, and so on? I would welcome thoughts on this from members, and indeed indications from members that they would take part or would, like John Storrs for keyboards, organise such events locally, even if like John's sessions, they are for only one type of instrument. If we want successors, and I assume that most of us do, this is one of the best ways to encourage them. It's also one of the best ways of discouraging the fly boys, by showing them how to do it properly.
One other aspect of that occasion is worth commenting on: it encouraged the cooperation between FoMRHI and Bouwerskontakt. We are working in very much the same area, and we have a very similar membership, some professionals and some amateurs, some experienced and some beginners. Several of our members have commented on the translations of articles from the Bouwbrief in FoMRHIQ and said how useful they've been. We would like more, if either the authors or Dutch-speaking FoMRHI members can oblige (do get in touch with the author through Bouwerskontakt or through the List of Members before starting to translate, in case there is already someone working on the same article) and we would encourage them to translate more of our material for the Bouwbrief, or, since most people inolland read English, just to reprint. We both provide an information service, and the more widely the information is spread the better.

EARLY MUSIC SOCIETIES: A demand from America has come for a network of US/GB Early music societies, promoters, performers, scholars, instrument makers, etc. This comes from Daniel Morgenstern, who is just starting the Northern Ohio Early Music Society. In fact what he is asking for does exist, though it has lapsed for a while, but the Early Music Register is being revived again by Christopher Monk, as Daniel should know if he reads Early Music. Chris has circulated everyone he knows of asking them to update their entries in the Register, and there seems to me to be little point in duplicating, or overlapping, what he is doing.

What there is room for is umbrella organisations, and there is one that has just started in this country. This is NEMA, the National Early Music Association, which was formed at a meeting just too late to make the last issue. It grew out of the Early Music Conference Committee that has run several very successful conferences since the original one at the Festival Hall. The idea is that it should serve a number of functions: an umbrella for all the smaller organisations and for performing groups and individuals, a pressure group to try to get more happening and to get money to allow things to happen, to foster public awareness, to create and expand educational activities, to lobby press and so on so that we get a fair share of critical attention at concerts and so on. There is a lot that can be done. At the moment we're hammering out a constitution (I say 'we' because I was elected on to the committee at the meeting which set it up; basically the committee consists of those who were on the Standing Committee of the EM Conference, plus a few others, especially those who spoke up at the meeting with some doubts as to how it should run or what it should cost). It already welcomes members, although the subscription rate has not been finally fixed; those of us who joined at the meeting all paid £10 on the basis that if the rate were higher we would be covered for the £10, and if it were lower, any excess would be credited towards 1983. If you are interested, write to Francesca McManus (in the List of Members) with your cheque etc, made out to NEMA, for £10. It sounds a lot, but a pressure group of this sort can't work on a shoestring if it's going to impress people; there has to be a printed letter head, not a rubber stamp, and literature has to be printed, not typed, and so forth. Only then can it impress such organisations as the DES or the Associated Board enough to make them realise that Early Music is just as much a part of the musical scene as Modern Music or any other.

And if it is to be really effective, NEMA has got to be able to speak for all of us — in other words, we've all got to join if we want our interests to be promoted, if we want kids to be able to learn our instruments, if we want our concerts reviewed, and so on and so forth.
REQUESTS: Reinhard Bachofen has recently bought a double flageolet and he asks whether anyone knows of a tutor, whether recent or antique but available, so that he can learn to play it.

Uta Henning saw this picture in an Early Music Shop advertisement; she asked them for its source and they referred her to Early Music; nobody there has recognised it and it is now going the rounds of the likely people. It reached me yesterday and I thought that I'd put it in here in case any of you can give Uta the reference.

Olov Gibson would like to know more about the finger technique of playing the six-stringed medieval lyre, and particularly whether the left hand also plucks the string or whether it is used to stop the vibration of strings that have been plucked by the right hand. If anyone has any ideas on this, they might be of general interest and thus worth sending me a copy for the next Q. Personally I have a strong impression that the answer is either or both.

Sam Reiner sr., of 235 10th St, North Wales, PA 19454, USA, asks whether anyone has plans for a bass Russian balalaika; even the general size, string length and fret locations would be a help. I have suggested that he write to the Glinka Museum in Moscow, where I remember seeing one, but I don't know whether he'll ever get an answer; it's so long since we heard from them that we've stopped sending them FoMRHIQ -- I had no reply to two letters asking whether they still wanted it.

John Underhill says that "I have basic outline drawings of a number of lutes but am lacking in detailed information on the shapes of their backs: I would be very grateful for any such data on original lute backs - particularly the Gerle (Vienna), Venere 7-course (Bologna), Hieber (Brussels) and Hoffmann (Brussels) lutes".

Paul Gretton is preparing an article for the Northumbrian Pipes Magazine on 'Oiling your Pipes'. He would like to know, and so would I, whether peanut (Amer. groundnut) oil is still thought of as the best (ie least likely to dry, etc), and asks "What about Soya or Sunflower?" Some of you will remember the barney I had with Michael Zadro in the pages of Early Music some years ago; I suggested peanut oil then because it had been recommended as the best by one of the more eminent German restorers of woodwind instruments (I didn't name him then and I'm not going to now because as far as I know he has never put the idea into print himself; the suggestion arose in discussion while rebutting somebody else's suggestion of light liquid paraffin, which he said that he tried and found disastrous - an instrument oiled with LLP had cracked into little pieces). Replies both to Paul and to me, please, and if one of our conservationists would write a Comm on the latest thoughts on this subject, a number of people would be very grateful.

Dirk Jacob Hamoen, who runs Bouwerskontakt, has asked whether I know of any forthcoming courses, etc. He would like to list these in the Bouwbrief, and if he takes them from the Bulletin here, they are usually over before the next Bouwbrief appears. So any of you who are running courses of any sort and who would be happy to have Dutch colleagues attending them, please send the notices direct to him at Catharijnesingel 89, 3511 GP Utrecht (it's in the Members' List under Bouwerskontakt) at the same time as you send them to me.

NEWS FROM KIEV: I've had a long letter from Anatoly Zajaruzny about what is going on in Kiev. Very briefly, he says that interest in early music is growing in the USSR, with a number of enthusiasts,
ensembles and books. Kiev is one of the centres, with himself as a maker and an ensemble directed by Svjatoslav Czutikov, in which Anatoly plays recorders, crumhorns and slide trumpet. They are hoping to organise a local EM club, which will be the first in the USSR. Also a first in the USSR, he says, was the construction of a harpsichord, and he asks me to thank Denzil Wraight and Paul Kemner who helped him to make this possible by sending him literature and drawings. He has built a one-stop Flemish, a 2x8' + buff Italian, and a copy of the Marco Jadro 1565 in the Moscow museum. He also asks me to thank Trevor Robinson for his help with woodwind instruments.

He has been working on the famous frescos in the Cathedral in Kiev and seems to have found a good deal of information on what was originally there, beneath the 18th and 19th century over-painting. He and two colleagues are working on a paper on this, and I hope that he will send a translation in due course either to us or to GSJ or Early Music (which would be better than us as they can illustrate an article with photos).

He asks whether there is any material on Byzantine secular music. Can anybody produce any references, or better still send him any books or music? He would welcome any information on other instruments also; judging from what I've seen and heard, he can turn his hand to making any instrument, provided that he can get the plans etc. If you can help him, please do so. It's best to send things by hand, if you can; I sent him some volumes of Early Music, which arrived safely, but a copy of my Baroque & Classical book didn't get there.

COURSES: Eric Moulder is running a series of courses on reed-making. Some have already taken place, and were very successful he says. There's one on Feb. 13/14 for capped and racket reeds and one on March 13/14 for shawm and curtal reeds. Each weekend costs £20 including all materials. Space is limited because the workshop is small, so it's first apply, first served. If you're interested but can't manage those dates, get in touch with him anyway and get on his mailing list for the next series.

Bouwerskontakt have a course on Het kleine orgel, 27/28 February in the Hague Gemeentemuseum. Cost is Hfl.67.50.

FORTHCOMING EVENTS: Peter Forrester and Enzo Puzzovio are appearing on ITV on a programme called 'Bygones' with a hurdy-gurdy that Peter has made for Enzo. Enzo didn't give me a date but just said 'next spring' — keep an eye open for it.

I'm in Bridport, Charlton Kings, Wheatstone Hall (Glos) and Dillingham (nr Ilminster) on March 22-25 and would be happy to see any members living around those parts. And I expect to be touring Scandinavia with CIMCIM in the middle of June and hope to meet more of our members in those countries then.

RATE NEWS: By the time you see this, I should at least have everything unpacked and more or less accessible. There'll still be several months before everything is displayed, but at least it should all be accessible for measurement and so on.

My own collection should also be more or less unpacked and the house straight enough that we can offer hospitality to those of you who are visiting Oxford. I have a home telephone number now: 0865-726037, but don't use it for FoMRHI queries because all the files and so on are here at the Faculty.

DEADLINE FOR NEXT ISSUE: Monday, 5th April.

That's it for the moment. Jeremy Montagu
2.3: Review of The Manufacture of Musical Instruments, ed. Helen Tullberg and Timothy Davies.

Review by Marius Lutgerink of The Irish Bagpipes, their Construction and Maintenance, by Wilbert Garvin. The review points out that, although seemingly aimed at the beginning instrument maker, this book is in fact "more suited to the experienced builder than the beginner." The drawings are half-size, without dimensions being given. One is advised to measure the drawings directly from the pages of the book. As Marius points out, any distortion in the printing will be doubled in the instrument itself. (Translator's note: Garvin's book undoubtedly contains a great deal of very useful information, but a beginner could hardly turn out a set of pipes with its help alone. Just at some of the trickiest stages, bending the metal section of the bass drone, for example, one is left to figure things out for oneself. ("A suitable pipe bender needs to be constructed for this purpose.") Tuning advice is limited to reed-adjustment and the use of rushes -- there's never any mention that finger-hole size or undercutting are relevant, and one hears nothing about beats. There is another very irritating point--Garvin is clearly indebted in organization, layout and expression to W.A. Cock's and J.F. Bryan's pioneering do-it-yourself book: The Northumbrian Bagpipes (1967, rev.ed.1975). This is blatantly obvious throughout to anyone who has the two books, but the fore-runners never get a word of acknowledgement -- their work is only mentioned (without comment) as one of a dozen items in the bibliography. Is it naive to wonder why?)

5.1: Rembert Weijers recommends the use of waxed polyamide thread for lapping tenons. Available from leather shops.

5.2: A source for harpsichord and piano parts; Theo de Haas, Kleine Houtstraat 84, NL-2011 Haarlem, Tel. 023-323649. Catalogue.

5.5: Dealer in tools and materials for makers of stringed instruments: L. Strooker, Einsteinstraat 36, NL-2871 KX Schoonhoven, tel. 01823-4687.

6.1: Jan Dijkstra describes Paul Boekhuisen's method of making bagpipe reeds. Applicable to other instruments.

6.2: Jan Bouterse describes the adaptation of a file ("Aven half-round filemaster") for use in profiling recorder windways. This is a detailed article with clear diagrams.

9.1: Jan Bouterse goes on to make some useful remarks about "Recorder-Making: Learning from one's faults." Deals in some detail with the problem of centring the work-piece.

10.1: Can anyone make or adapt a recorder for an 11 year old whose left middle three fingers are not fully grown? A few keys would probably solve the problem. (Might interest someone for whom there are more important things than authenticity? P.G.) Contact: Mrs Posthuma, Achterwerf 237, Almere-Haven, tel: 03240-13889.

11.2: A performance course "Medieval diatonic plucked psaltery" is being planned for 1982. The tutor will be Nelly van Ree Bernard. For information, phone 02502-6162.

Translator's note: If you want copies of any of these articles, the official FoMRHI procedure is to write to the Hon. Sec. not to me. And how far is this review of the Bouwbrief really worth it? Surely very few FoMRHI members read Dutch? (Just asking!) I don't mind doing it, if there's some point. How many requests for copies are in fact received each quarter?
My first response to Eph's Comm. 376 is that I owe Eph an apology. I pulled his leg too hard and it came off in my hand.

My next is that however much I agree with Eph about Hornbostel/Sachs, and in a number of respects I do agree -- there are a number of inconsistencies, some serious lacunae (often of course of instruments that have been discovered since 1914), and some serious difficulties in handling various instrument types --, it remains both the best system we've got and the only one that is internationally recognised.

There have been a number of other attempts, both before and after the appearance of the Hornbostel/Sachs (I and John Burton perpetrated one; see Ethnomusicology XV:1) but none have been accepted by the scholarly world. The best explanation of why they have not proved acceptable, and at the same time the best description of why the Hornbostel/Sachs should be used, will be found in the Postscript of Laurence Picken's Folk Musical Instruments of Turkey.

Reading Laurence's Postscript convinced me a good deal of the way into abandoning my and John's system; what finished me off was trying to apply my own system to my own collection. Alright, you may say that a better system on the same lines (ours was a binomial system) would have worked, but in fact it wouldn't, and for the reasons I would refer you to Laurence's Postscript.

I can understand Eph's problems, although they are different from mine, when dealing with Hornbostel/Sachs, but they're not insuperable. Even so simple a solution as using different type (eg LUTE when using it as a class name and lute when referring to Dowland's instrument) would remove many of his difficulties. Alternatively, and probably equally easy to someone of mathematical inclination, take advantage of the fact that it is a numerical system and refer to the 321s or, if being more specific to the 321.321s, which would separate those with bowl bodies such as what Eph means by a lute from those with box bodies (321.322) such as violins and guitars.

If one really wishes to use a proper scientific, internationally recognised system, then it's not difficult to find such an acceptable solution. What nobody will accept today is a new system, and particularly they won't accept one with funny names in dog-Latin. One has to realise that there is an accepted system and that what we have to do is to make the best of it and work out ways that will allow us to use it.
There is, of course, an immediate and final reply to Eph's Comm: Philip Bate gave his collection to Oxford on condition that it would be used for performance and study.

The question that Eph raises is: was he right to do so?

I believe that he was and that in this immediate instance Eph is wrong. I say 'in this immediate instance' because on the whole Eph is right in his arguments. The instruments that have come down to us are a heritage that it is our duty to pass on to future generations, and if we're going to muck them about to make them playable, and then play them, there isn't going to be a lot to pass on to future generations. Eric Halfpenny had a comment on this years ago: he said that the only instruments left, with a few exceptions, were the duds because the good ones had been played till they fell apart. If we go on playing the few exceptions, they'll fall apart too.

Now I don't want to imply that what's in the Bate Collection is a whole batch of duds. What I would say is that there aren't many really rare instruments, and only a very/unique, and these /few we do keep a very careful eye on. What there is, is a superb general survey of the progress of instruments since the mid-18th century, and a collection of individual instruments most of which are duplicated elsewhere. Of course it is a reduction in human knowledge, in mankind's heritage, when a 2-key oboe vanishes, but there are plenty more. There are many more Stradivarius violins than there are Stanesby flutes, but if my own Stanesby, which I've put in on loan, gets broken while a student plays it, there are others still (and, like the Strads, my own Stanesby isn't in original condition).

This is true also of much that we have here. Not many of the instruments have been chopped like my Stanesby, but they have all been well used, both in their proper lifetime and subsequen­tly by Philip and others. I would not say that there is no evidence still to be garnered from them of the sort that Eph refers to, but instruments that have been well used profession­ally in their own time and that have then knocked about the world, winding up in antique shops, junk shops, auction gall­eries and so on, cannot be compared with instruments that have been in a Kunstkabinett (eg Vienna, Kunsthistorisches Museum) or in an early collection (eg Brussels, Conservatoire Museum) or bought more less straight out of the attic where they had lain since they were last used (eg London, Victoria & Albert Museum or Leipzig, Karl-Marx-Universität Musikinstrumenten Museum, or Nürnberg and so on). This has to be said of most modern collections, whether of Philip's generation or of my own; the instruments we have, have all been used, sometimes abused, since their own time.

As a result, so long as the great collections are preserved in safety, there is no reason why our instruments shouldn't be played. Obviously we do take precautions; we do expect the instruments to be looked after and we don't lend them to people about whom we know nothing; we don't even take them out of their
case unless we have reason to believe that the customer has a good reason to want to see or handle the instrument and knows how to handle it.

We do believe that we have a duty to our immediate successors. We believe that interest in old instruments, interest in performing music on the instruments for which it was written, can best be fostered by allowing the use of our instruments both for performance and as models, for measurement and so on, for the makers of new instruments.

One reason for this is the change in market prices over the past twenty years. When I first took an interest in playing Mozart's and Beethoven's horn parts on the instrument they wrote for (this is where I began in this field), I picked up a hand horn in 1951 for £5, complete set of crooks and all. When I first took an interest in woodwind, Morley Pegge gave me handful of flutes; I bought others at 30/- a go (£2.10 for my best one-key flute seemed an extravagance), John Sothcott sold me a 2-key Milhouse oboe for a fiver, I bought a 5-key Milhouse clarinet for £8 (again an extravagance, but I found it between rehearsal and concert and blew the fee and the day before's). The trouble is that a future Bate can't today buy instruments for two concert fees, and in Philip's time it was even better - he was buying instruments for half a crown or ten bob.

The only way that the Bates, Segermans, Montagus and whoever of the future will acquire first the interest and then the knowledge that we have acquired is by being allowed and indeed encouraged to use and to study the instruments that we have collected. So long as there are the great museums preserving their instruments, we can afford not to dissipate but at least to risk our own. It is a risk, but for the sake of future scholarship it's a risk worth taking.
Construction of Ivory Cornetti and Tuning Cornetti at the Sharp End

1) Construction of Ivory Cornetti

I'm glad that Bob Marvin has also enjoyed himself at the "Droguerie Le Lion" and grateful to him for his first-hand comments on the Metropolitan Museum's ivory cornetto. I only know this particular instrument from photos, X-rays and drawings. May I make some comments and ask even more questions? Bob, or someone else, may know the answers.

Some people have considered the mouthpiece of this instrument to be non-original on the grounds of its design. The inside rim diameter is about 13mm, the cup-depth only about 4mm, and the rim quite sharp. This is not much different, however, from the Vienna (approx. 14mm/4.6mm, sharp) and Offenbach (approx. 14.3mm/4mm, sharp) specimens, and there are similar mouthpieces in other American and European museums. I have always wondered whether, if some of these "supposedly original" mouthpieces aren't genuine, who faked them, when and what did he copy? The general type of mouthpiece used in the Renaissance and Baroque is becoming increasingly clear, and Graham Nicholson's forthcoming publication from Basel should clarify a lot more.

I would like to know more about techniques of softening and bending ivory -- their application to curved ivory cornetti has been suggested before, and I've even done some nasty experiments with cow-horns and vinegar. Is the Metropolitan instrument made from heart-of-the-tusk ivory or is it cut across the grain? How does one tell this? I don't know much about ivory, but Hermengè's serpent tutor says that mouthpieces must only be made from heart ivory.

One thing is certain: like the ivory cornetti in Berlin (ex-Kanji) and the RCM, the Metropolitan specimen was not made by boring and reaming a straight piece of ivory, like a cornetto muto or diritto, and then bending it. (I don't know whether Bob is actually saying this.) X-rays of all three instruments show that they were somehow gouged or reamed out when already curved, rather in the manner of a tonsillectomy! The craftsmanship is breathtaking. How they were curved in the first place, whether by bending or just sawing to that shape, is another matter. Julian Drake points out (GSJ XXIV, p.50) that the bore of the RCM instrument seems to have circular cross-sections with large steps, suggesting a limited number of inserted, rotating tools. The X-rays of the Berlin specimen also show irregularities, mainly in the plane of the curve, as one would expect -- it must have been easy enough to keep the tools in this plane, but extremely difficult to prevent them wandering from side to side within it. The more easily accessible sections of the bore (i.e.: top and bottom) are regular.

Irregularities visible on X-rays when instrument viewed like this.

Much more regular when viewed from side.

Any further information gratefully received!
Back to square one! Peter Baldry’s supposition that tuning cornetti to the organ is unauthentic and unnecessary suggests an imperfect acquaintance with a) even the most familiar early sources, b) surviving instruments and c) the advanced playing technique of the instrument. In spite of the existence of “a common local standard pitch” to which instruments were made, it was still necessary “then”, as it is today, to make further empirical adjustments. Furthermore, Peter’s practical advice to performers is invalid for various reasons, musical and physiological. A couple of quotations would suffice to refute him, but I’d like to give more detail than is strictly needed, in the hope that it may be of general interest and may clear up a few misconceptions. I hope that my remarks will be taken in the right New York/Jerusalem, Manchester/Dulwich, Tweedledum/Tweedledee spirit!

2) Sources:

i) The obvious source, as always, is Praetorius. He states directly (Syntagma Musicum, II, p.35) that one tunes the cornetto “dergestaldt, dass man oben das Mundstück weiter herausser oder tieffer hinnen stecke” (“by pulling the mouthpiece further out or by pushing it further in.”) That’s to say, players didn’t just use their lips! This statement comes at the end of his chapter on the recorder, in which he laments the difficulty of tuning to certain organs “weil ... auch die Orgeln in etzlichen Kirchen, so die Hitze und Kälte leicht treffen kan, im Winter niedriger, im Soñer aber höher am Thon befunden werden.” (“also because the organs in some churches, which are susceptible to changes in temperature, are found to be lower in pitch in winter and higher in summer.”) p.34) This difficulty, he says, could even necessitate having two sets of instruments a semitone apart. He goes on to claim for himself the invention of two-part tuneable recorders to alleviate the problem and mentions also that Bassanelli can be tuned in this way. There then follows the above-quoted passage about the cornetto.

ii) Just as clear and direct is Bartolomeo Bismantova, cornettist of the Accademia dello Spirito Santo in Ferrara and author of a Compendio Musicale (1677), who describes in detail the tuning of a cornetto to various organ-pitches by means of tuning-bits similar to those used on early trumpets and trombones, which lengthen the instrument at both top and bottom. There is even a delightful illustration showing how such gadgets are to be attached. If the cornetto has a silver mount, this can be used to extend the sounding length in the same way. “procurando ancora di sentire prima il tuono chorista del Organo; & altro et "in caso, che fosse più alto il Cornetto del Organo; bisognerà mettervi una & più Giunte; et se fosse per il contrario più basso di voce; all'ora bisognerà levarne” (fol.54 recto. “Try first to listen to the tuning note of the organ or other instrument. If the cornetto is higher in pitch than the organ it will be necessary to insert one or more tuning bits; if, on the other hand, it is lower, it will be necessary to remove them.”) Bismantova then describes how a bit for the bottom end of the instrument should be made and goes on: "e si fà questo; acciò elongando il Cornetto di sopra, e di sotto, le voci tutte; e in specie l'acute;" [my underlining and asterisk] venghino giuate; come l’istesso, si fà del Flauto; e l’viso serva, con iudicio; ovvero sè nel fondo di detto Cornetto vi sarà per adornamento, la Legatura d’Argento, alta, e movibile; si potrà questa elongarla; che farà l’effetto, che fa la Giunte.” (fol.55 recto. “This lengthening of the cornetto at the
top and bottom ends is in order to get all the notes in tune, especially the high ones [see below, PG] in the same way as the recorder is lengthened. [Bismantova has previously described a three-part recorder in g and how to tune it] One should use common sense in applying this advice. If, however, the cornetto has a long, movable silver mount at the bottom, one can use this to lengthen the instrument in the same way as with a tuning-bit."

Bismantova then goes on to give the most detailed advice we possess on how to actually play the instrument, but he returns to tuning problems at the end of the chapter. "Se per sorte si trovasse Organi, o Cembali, che fosserassai bassi del Corista; e che il Cornetto non si potesse accordare, ne accomodarsi con le voci a quel Tuono; in occasione di suonare, Sinfonie, o altro; in questo caso bisognera accordare il Cornetto una voce più alta; e poi suonare, una voce più bassa; e bisogna saper suonare per tutte le Chiave; per poter suonare Spostato né bisogni." (fol.57 verso.

"One may come across organs or harpsichords which are lower than choir pitch and it may be impossible to tune or adjust the cornetto to the mode of the Sinfonie or other pieces one wants to play. In that case it will be necessary to tune the cornetto a tone higher and then play a tone lower. One therefore needs to be able to play in all clefs in order to transpose if necessary.")

Previous to his chapter on the cornetto, Bismantova has already mentioned two other interesting facts about tuning wind instruments. Firstly, he suggests the use of wax on the labium as a means of flattening one-piece recorders, which implies that all Renaissance recorders, whether one-piece or jointed, were at least potentially tuneable, contrary to what Peter says, "e se il Flauto fosse / più alto del chorista meza voce, o meno, o più; e che non si potesse slongare di canna; in tal caso, si potrá mettere un poco di cera da una parte della linguetta ben atteso;che così s'aggiusterà." (fol.50 rec./50 ver. "If the recorder is higher than the tuning pitch when one blows more or less normally and it is not possible to lengthen it, then you can very carefully put a bit of wax on one side of the labium, which will solve the problem.") Such constriction of the labium is well-known to folk players — it is the standard method of flattening the old Clarke tin-whistles, although sellotape has now taken over from wax.) Secondly, Bismantova is, like Praetorius, aware of the effect the weather has on pitch, although he describes diametrically opposite changes. "Tempo humido, crescerà il Stromento; e il Tempo asciutto, e caldo, lo fa calare di voce" (fol.52 verso. "Humid weather makes the instrument go sharp, and hot, dry weather flattens it.") His solution is to pour a glass of water through the cornetto when playing in the summer!

I have quoted Bismantova at such length because Peter seems to be unaware of this important source, although it is well-known to serious players, a facsimile and a translation of the cornetto and recorder sections having been available since 1978. Bismantova is the only early source — I haven't forgotten Dalla Casa, Mersenne etc. to give us detailed instructions on aspects of playing technique other than tonguing, and he stands at the end of the long, unbroken tradition of cornetto playing in Northern Italy. I see no reason to think he is describing innovations — it's logical to assume that his forerunners, not only in Italy, used similar tricks of the trade, and we can doubtless apply his advice to the Venetian school and even earlier periods, as well as to the music of the Stadtpfeifer later on.

iii) Certainly Trichet, in his Traité des instruments de musique of about 1640 (p.102 — at this point not cribbing from Mersenne), mentions that ornamental silver mounts were already to be found on cornetti in France. If Bismantova used them to tune, the redoubtable Messrs. Quiclet and Sourin may well have done so too.
iv) Mersenne himself (Harmonie Universelle, pp.273,276,277) describes a three-part cornetto which he calls "Basse". He says it is in three pieces to make it easier to carry around, but he's writing about the time when various less bulky multi-sectioned instruments were in any case coming on the scene, and we can perhaps assume that the three-section construction provided also some tuning capability. Multi-sectioned cornetti are, of course, to be found in several museums.

We shouldn't forget that the cornetto was not just a Renaissance instrument. After Mersenne and Bismantova it still had a long and healthy life ahead of it in Germany, and for much of its existence it was the contemporary of jointed wind instruments. Peter's comparison of it with the flutes and recorders of just one period doesn't stick.

v) Altenburg (Trompeter- und Pauker-Kunst, 1795) is admittedly a late source, but he is discussing a related instrument and, like Bismantova, he is summing up the practices of a long and still (just) flourishing tradition. He lets us know that even if a trumpeter is only going to play with other trumpets, he still needs at least some tuning bits to be able to tune to his colleagues. "Derjenige Trompeter ... kann ... sich mit etlichen kurzen Setzstücken, zur Einstimmung bey andern Trompeten behelfen." (p.83. "That trumpeter can get by with some short tuning-bits to tune with other trumpets.") For really fine tuning, he says, it may be necessary to use bits of paper: "Sollte aber ja die Einstimmung ... nicht völlig treffen, so wird man sich leicht mit ganz kurzen Setzstücken oder ein wenig Papier um das Mundstück gewickelt, damit letzteres nicht zu tief hinein falle, zu helfen wissen." (p.86. "If the tuning is still unsatisfactory, one can easily make use of very short tuning bits or a bit of paper wrapped round the mouthpiece so that it doesn't go in too far.") It is clear from Altenburg's comments and their context in his book, that even if a particular court had adopted a standard pitch in principle (and perhaps bought its trumpets as a set from a single Nuremberg maker), one might still have to make slight adjustments. With "lip-vibrated aerophones" this was usually done by means of mouthpiece positioning. (Perhaps I'd better add that I'm not suggesting that the trumpet is as flexible in pitch as the cornetto, nor that one should play the two instruments in a similar manner!) 

b) Surviving Instruments:
The two beautiful cornetti in the library of Christ Church, Oxford, (bought 1605) are provided with removable silver mounts which serve to lengthen the instruments by about 7 or 8mm at the mouthpiece end, lowering the pitch considerably. (See the same article by Julian Drake in GSJ XXXIV, p.45 for a sketch of how they do so.) It is not known at what date they were added, and they may have been intended to effect a permanent lowering of pitch rather than provide an alternative. In either case, they again show that the answer wasn't always in the lips — their effect is the equivalent of pulling out the mouthpiece by the same distance. (Two instruments in the St.Annen museum in Lübeck have indeed been permanently lengthened at the bottom end and the fingerholes altered to allow for playing at a different pitch.) 

The above is the historical evidence — from four different countries — on which I based my statement that you can and should tune cornetti by means of mouthpiece-positioning. There is also the evidence of personal playing experience, mine and others'.
c) Playing Technique.

Of course every cornettoplayer knows what Peter tells us in such a revelatory manner: the pitch of a given note is flexible and one can "pull" or "lip" notes up and down. However, if one goes beyond his "bit of practice" and does a great deal of practice, various other phenomena make themselves felt. It becomes apparent that each tone has a "centre" or point of optimum/maximum resonance at which it sounds and projects best. (This is even true of the serpent, by the way.) The process of learning to sound the instrument is one of learning to find these tonal "centres" by instinct. There is some leeway, but if one frequently plays at non-central pitches one will never get the best sound. The difference between a good and a bad instrument, other factors being equal, is that on the former a greater number of these centred notes is in tune with one's chosen pitch and temperament. It is this set of centred notes which one has to tune to the organ or whatever, and one does it by adjusting the length of the sounding air-column. I'm not trying to be sarcastic, but all this is surely obvious and applies, sometimes more and sometimes less, to all wind instruments. Of course, there is never a perfect instrument -- one always has to lip at least some notes into tune. Playing in tune is not just a matter of producing a note of the required pitch any old how but of doing so with the best possible sound. If one tries to do everything with the lips, the sound, instead of being "open" and "free", will be "tight" and "strained" when playing higher than the instrument's intrinsic pitch and "fuzzy" and "not projected" when playing lower -- all very subjective adjectives, but valid.

In fact the flexibility Peter describes is dependent on other factors besides lip-tension. For example, it is very much less with a small ("authentic"??) acorn-cup mouthpiece than with an adapted trumpet mouthpiece. Indeed, tuning at the sharp end must have been a necessary provision for the use of various mouthpieces and various players. If you bought a set of cornetti in Venice for use in Munich, you had to be sure that Hans, Fritz and Seppi, with their own personal lips, lungs and mouthpieces, would be in tune. They must have "bothered to move" their mouthpieces. Just as significantly, pitch-flexibility varies very much from register to register of the instrument. Thus it may well be possible to lip the lowest notes through as much as an octave, but the high notes -- according to Bismantova a characteristic of the cornetto -- are much more stable and less susceptible to alteration with the lips alone. Try playing Pezel, or the "Deposuit" from the Monteverdi Vesper, or a scale from g below the stave to the g three octaves higher -- all on a 440Hz cornetto with say, a 450Hz organ. After about top a one will be much too flat, and some notes will skip to the next harmonic. There is, quite simply, a limit to what one can do with the lips alone. This lack of pitch-flexibility on the high notes is specifically recognized by Bismantova in the passage I have marked -- he implies what practical experience shows: one should tune to a less-flexible high note, blowing quite strongly. Tuning to a note in the lower octave may be deceptive. The instrument needs to be capable of sharpening as well as flattening. Leaps over large intervals will also show up an instrument whose intrinsic scale is out of tune with the accompaniment -- one tends to hit these "real" notes even if one is trying to play "de-centred."

For the above reasons one has to be extremely careful when assigning pitches to museum instruments. Some research is way off centre, including a recently published book.
Perhaps I should anticipate the objection that the cornetto muto was of fixed length and couldn't be tuned? I won't dispute the probability that players had numerous instruments available -- inventories show it. On the other hand, the muto seems to have been used mostly in chamber ensembles of quieter instruments, which would have tuned to it in the same way as a modern ensemble tunes to whichever fixed-pitch instrument is being used. With strings, reeds, trombones, and even harpsichords this will have presented no problem.

In conclusion -- tuning the cornetto to the organ was and is a natural, necessary, and obvious thing to do. (I personally don't know any serious player who doesn't do it.) "Then" as now, there was a need to accommodate the instrument to such unforeseeable factors as: variation in supposedly identical instruments, the state of one's embouchure, fatigue, the weather (which doesn't affect all instruments in the same way), heating etc, etc, etc. Neither player nor instrument is at 440 all the time.

P.s. I know that there are sharp as well as flat organs. Indeed, my own experience (statistically invalid, of course) is that they are usually sharp. Furthermore, I have had to play with orchestras that tuned to about 444Hz as a matter of course and were surprised at protests. So one up to P.B.!

P.p.s. Recorders and flutes were not the only other Renaissance wind instruments. The cornetto is better comparable with those which obviously could be tuned -- reeds and trombones, for example. P.p.p.s. I didn't suggest "enlarging tuning holes on some reed instruments." My only mention of reed instruments was to point out that there has to be a good fit between reed and instrument, in the same way as between mouthpiece and cornetto. However, I wonder if Peter has ever actually taken a look at the reed-sockets of original oboes, bagpipes, crumhorns, etc? They aren't cylindrical, but they are ........................... aaarrggghhh!!

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The problem with cracked and crazed brass instruments mentioned in Bull. 25, p. 8 is a manifestation of two of the several effects of localised corrosion, i.e., loss of metal from a small area of a surface which is otherwise relatively unaffected.

The first effect is intergranular corrosion which is caused by differences in electric potential between the material in the individual grains of the alloy and the thin boundary layers between these grains. Corrosion occurs when current flows between the areas of differing potential. Affected areas appear "crazed" as the individual grains become prominent due to the deterioration of their boundaries. In the worst case entire grains may become totally dislodged. Susceptibility to intergranular corrosion can be related to the size and pattern of the grains which in turn are highly dependent on the cold working and heat treatment histories of the metal and the environmental conditions to which it has been exposed.

The second effect is stress corrosion cracking which occurs under the combined action of applied or residual tensile stress and some corroding agent or effects of aging. Cracks occur in affected areas. Susceptibility to this type of corrosion is also dependent on the cold working history of the metal and environmental conditions. The first type of stress corrosion cracking which concerned metallurgists (and the invariable textbook example of the problem) was that noticed in α-brass cartridge cases stored in ammonia rich environments. The problem occurred frequently in the tropics during the monsoon season, hence the name "season" cracking which has since been applied to all ammonia induced stress corrosion cracking.

The propensity for both intergranular corrosion and stress corrosion cracking can substantially be reduced by annealing which has therefore become a standard industrial preventive treatment. Annealing, however, will not and cannot under any circumstances eradicate the effects of corrosive damage which has already occurred and is thus not a "cure" for cracked or crazed instruments. (How in the name of reason can metal which has corroded away be expected to reappear by the application of 300°C for 20 minutes??? Has the ICCROM suggestion really been related accurately?)

Anyone who has brass instruments which do not show any signs of these problems could probably reduce the likelihood of their later manifesting themselves by low temperature annealing. Ignoring the problems of desoldering and resoldering the instrument before and after treatment it must be realized that brass instrument makers go to a great deal of trouble to cold work their material to extreme hardness for what are regarded as important musical reasons (see Bull. 25, p. 9 under Medieval Technology). Annealing to lower the risk of some types of localised corrosion would quite likely ruin the musical value of any brass instrument. Basset horn bells, aside from the destruction of any lacquer with which their insides might be coated, are probably less critical in this regard.
The amount of material which would have to be sacrificed to provide experimental results of real use in determining the priorities would surely be unthinkably large. How, in any case, does one determine experimentally what will happen to a given object at some time in the future?

There are other preventive measures which can reduce the risk of localised corrosion without jeopardising the material or musical integrity of an instrument. These consist of cleaning the metal to remove corrosive and electrolytic material, its stabilization to reduce the likelihood of renewed destructive activity, and providing some protective barrier between the metal and deleterious environmental elements. The specific techniques are quite straightforward BUT the choice of procedure must be based upon accurate knowledge of both the exact type of alloy being treated (a generic term such as "brass" is far too nonspecific) and the type(s) of corrosion against which protection is desired. Otherwise the treatment can cause new problems easily as serious as those it was intended to avoid. Access to the necessary analytical facilities (very few museums have them) implies access to the expertise necessary to deal with the further details of the matter. Otherwise as long as brasses are not polished problems can often be avoided. Most commercial polishes contain ammonia which will etch out the grain boundaries in brass and thus weaken it as well as leaving more space between the grains to trap electrolytic and corrosive material. Exposure to ammonia in itself is enough to trigger stress corrosion cracking. Commercial polishes can also contain electrolytes which can "charge" incipient galvanic cells in the uncleaned brass and initiate intergranular corrosion. The weakened brass will more easily stress corrosion crack. Safe polishes can easily be formulated, but all polishing removes metal from the instrument so if polishing is regarded as necessary the instrument will require subsequent protection from conditions which will cause a need for renewed polishing. (The practice of repeated cleaning with unsuitable polishes is, in my experience, the most common cause of the basic problem in the first place.)

What to do if localised corrosion has already occurred? Metal which is gone is gone. It is possible to speculate on some fantastic (literally) microwelding technique which can be used to seal cracks without substantially effecting adjacent metal, but no such technique is available to us. Even if it were, localised corrosion tends to occur in somewhat larger areas of unstable material so closing individual cracks wouldn't provide that much help. Obviously, problem instruments should be cleaned, stabilized and protected remembering, however, the problems discussed above. If the difficulties are the results of material aging this treatment won't help much either. Brass repairers will patch a crack with new metal which provides a good solution to the mechanical problem but may be of questionable value where conservation in a stricter museal sense is desired.

If these comments are not felt to provide enough useful information it must be realized, however reluctantly, that the musical instruments which interest us so intensely have finite lifespans and that we will not be able to avoid seeing some of them reach the end of their days. It would seem more reasonable to expend energy preserving the material which still survives than on a search for a "cure" for material which has disintegrated.
A method of casting harpsichord roses.

John Paul

When I first came to make my roses in metal, I found that sand casting gave an insufficiently fine and detailed finish, and I did not like the look of castings in the traditional lead alloys. For these reasons I worked out a version of the method of casting using what is known as a valve mould. It would really be better to call it a "bi-valve mould" because the mould is in two shell-like halves like an oyster. It is a version of gravity die casting and gives results of similar quality.

The metal I use is zinc which is available in a number of commercial alloys such as the Mazak range, designed for die casting. Anyone wanting to do some first trials will find that carburettor bodies from a car breaker will be suitable; these are nearly always of zinc. Zinc has the advantage that it is a hard metal, which will buff and take a high polish, but it is also possible to carve it, so that the casting can be cleaned up easily. It will plate if required - I usually gold plate my roses. The melting temperature is low, 420°C for the pure metal. It can be melted easily in a plumber's ladle over a gas torch, while small quantities can be melted on a kitchen gas stove.

One must start by making a master pattern in two stages as follows. First, turn in the lathe a piece of wood (beech is ideal), thick enough to go in the chuck and at least an inch larger across the face than the rose is to be. Turn the face flat, and then turn away sufficient wood to leave a ring proud on the surface. This ring should be 3/16 inch proud, about 1/4 inch wide, and a suitable outside diameter would be between 2 1/2 and 3 inches. The sides must slope and not be vertical. The wood block should be turned to a diameter 1 inch larger than the ring, and when this is done, rubbed smooth with glasspaper and renewed from the lathe. Polish with French polish and beeswax or beeswax alone. The area inside the ring is to contain the rose pattern and, to make this, fill the area with plasticine or casting wax and carve the required image in this. Very important: all cuts must have sloping sides with no undercuts. The advantage of using materials of this kind is that any mistake can easily be rectified and the image can be gone over until it is satisfactory. When it is satisfactory, wrap a strip of tinfoil round the block so that it is at least half an inch high all round, and pour into this sufficient polyester plastic to fill. The plastic should have in it the manufacturers recommended hardener and catalyst and a small amount of inert filler and colour. When set, this is a female mould of the rose and can be used for casting plastic roses. (Go no further if this is what you want). Coat the mould with a proper release agent or wax it. I have found beeswax, furniture polish or shoe polish to be suitable. The mould is placed flat on the bench and filled with polyester, again with a little filler and colour in it. Work the liquid plastic into the detail with a fine paint brush. This is to be the master pattern and it must be carefully carved over to sharpen the detail.
and then put in the lathe and the back turned flat until it is of the required finished thickness. The way to fix it in the lathe is to chuck a piece of wood, turn the face of this flat and then turn a depression into which the rose will exactly fit. The rose is then screwed to this piece of wood. Do not use wood turning techniques on plastic but turn as for brass.

Now comes the mounting of the master pattern. Take two pieces of half inch or threequarter ply, each about 4 inches by 5\(\frac{1}{2}\) for a 2\(\frac{1}{2}\) inch rose and face them with a polished plastic surface – Formica is suitable. On one, the plastic master pattern is glued with epoxy glue, \(\frac{1}{2}\) inch up from the bottom. On the other, the pattern for the filler cup must be formed. This must be shaped like a very rounded triangle, 2 inches wide at the top and about \(\frac{1}{4}\) inch thick, tapering down to nothing. It is fixed with the wide end flush with the top of the block, and must be long enough to come down to a \(\frac{1}{2}\) inch lower than the top of the rose pattern when the two blocks are faced up. In the mould, this forms the feed for the molten metal. It is important that it should be large, especially at the top, as it acts as a funnel. The weight of molten metal in the feed cup also provides pressure to push the metal into the detail of the casting. Make the male shape in wood and copy it in plastic through either a plastic or plastic intermediate mould. Fix with epoxy to the second block, just as with the rose pattern. When all this is done, there will be two matching master patterns, one for the rose, one for the filler cup, which will last indefinitely. From these the two casting shell moulds are made.

Cut up a number of pieces of 3mm or 4mm ply and screw these to the sides of the pattern plates, in such a way that each becomes a shallow, open box, 1 inch deep. Into these the mould material is poured. The mould material is a sand/cement mixture, one part Portland cement to one part fine silica sand. This sand is available from pottery suppliers but the stuff sold in pet shops as fine silver sand appears to be the same thing. It is important to ensure that no air bubbles are entrapped to mar the surface, by repeated tapping. It is a good idea to reinforce the grout with asbestos string or the special concrete quality glass fibre. Allow to set for seven to ten days before removing the mould from the pattern, and then leave to cure for several weeks. In the meantime, more rose moulds can be made and perhaps a spare feed mould.

When the time comes to cast, bake the moulds in a domestic oven for an hour to dry thoroughly and then give them a further heating with a gas torch. Wear protective clothing, gloves and goggles. Fit the two halves of the mould together with G - cramps; they must fit smoothly face to face so that no molten metal escapes. This needs to be checked earlier and the faces rubbed down if necessary. Melt up to half a pound of zinc in a plumber’s ladle, using a gas torch or a large gas burner, and when it is molten, skim off any dross with a piece of wood and pour the molten metal into the closed mould. It is best to have the mould at an angle to the vertical and to pour with a
steady stream, holding back any dress with a stick. As soon as the metal has chilled, part the mould and remove the casting carefully. A new casting can be made immediately if the mould is undamaged - I get anything from one to six perfect roses from a mould, and it seems to be largely chance how long a mould lasts. The use of an aerosol foundry release agent prolongs mould life. I usually have several moulds ready when casting, so that I can cast at least a dozen at a time. The feed part of the casting is sawn off for remelting, and the rose cleaned, detail engraved over as necessary, and polished.

It is possible to have an iron mould cast at a foundry from the master pattern and this will last for hundreds of castings. I have also made permanent moulds from aluminium; not so far for rose casting, but this is a method I am trying out now and I will report in due course if it works.

I shall be happy to demonstrate this system to anyone who cares to visit me.
David G. Jones has expressed an interest in the two restoration reports which comprised my Comm. 366 but says it would be more interesting to know what I would do with a square piano retaining only one hammer, three dampers and a few strings. The answer is: be thankful that you have some evidence of what the hammers, dampers and strings were like (assuming they are original) and make a "hammer strip" tapered from bass to treble and complete with a continuous strip of leather hinge. This should be cut into separate hammers, each of which has a separate wrapping of (usually) two kinds of leather. With a grand, the hammer strip can be covered with hammer leather before cutting into separate hammers. Dampers can usually be made in strip form, often with damper cloth attached before cutting apart. I expect this is what Mr. Jones is now doing on his current restoration.

The philosophy of this is that anything missing should be made new (not cannibalised from other old pianos) as accurately like the original as possible. New work should be identified discreetly (e.g. stamped with the year) but it may be coloured to blend in with the old parts. Thus a casual inspection reveals an instrument whole and in good condition, but a fuller inspection can distinguish the old and the new.

The repair of damage is, I think, best aimed at removing signs of abuse as far as possible, but not attempting to disguise the legitimate history of the instrument, including patina and wear patterns. If an instrument is badly damaged or has many parts missing it may be uneconomic to restore, but that is a separate question and depends on its rarity.

Mr. Jones was curious about my technique of separating the outer hammer layer from the inside ones. It usually changes the sound a little, though I would always try one hammer first to check that the sound is improved. Undoubtedly the layers were originally in contact but not adhering to each other over the part which hits the string, though the layers would originally have been tighter than one finds in an old instrument. I expect my treatment for separating the layers would last at least twenty years, but it can be repeated as often as necessary. One cannot expect to restore an instrument so that it needs less maintenance than it did when new, and one is entitled to expect that the user will provide a good environment. In fact, a restorer should enquire about maintenance and conservational prospects before accepting a commission.

My green woollen cloth was bought from a local department store, now closed. It was a Shetland worsted 1.1 mm thick, but most worsteds are probably suitable. It had a strong direction and a yielding direction, like the old cloth. Stores of the House of Fraser group may be able to supply something suitable.
I never replied to John Rawson who asked "Is restoration doomed?" in Comm. 268, arising from my article in "Early Music" April 1980. He ends: "Logic leads to . . . the replacement of the restorer by the replica-maker. But where does this leave people who want to know what the original instruments sounded like?"

I was arguing, amongst other things, that before a restoration is decided upon there should be two stages of discussion: (1) on the best procedure assuming the instrument is to be restored (2) on the advantages and disadvantages of the best restorational procedure compared with other options including conserving but not restoring the original and building a copy from scratch.

The restoration option may be right for a particular instrument in particular conditions. Restoration is not doomed, but its implications ought to be scrutinised before action is taken, and it should never be assumed that it is obligatory.
About restoration reports

(further to Corn 394)

I'd like to comment on the restoration reports by Dr John Barnes. First of all, I think these reports are good specimen to be handed over to the customer (who'll be interested only in what's been done or to what extent the piano needed restoring). My own restoration reports aren't different from Dr Barnes's, but the members of FoMRHI need - I guess - a more detailed kind of description of the methods used. E.g., it wouldn't be enough to say that the damper mechanism was straightened, but to tell them exactly how it was done! Of course, one could argue like Mr Friederich Hellwig (the curator of the Nürnberg Museum), who told me once that if one gives bits of information on methods then any layman will start restoring and a lot of beautiful instruments might or shall inevitably come to (irreversible) harm. At the other hand, he also says, that anyone who really is determined to learn to restore needs a lot of tangible information. So give it to him and he might or may avoid doing harm to instruments. There are arguments in favor of both points of view. I don't know myself which attitude I should take. If one favours the first opinion FoMRHI has consequently not to change its name and become FoMRHI. In that case I'm afraid a rather formal attitude should be adopted (by whom?). Unfortunately, it's true that a lot of damage is done by people who don't know what they are doing. The following illustrates this quite clearly: someone wants to clean an old painting (a portrait) which has become dirty over the years, reads something about the subject, decides to do the job himself and where does he start cleaning... right in the middle of the face! Don't ask about the consequences in this particular instance. Most people simply haven't got enough patience to wait till they are quite sure about things! If that were so, there would be no problems. A future restorer would have until he's gathered enough reliable information (through personal contacts, thorough studying, courses, apprenticeship etc... and perseverance!). One might also argue that it isn't quite simple to start a restoration workshop (my initial outset costs amounted to about 3500£ the price of any instruments not included), so that not many people will start restoring (even not if they only want to own one instrument in good playing order). It wouldn't be worth the money or the trouble. So far as this 'Introduction' is concerned, I'd like now to say something about the reports paragraph after paragraph:

- As a matter of course I (nearly) always replace the old strings by new ones. Of course I do return the old strings with the restored instrument (in view of reversibility and documentation). In my experience old strings (over 150 years or more) have lost their resilience and their tone-qualities. If only some strings are replaced, the new ones won't give a good tonal match with the old. At least I hear the difference. One can never be quite sure how many and which strings have already been renewed. If the soundboard shows (open expansion) cracks or if it's very dirty, if parts of the varnish have disappeared or if the bridge has become unglued, one usually has not to remove the strings anymore in order to do a proper job. Very rarely one finds a piano which only needs the dust to be blown off and that's that... I shrunk at allline iron or brass (on the continent we call it messling) hire (not soaking of nut). I'm afraid that one oil would further rusting in future. MR listing tape must be I guess a synomen for the 'continental' stringing hrold or felt.

"The modern back-touch strip was removed as it was harder than the
original two layers of woolen cloth. 

I became interested in such things as a detailed description of the qualities of all sorts of cloth, felt etc... and where to get these. Developing the knowledge (and other common action regulating jobs) doesn't need any explanation 'cause that should be a familiar procedure. As to the lead key weights I refer to a previous article about the subject. Lightly hammering them is the best method if they aren't too heavily corroded.

"Most of the hammers were too tight to fall under their own weight," I haven't experienced such a feature up till now, but very often the opposite. In practically 80% of the pianos I restored the bushing of the hammers had worn out excessively. In that case the actions run too light and one can do three things: renew the bushings, install new center wires with a greater diameter or leave the action running lightly as it does (which I always do in view of reversibility). Now if the hammers sit too tight around the centre pivot wires, and can compress the bushings (though I doubt it'll prove effective in the long run) or ream them a bit (reamers come in all sizes), I've never used brass o cleaner, 'cause I fear that all cleaning products affect the metal.

The method of straightening the outer compacted layer of the hammer coverings by inserting a steel U-shape wire is something quite new to me. I must try it out once. I wonder if Mr. Barnes could give me more details on the correct procedure? If the hammer shanks are corroded I always use an electric shank bender (which is very reliable because there's no danger of overheating the shanks in any way). I always replace any broken shanks (perhaps here I sin against reversibility).

The next paragraph could be somewhat unclear to some people, esp. if their native tongue isn't English. After all there are so many different sorts of actions etc... The following drawing applies to the problems discussed in this paragraph:

Again the information would be more useful if the reader were told how the damper register was straightened.

The same remark applies also for the following paragraphs: how was the damper cloth put in the required shape again? What kind of leather was glued to the notched part of some dampers? Exactly how was the piece of missing veneer replaced, the set-off of the hammers adjusted etc...?

As a final conclusion (in the light of the introduction) we must see to it that we give very concrete and tangible information. Perhaps in future all restoration people (whether we are talking about keyboards or other instruments) should start a discussion on methods systematically; i.e. make a list of all things that can be wrong in instruments and the best way to cope with it.
Construction of Viol Bellies by Bending all Staves

by Ephraim Segerman and John Duncalf

It is remarkably easy. Worked like a treat first time. And being a lute maker helps. Conceptually our method is as follows:

1. Make a standard bulkhead-type of mold like for lute backs (see Comm 267). The shapes of the bulkhead tops are the cross-arching curves of the under side of the belly and the base-board has the belly outline.

2. Saw the mold (bulkheads and all) into five strips. The saw cuts are perpendicular to the base-board and along the lines of the stave joins.

3. On each bulkhead section of each strip, draw the highest straight line that goes all the way across while staying within the section. Cut the top of the section off along that line. Note the maximum thickness amongst the pieces cut off for each strip. This thickness plus the final thickness of the finished belly there is the minimum thickness of spruce board needed at that point for that stave of the belly. We found that this did not exceed twice the final thickness.

4. Plane, cut and heat-bend spruce boards to fit onto the tops of the bulkhead sections for each strip.

5. Clamp each spruce board to its strip at those bulkhead sections needed to ensure that the board sits snugly on each section. Shoot the edges with a try plane.

6. With the above clamps still in place, glue the staves together by clamping the strips together.

7. When the glue is dry, leave enough clamps on all the time to keep the belly snug onto the mold while shaping the belly top surface in the traditional way, following arching templates.

8. Remove belly from mold and shape inside to final thicknessing.

9. If residual stress remains distorting the belly with more force than can be held by gluing to the sides, reshape belly by local bending using a bending iron, (try to avoid the stave joins; linen strips glued over the joins inside and out can avoid their opening up). This step is conjectural since we have not yet needed such reshaping. We actually didn't do it precisely this way. We designed the bulkhead sections with their straight tops beforehand and built each strip independently. Though this design is readily done with pencil and paper starting with the arching curves and belly thicknessing, we actually did it with a microcomputer that happened to be available. The programme was written as part of a suite for plotting out geometrical analyses (see Comm 5) and theoretical arching curves.

For background to the English practice of constructing viol bellies in bent staves, see Comm 289. Incidentally, it may not be a coincidence that orpharion and bandora backs (see Comm 16) are easily made this way as well.
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1981 LIST of MEMBERS — 3rd Supplement, as at 14th January 1982

* in left-hand margin denotes a change of address etc from the Main List or previous Supplements. Not all those shown have yet renewed their subscriptions for 1982, so that it may be that a few of those listed will not in fact be members for 1982.

- Ian Abernethy, 47 Main St, Heiton, Kelso, Roxburghshire, Scotland, TD5 8JR, UK; tel: Roxburgh 273.
- E.J. Baars, Robert Kochlaan 630, NL-2035 BV Haarlem, Netherlands; tel: 023-340077.
- Domenico Bertoletti, Sabbionara, via S.Antonio no.22, 38063 Avio, Trento, Italy (lute, guitar; M,R).
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- Michael J. Daniels, 6 Chestnut Hill, Eaton, Norwich NR4 6NL, UK; tel: 0603-52236 (lute, clavchd; M,P).
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- John Downing, 34 Birch Hill, Baie d'Urfe, Quebec, Canada H9X 3N8; tel: (514) 457-5845.
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- Ian Gould, 22 Dumolos Lane, Glascote, Tamworth, Staffs B77 2BX; tel: 0827-56810.
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Ian Harwood, tel: 0903-814382 (& bows).
H.A.Hens, Maaskade 121, NL-5911 EZ Venlo, Netherlands (clavchd).
Chris Isbell, tel: 0703-618875.
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André Klaassen, Oude Noord 4, Utrecht, Netherlands.
Jitze Kopinga, Sportstraat 17B, NL-6707 GG Wageningen, Netherlands; tel: 08370-20711 (fidl, lute, bagpipe, dulcimer; M,P).
H.G.Laarman, Comeniusstr. 123, NL-1065 BJ Amsterdam, Netherlands; tel: 020-152396.
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Philip Lord, tel: 02207-19735.
Robert Lundberg, 6532 SE 71st Avenue, Portland, OR 97206, USA; tel: (503) 775-9388 (lute, archlute, theorbo; M,R,C).
Alan Mills, Magill Campus, SA College of Advanced Education, Magill, SA 5072, Australia; tel: 08-332 4711.
Anthony Mooney, tel: 043-74322.
Frits van den Munckhof, Hamerstraat 52, NL-6411 CW Heerlen, Netherlands; tel: 045-716372 (violin; M,R).
Arnold Myers, 21 Campbell Park Crescent, Edinburgh EH13 0HT; tel: 031-441 3133 (all instrs, Cur; brass, C; sackbut; P).
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Richard Schaumloffel, 10 Yeo Ave, Highgate, SA 5063, Australia; tel: 08-272 3035 (hpschd; M,R).
Steven Silverstein, 376 Call Hollow Road, Stony Point, NY 10980, USA; tel: (914) 354-2349 (recorder, flute, cornett; M,P).
G.M.Simons, Soesterbergstraat 4, NL-6417 EW Heerlen, Netherlands; tel: 045-413497 (virgini, vln, hpschd; M).
A.Peter Slootweg, Theemsdreef 394, NL-3562 ER Utrecht, Netherlands; tel: 030-627418 (lute, sq.pfte, hpschd, viols, bows; M,R).
Len Stanners, tel: 665-203.
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Even though I've had to start a third page, would members please forgive me if we don't have the usual indexes of instruments and places? I'm a bit up to the eyebrows this quarter.

One you might note: The Edinburgh University Collection of Historic Instruments (Reid School of Music – what was the Galpin Society Permanent Collection, including the original Rerdall Collection) can be added to the list of Museums; Arnold Myers (see the previous page) is the curator there.

Next quarter we get the next main list; please check that you are listed as you wish to be (NB I haven't added the new zip/PO codes you sent Margaret with your renewals above, but I have noted them). You might like to bear in mind that we are a fairly informal gang and that first names are a bit more friendly than initials, but that's up to you. There is always a good deal of variation in the List, as you must have noticed (eg St, Street, Ave, Avenue) but I put them in as you send them, assuming that that is how you prefer to be listed.

The one thing I don't do, as you must have noticed also, is put in titles, whether Mr., Mrs., Miss, Dr., Prof., or any other, and that is deliberate. For one thing, so far as ladies are concerned, I usually don't know which they are (and I refuse to have female manuscripts in the list), for another, with a fair number of overseas members I don't even know which sex they are, being unfamiliar with first names in some languages, and for the third, some of our known Dr and Prof use the titles and others don't, so it seems better to have none than some. Perhaps one day a lord or a duke will join, and then I'll have to put the title in as it's part of the name, but till then I hope you agree that we're on the right lines in this respect; none of you have commented on it anyway!

Any corrections to this or the main list to me by 4th April, please; any corrections to what appears on your envelopes to Enzo Puzzovio as soon as possible.

FoMRHI Book News

There is an article in the October 1981 Scientific American on 'The Acoustics of Violin Plates' by Carleen Maley Hutchins, on how they are trying to scientifically evaluate what qualities in the raw top and back plates make a good instrument. Some of the methods would be fairly easy to apply 'at home'. I assume that much of the information in the article would also apply to other string instruments.
Production of Plectrum from Bird Feathers

It is very delicate work that requires great care, but due to the simple device invented by my friend, the composer and performer (but not a maker) - S Krutikov - he managed to do it perfectly and quickly. His device is made from medical pincers (fig 1). Both tips are ground in such a way that the line of their contact makes an arc (fig 2). It is convenient to make this with a dentist’s drill. The radius of this arc is equal to the radius of an average quill (1.2 - 1.5 mm for a raven feather, and 2 - 2.5 mm for a crow feather). The tips are turned from the outside to the required cone (fig 3), and lastly: on to the inside (concave and convex) surfaces of the pincer legs are glued thin pieces of leather (fig 4).

Plectrum production consists of two stages:

a) cut the stem of the feather into pieces (cylinders) of the required length (8 - 12 mm) with a new razor blade

b) take every cylinder length with the pincer and cut everything protruding from the pincer legs with the blade.

The finished plectrum remains clamped in the pincer exactly copying its form. Release it and clamp again the remainder of cylinder but from the other side, etc. Such cutting out saves material (fig 5).
1. The sound-hole is an important acoustic and constructive element of a musical instrument. There are two significant quantities which are known and are taken into consideration by musical makers when designing instruments:

a) dimensions of a hole which determine the resonant frequency of air volume in the body of an instrument and thus influence the timbre of the instrument's sound.

b) position of the hole, which influences the construction of the body and dictates the placing of bars on the soundboard etc.

2. Historical and aesthetic aspects of the sound-hole problem are less worked out. In the process of making some early stringed instruments I was faced with a problem of selection between this or the other configuration of the sound-hole. Studying this narrow question (on the basis of numerous pictures of instruments in the books catalogues etc), I've unexpectedly come to two very important (in my opinion) conclusions:

a) evolution of this element is subjected to a definite system bound to a great extent with time factor rather than with variety of instruments, and that's why -

b) it is possible to study changing of the sound-hole as such without taking into account the development of instruments of separate families.

3. In my notes I don't pretend to elucidate fully the question of the sound-hole evolution. It is merely the way a problem is put and possibility of its decision. In addition it is simply some thoughts and logical constructions which I want to discuss with my colleagues. There are more questions than answers ... So ...

4. First of all there was a hole. One or several but certainly in the centre (of the board) and certainly round. This form was dictated by rotation of the cutting tool, simplicity and laconicism of the circle as a geometrical figure, prompted by nature (hollow of a tree, the moon and so on). The heathen cult of the sun has consolidated this element on the soundboard of many folk instruments (here at the Ukrain - bandura, fig 4.1) till our days. In Europe it is confirmed in all stringed instruments with a low bridge: lute (4.2) mandoline (4.3) guitare (4.4). The difference is only in decoration of the hole.

5. Very seldom do we meet early instruments with holes of non-round form. It is interesting to note that the configuration of some of them is adopted from the architecture (5.1). If instead of one round hole in the centre it was drilled (or burnt through) many little ones, the figure they made differed from a circle but as a base it often remained a
6. The division of string instruments into plucked and bowed has led to a higher bridge in the second group of instruments and increasing of string stress on the soundboard. The bridge was placed in the centre of the soundboard and a longitudinal bar was required for strengthening it. So the hole became bifurcated. In the instruments of the early Middle Ages we can see two principles of the hole division, "doubling" (6.1 and 6.2) and "cutting" to two parts (6.3 and 6.4). Very often two such holes are inscribed into a circle (6.5).

7. In the course of time each of these two holes became of independent aesthetic significance. In some instruments this tendency is less expressed (7.1 and 7.2), in others - more expressed (7.3 and 7.4).

8. At last an important moment came when old traditions gave way to new searches and aesthetic trends: both soundholes departed completely from subjecting to one main figure and acquired quite independent form. At first the basic forms are old ones: square holes (8.1) and crescents. But in these crescents we see a protest against the early form (8.2).

9. By the 15th and 16th centuries forms of holes became complicated (9.1); narrow holes are often finished with a round cut, a prototype of the future baroque volute (9.2 and 9.3). Near to baroque the form of the sound-hole became more plastic, sometimes repeating configurations of a body (9.4 and 9.5). Another significant moment came when a figure of the type (9.2 - 9.5), typical for this epoch turned with its lower part and became a basis for the next sound-hole changes in the whole families of bowed instruments. The earliest similar figure I have met dated from the second half of the 16th century (9.6). This mentioned example has carried in itself traces of old forms: the narrow central part has one width across the whole length, straight, without any projections as on fig (9.5) but it is the last step to the well-known violin "f".

10. The 17th to 18th centuries is the epoch of diversity of sound-hole forms, when they take various outlines. This is the time of more or less stable traditions: the rose of a lute differs from a guitar, and even a violin from a viola etc, but even here is felt an influence of the old Medieval and early Renaissance themes (10.1 and 10.2 - compare with 9.1, 10.3 and 10.4 - with 9.5 and 9.6).

11. It remains to add that the development of the soundhole did not go straightly, there were some deviations, returning to the past (11.1 and 11.2). However these deviations were not typical and only confirmed the general tendency from simple to complicated, from \( \bigcirc \) to \( \mathcal{O} \).

Such seems to me retrospective of the sound-hole form development. I hope the enclosed table, made on the basis of this discussion and suppositions will help one more freely to orient oneself while selecting this or that form of the sound-hole suitable for an instrument of this or that epoch.
39

8.1
bowed, 1270

8.2
plucked, XIV

9.1
fidel, 1435-94

9.2
hardy-gurdy, 1511

9.3
vochette, Viola da gamba, XVII

9.4
Pochette, 1700

9.5
Pochette, 1650

9.6
Lisa da braccio, XVI

10.1 Viola
da braccio, 1686

10.2 Viola
d'amore, XVI

10.3 Violino,
1594

10.4 Viola
da gamba, XVII

11.1 Bowed
guitar, 1624

11.2 Cordaguitarre,
1812.
It has been suggested that the discussion of gracing practices which I indulged in in Comm. 359 should be continued in the Newsletter or Journal of the Lute Society. If a reply to my Comm. appears in any such publication I will gladly respond there. Yet the subject is relevant to performance of early music on all instruments (as well as voices) and deserves a wider reading audience than lute specialists.

Perhaps Early Music Magazine would be a more appropriate vehicle, but the lead time between writing and publication there is long enough to discourage an extended dialogue. The glossyness and therefore implied formality in that journal also inhibits the expression of ideas that might not be as comprehensively researched as one would have liked.

When I write ideas which conflict with those of others, I have some reason to believe I am correct, but I am much more interested in learning from the response I get than in remaining correct. The search for ultimate truth in scholarship is much more important than winning fights. The informality in this Quarterly encourages me to speak my mind with every expectation of quick recovery after being shown I was a fool and quick resolution of disagreements back into friendship.

As for reading audience, our members include a large contingent of performers as well as makers. These performers are members because they are particularly interested in the details of historical instruments. These tend also to be just those performers who are interested in the details of historical performance practices.

As for the makers, many are very interested in the topic. The makers of any sort of equipment usually keep well aware of the uses their customers put that equipment to. This is very pertinent to design and quality control, as well as to the instruction that new customers sometimes need. Musical instrument makers are not exceptions.

If other journals suspect that what I write here could be of interest to their readership, I would be most honoured either to give permission for a reprint or to spruce it up for their purposes.
Introduction

Almost all of the information on how lute graces were performed in the Renaissance that I am aware of has been published (and when appropriate, translated) by Gombosi (1) and Poulton (2),(3). The aim of this paper is to provide a much more detailed analysis of the significance of that information than that offered by these authors. There is no implication here that their understanding of the information was in any way deficient. Gombosi obviously was primarily concerned with Capriola's repertoire, and to him gracing was not an issue that warranted extended discussion. Poulton was particularly concerned with gracing, but her scholarly style has always involved presenting the historical information in as objective a way as possible, keeping speculation down to a minimum.

When those authors wrote on the subject, gracing on lutes was very rare, and there was no issue of possible misinterpretation of the information they presented. The situation nowadays is quite different. The majority of accomplished lute players are now incorporating some graces in their performances of Renaissance and early Baroque music. But the fashion is to use the inverted mordent almost to the exclusion of other graces. To be a leading lute player one needs to be somewhat of a scholar. These player-scholars cite the information printed by Gombosi and Poulton as evidence justifying their gracing practices. This interpretation is contrary to the conclusions these authors themselves came to. Since the interpretation of the evidence they presented had become controversial, it is important that this evidence should now be subjected to more detailed analysis than those authors would have considered necessary at the time they wrote on the subject.

In this Comm, I am covering the same ground as the fundamental article on graces by Poulton (2). This is inevitable, and I owe much to that article.

A note on historical method is appropriate here. If what an early writer wrote about a practice does not agree with our concept of what the practice was, it is all too easy to assume that the writer was confused, or he was mistaken either because of incompetence or accident, or he was trying to sell his own atypical ideas. One can expect these from writers of any age. In this way each of us can write our own histories with a minimum of recourse to the surviving historical information. This approach is used by a surprising number of historians. History can be more objective than what each historian would like it to be.
An objective history has a maximum of consistency between the historical story and the surviving historical information. There is still much need to flesh out the story with speculation where no historical information survives, so multiple histories are possible. Yet, an insistence on the truth of the surviving information will keep this number down to a minimum, which is the best that scholarship can do.

Thus, for an objective history, one must assume that, unless there is contrary evidence, the early writer was utterly competent, truthful, consistent and typical of his time and place. Though this is unlikely in detail, this assumption will lead to historical stories with the highest probability of resembling historical truth because it uses more of the surviving information.

In this spirit, I have extracted every bit of information I can from each source, considering what the writer wrote, and what he did not include. Some readers might judge that I have indulged in more analysis of the writings of the early writers than the casualness of these writings can justify. I strongly disagree. I believe the correct approach is that of typical detective story, where every piece of casual evidence is taken very seriously in attempting to piece together the story.

Capirola

In 1955, Gombosi published his transcription of the manuscript book of Capirola's lute music written by his student Vitali in circa 1517 (1). This is probably the earliest surviving lute sources to describe notate and illustrate the application of optional graces to notes in the music. The description is in Vitali's introduction and the quotes from that description given below are from Gombosi's translation.

A lute grace involves an initial pluck by a finger of the right hand, with all subsequent variations in sound caused by left-hand fingering. In his discussion of the ornaments Vitali never mentions right-hand plucking. We can thus not be absolutely sure that graces are described. Nevertheless since execution is described as very rapid with no comments on associated right-hand technique, left-hand-only execution is likely, so we assume that graces are described.

There are two types of graces notated and discussed. The first is notated by a number made of red dots following the tablature number (in black) that it is associated with. The appearance of dotted red numbers "means nothing else than that they should be played with a tremolo . . .". Execution is illustrated by an example where "you make a beat on the second fret of the highest string; hold fast to this beat and tremolize with another finger on the 3rd fret". To "make a beat" clearly means to stop a fret. It is not clear as to whether this term implies a pluck when the fret is first stopped or perhaps later when the tremolizing starts. Since the implication of the notation in dots is "like a tremolizing
thing that cannot be held fast by the finger", rapid appearance and
disappearance of the auxiliary note is characteristic of a tremolo. The
number of times this happens is not clear from this description.

Using Gombosi's numbering, this grace appears in pieces
numbered 4, 6, 7, 8, 13, 14, 16, 17, 18, 26, 27, 29 and 37 in the book. In
pieces 13 and 14 the dotted red number appears as the same number as
the note preceding it. By following the example, one would then expect a
two-finger vibrato (or close shake) on the indicated fret. This grace is
effective when the frets are relatively thick and the string tension
relatively low. In the other appearances of this grace the dotted red note
sounds one diatonic note higher than the black note it is associated with.

The second grace is notated by two red dots above the relevant
tablature number. It is introduced by the phrase "And if it occurs to you
to tremolize on a single note ...". Execution is illustrated by an example
where "You make a beat on the first fret of the middle string and then...
tremolize this note with the single finger". Since no other finger is
involved in the example of this grace, either there is no auxiliary note, in
which case the grace would be a single-finger vibrato, or the auxiliary
note is the open string. Neither of these is possible if the graced note is
unfretted so we assume that the appearance of two red dots over a 0 in
the 10th measure of piece 17 in the book is an error, and the dots should
be over the 3 just below on the next string in the tablature.

Capirola's second grace appears in pieces 4, 6, 7, 9, 16, 17, 26, 29,
and 37. In the music, the two red dots appear over frets 2, 3, and 5 in
addition to 1 as discussed in the example. With respect to the higher-
numbered frets, if the grace is a vibrato no further assumptions are
required. If the grace involves a lower auxiliary, the most probable
candidate is the diatonic lower note, but the open string or several lower
notes cannot be ruled out. Except for the unlikely possibility that the
auxiliary note is always the open string, at least one other finger is
involved in stopping the string while another finger tremolizes.

If we accept the diatonic-lower-note possibility on higher frets
in the second grace, then we have one fret being stopped and another
involved in tremolizing, just like in the first grace. Yet this second
grace is characterized as tremolizing "on a single note" which is
differentiated from the first grace in this respect. The only way I can
see for this to be so is if the meaning of "tremolizing" a note includes
repetition, and that a non-repeated note is not considered to be tremolized.
Then if the lower auxiliary note in the second grace is not repeated the
term does not apply to it and that grace is tremolizing on a single note
(the main one). This grace would then be the normal lower mordant. We
must assume that Capirola was consistent (unless there is contrary
evidence) so the auxiliary note in the first grace would then also need to
be repeated. That grace would then be a shake. Whether the shake
starts on the main note or upper auxiliary is not clear, but this analysis
excludes an upper mordent as a possible short shake starting on the main
note since the upper auxiliary note is not repeated in an upper mordant.

In summary, it is not absolutely clear whether Capirola's second grace (notated with two red dots over the tablature number) has auxiliary notes or not. If there is no auxiliary note, the second grace is a vibrato, and all we know of the first grace (notated by a following number in red dots) is that it has an auxiliary note that sometimes is the same as the main note but usually is a diatonic note higher. If the second grace does have an auxiliary note, then the grace most probably is a lower mordent, and the first grace is usually a shake (starting note unspecified) and sometimes a close shake. This possibility involving a lower mordent is more likely since the specification of two means of generating a vibrato is an unlikely sophistication for the time. It does not include an inverted or upper mordent as a possible interpretation.

This analysis does not differ from Gombosi's conclusions concerning the nature of Capirola's graces in any significant way, but it does differ from the conclusions of some of the upper-mordent advocates amongst today's lutanists. This point and other points with respect to Capirola's graces will be discussed further after Sancta Maria's evidence is reviewed.

Francesco da Milano and Pietro Paulo Borrono

The 1548 print of music by Francesco da Milano and Pietro Paulo Borrono (4) describes and notates a single grace.

The description (with my brackets added to Poulton's translation) (2) is: "where a circle is found ( ), two fingers must be placed on the string and the finger on the lesser number must be held firm. Pull down the string with the finger which is on the higher number [1. plucking initially] as if the voice were notated on the lower of the two frets. [i.e. the fret lower on the fingerboard (towards the bridge)] This is done because the lute will sound sweeter. But the said circle is one stroke only."

The description assumes the case where both the main note and the upper auxiliary are stopped. The first sentence tells us that at the beginning of the grace, both fingers are down on the string. The section of the second section before editorial brackets can then only mean that the finger is pulled off in such a way as to subsequently sound the note of the lower number. The rest of that sentence is unclear in itself, and the bracketed additions show two different interpretations. The choice does not effect the execution. The final sentence indicates that one right-hand pluck is involved in the grace but does not state when it occurs. If this pluck is after the operation described in the second sentence then one would only hear the main note sounding twice. Then the placing of the
plucking left-hand finger would be immaterial. Since the placing of that finger is carefully notated to be diatonically related to the main note, this possibility is ruled out. Therefore the right-hand pluck must be at the beginning of the grace.

This grace is then an appoggiatura from above. Repetition of the operation of the second sentence is not mentioned but cannot be ruled out. If it is repeated, the grace would be a shake starting on the upper auxiliary.

It is curious that only one grace is mentioned in this source and its 1550 imitation printed in Switzerland by Wyssenbach (5). All other sources of lute music from the middle of the 16th century mention none at all. But is only one grace enough for any lute repertoire? The vast majority of lute sources that mention graces at all refer to at least two. This consideration argues against the possibility that the graces as used before by Capirola and afterwards by many were forgotten in mid-century Italy and Switzerland. This leads to the suggestion that the shake (including close shake) and lower mordent were probably known and used by all then, and the reason for the inclusion of the appoggiatura from above in these publications was that this was a new grace just coming into fashion and the publishers expected that readers wanted to learn how to add it to their repertoire of graces.

This suggestion is supported by the point noted by Poulton (op. cit.) that this grace is never applied to any of Francesco da Milano’s works in this source. Francesco died in 1543 and if the grace was new in 1548, fond memories of how Francesco played his works would clearly not have included its use.

It is possible to guess at reasons why repetition (resulting in a shake starting from the upper auxiliary) was not mentioned in these publications. The possibilities are that 1.) such a shake was commonly used but not new, 2.) such a shake was not used, 3.) all shakes then were played with no emphasis on the starting note, which was so fleeting that the identity of that starting note was of no significance, and 4.) such a shake was new as well but it was deemed too advanced or its description was considered too difficult or lengthy to include. Without further information the fourth possibility would normally be the least acceptable because it lowers the information value of the precious little historical data that survives. But there is further information that pushes it to the fore, and that is in the Sancta Maria book(6). Sancta Maria described the shake as starting on the main note (see translation by D Poulton)(3) but then added that a very new practice was to start it on the note above.

Sancta Maria

Because of the great similarity between vihuela and lute technique it is appropriate to consider sources relating to graces on the
vihuela together with those of the lute. Sancta Maria’s book was obviously primarily written for keyboard, but the apparent claim that much of it is relevant to vihuelas as well needs to be respected. To summarize Sancta Maria’s graces, he described the redoble, repeated trill, special minim trill and two simple trills. The redoble can be made only on semibreves and it involves both a lower and upper auxiliary, one of which must be only a semitone from the main note. The initial description could be expressed as an initial lower mordent followed by a shake. The shake stopped well before the end of the note being graced, allowing the final main note to sound over a considerable and probably majority fraction of the time available. This is true for all of Sancta Maria’s graces. The later comment by Sancta Maria mentioned above (concerning the new way to start the shake) also applies to the redoble, so the new way to start a redoble is with a turn from above.

The repeated trill is the shake we have already mentioned. It is performed only on minims. The special minim trill is a turn from above, allowed only when the upper auxiliary is a tone above the main note and the lower auxiliary a semitone below. This is also described as a new grace. The crotchet trills are upper and lower mordents, applied to crotchets and exceptionally “by a miracle” to quavers.

Concerning where the graces are used, this is mentioned only with repeated trills and simple trills. Repeated trills “are done on all minims where it is possible for the fingers to do them.” The lower-mordent type of simple trill is used on alternating crotchets in ascending scalewise passages while the upper-mordent type is used on alternating crotchets in descending scalewise passages. In addition an upper mordent is appropriate where a note marks the change between an ascending and descending scalewise passage of crotchets. In descending scalewise passages which are not a sequence of crotchets, the upper mordent should also be used on two adjacent crotchets following a semibreve, and crotchets following dotted minims.

The two final examples of the use of simple trills include, besides the grace marks associated with crotchets as discussed, also grace marks associated with notes not mentioned in the text: dotted minims and the final breve of the passage. It is rather more likely that the graces appropriate to longer notes (repeated trill or redoble) are intended here (to illustrate the juxtaposition of the graces on long and short notes) than the application of the simple trills being discussed to these long notes.

The notation used to show the execution of the various graces are not of the same time values as the notes they apply to. The old redoble is written as 4 or 8 quavers and a breve to replace a semibreve, the old repeated trill is written as 8 quavers and a breve to replace a minim, the special minim trill is written as a quaver rest, 3 quavers and a breve to replace a minim, and the simple trills are written as 2 quavers and a semibreve or breve to replace a crotchet or quaver. The most probable intention is to show the graces in slow-motion, and the fast notes of each grace were intended to be played as fast as possible.
Sancta Maria makes it quite clear that the initial upper auxiliary note of the three new graces (new redoble, new repeated trill and special minim trill) does not sound on the main beat but just before the beat in the first two and just after in the third. This approach reflects a rather unique theoretical purity, insisting on main beat consonance. Since there is no evidence that the first note of a grace was dwelled upon in this period (as was often the case in later gracing), it is quite possible for the ear not to care whether that note appeared on or slightly before or slightly after the beat. This would allow musicians to play it on the beat if they wished while theoreticians could maintain their consonant purity.

Sancta Maria describes one type of redoble and four types of trills (he states six types, considering simple trills with the auxiliary note a semitone away from the main note as different from it being a tone away, but with no distinction in application). The category of "trill" includes old (starting on the main note) and new (starting on the upper auxiliary) shakes, a turn from above, and upper and lower mordent. He states that mordents are used on crotchets rather than shakes because of the time limitation.

This is no justification, as some players nowadays assume, for using the upper mordent as an abbreviated old shake on shorter notes in all cases where a shake seems to be appropriate. Sancta Maria offers no sanction for using a mordent except in scalewise passages, and then the choice of which type of mordent is clearly prescribed according to which direction the scale goes in.

In the 16th century there was much travelling of musicians between musical establishments of the church and the nobility in different countries, and so there is some reason to expect a degree of uniformity in musical practices throughout Europe, with of course, local variants and different specific preferences of individual musicians. It is therefore not unreasonable to assume that Sancta Maria's writings largely represent practices not confined to Spain. A comparison with previous writers on graces is thus of interest.

Sancta Maria and Borrono

The appoggiatura from above as illustrated in Borrono's music and described in the aforementioned print of music by Francesca da Milano and Pietro Borrono, is not mentioned in Sancta Maria's book. Possible reasons are that 1.) this grace was not used extensively in Spain in the 1550's, 2.) it was used on plucked instruments in Spain but not on keyboard instruments, 3.) it was extensively used but Sancta Maria disapproved of it, or 4.) the Spanish equivalent of this grace at the time was the turn from above. There is no basis to choose between these possibilities, but it is worth commenting that the appoggiatura from above could easily have been considered by Sancta Maria and some of his contemporaries as more flagrantly threatening the principle of consonance.
the beat than the turn because, not having both upper and lower auxiliaries, it pulled tonal focus away from the main note more.

**Sancta Maria and Capirola**

Since, according to Sancta Maria, the shake starting on the upper auxiliary was new in the middle of the 16th century, earlier shakes such as those of Capirola are most likely to have started on the main note. In the book of Capirola's music the shake occurs once on a semibreve (\(\text{\breve{}}\)), about 3 dozen times on a minim (\(\text{\textordm{\textorth}'}\)) and about 3½ dozen times on a crotchet (\(\text{\textorth}\)), the last almost always occurring in scalewise descending passages. By comparison with Sancta Maria, this could be taken to imply that the shake on a crotchet could have been an upper mordent, contrary to the analysis of the instructions in the Capirola book given above. Capirola's shake on a crotchet (or the old short shake) would have sounded the upper auxiliary twice, thus totalling 5 notes to the grace as opposed to 3 notes for the upper mordent. If there was not enough time for a proper short shake in Sancta Maria's crotchet, how could there have been in Capirola's crotchet? I know of no data to indicate that the actual time for the two crotchets was any different or that Sancta Maria's harpsichord had a particularly slower action than Capirola's lute.

The crucial issue here is the possibly different criteria that the authors had for what fraction of the crotchet's time had to be devoted to the final main note of the grace. Sancta Maria notated the mordent as two quavers and a semibreve or a breve. If taken literally, this would give the final main note either 4/5ths or 10/11ths of the crotchet's time. It is unlikely that he intended his notation to be taken literally, but I would guess that he intended to convey the idea that the final main note should last rather more than half of the crotchet's time. Sancta Maria, being rather a theoretical purist and not wanting graces to interfere with the clarity of the harmony, would likewise not want them to interfere with the clarity of the melodic sequence. A relevant comment of his is: "redobles must not be very long, or the music is made ugly."

Capirola could easily not have had such scruples. If the length of his final main note of the grace could be shorter, a proper short old shake could fit into the crotchet time with the fast notes no faster than those of Sancta Maria. This is not much faster than the written plucked semiquavers that appear in Capirola's music.

In the Capirola book, the lower mordent occurs about a dozen times on minims and about two dozen times on crotchets. In the latter they almost always appear in ascending scalewise passages. Except for the use on minims, there is no conflict between this usage and that of Sancta Maria.

Capirola's close shake (or vibrato) appears about a half-dozen times, always on crotchets. It is not surprising that this grace was not
mentioned by Sancta Maria since it is not possible on the harpsichord or organ. It is possible on the clavichord, and the omission leads us to wonder whether the clavichord was popular in Spain at that time.

Other points about Capirola's graces deserve mention. Within a piece, a particular grace tends always to appear in the same place within a semibreve bar. This place is sometimes on the main beat at the beginning of the bar, but in many more pieces it is on the subsidiary beat half-way through the bar. Graces don't seem to appear when the music goes into triple time.

Finally, since the old redoble of Sancta Maria was not new in his time, did it appear between his and Capirola's time? This may be the wrong question to ask. The redoble was supposed to be used only on semibreves and such notes rarely appear in lute music except as the final note of a cadence. At that point a lute player would probably use a cadential division and not a grace. The difference between a division and a grace is not as clear on a keyboard instrument as it is on a finger-board instrument. As a grace, the redoble may not have been used much on lutes or vihuelas.

**Henestrosa**

Writing probably at the same time as Sancta Maria (mid 1530's) Henestrosa also wrote a book (7) of instructions for various instruments. In contrast to Sancta Maria, Henestrosa concerned himself with the differences between the instruments he discussed. In Poulton's translation (2), Henestrosa wrote the following concerning graces on the vihuela: "The quiebros is to shake the finger on the string and the fret that you wish to play, or to keep it in place and shake with the second or third finger one or two frets higher."

The terminology here is remarkably similar to that in the Capirola book. They both present the same problem of uncertainty as to whether there was a lower auxiliary note when the main note is being shaked. But Henestrosa does not give us the added information that allows us to assess the probabilities of choices. All one can then say is that Henestrosa's first grace is a single-finger vibrato if there is no auxiliary note or a lower mordent or repeated lower mordent if there is. His second grace is a shake of unspecified type.

The description of graces do not include the possibility of a grace having both upper and lower auxiliary notes. It is no surprise that this excludes the redoble on the vihuela, but it also excludes the turn. Perhaps he was deliberately being sketchy because gracing fashions were rapidly changing and he was not willing, as Sancta Maria was, to take a position with respect to the new graces starting on the upper auxiliary. Of course, he may have just described the most important graces, which are most likely to have been the shake and lower mordent.
Waissel

The final 16th century source relating to graces on the lute is that of Waissel in 1592 (8). In Poulton's translation (2), he wrote: "Mordanten are made by the fingers of the left hand, but only in stops of whole or half beats and in runs where four letters are on one beat. In 'Coloraturen' they are not used because of the speed when eight or sixteen are on one beat, except sometimes at the end. Mordanten serve to make the playing lovely; they are made sometimes with the forefinger sometimes with the middle finger and sometimes with the little finger in such a way that the fingers are put a little later on the letters and moved two or three times up and down. Of these things certain rules cannot be described, they must be left to time and practise."

It is most probable that Waissel's whole beat was a semibreve, so that 'Mordanten' are applied to semibreves, minims and sequences of crotchets, and usually not to quavers and semiquavers. This corresponds with what Sancta Maria wrote. The term 'letters' could mean the notated or main notes or it could mean the fret positions. Only one finger seems to be moving in any particular execution of the grace so two pitches are involved. That it is "put a little later on the letters" implies that the lower pitch is the first. That the finger motion is repeated implies that the grace is either a shake starting on the main note (excluding an upper mordent) or a repeated appoggiatura from below.

If the sequence "up and down" has significance, a start with "up" is consistent with "a little later" if the sequence refers to finger position rather than direction of motion. The final "down" would then favour the second possibility for the nature of the grace. If Waissel was writing more generally, giving no significance to the sequence "up and down", then each of the possibilities or both are equally probable. No other grace is consistent with his description.

It is unlikely that the second grace, which includes the new element of starting on a lower auxiliary, was the only one Waissel used. Perhaps he was explaining a new grace to be added to the reader's repertoire of graces, or he was being comprehensive, in which case that repertoire consisted of either the first or both possibilities, or he was describing the most usual grace, deliberately ignoring the others. It seems to me that the final choice of those three is the most likely. The first, though, cannot be dismissed lightly.

Robinson

That graces starting on the lower auxiliary were in the air then is demonstrated by Robinson's book (9) which was published about a decade after Waissel's. In it Robinson explicitly describes the execution of but one grace, the appoggiatura from below, which he calls a "fall" (p. 112). The context is the lute master's response to the student's
question of "when and how to use a fall with a relish." There is no hint here of discussing graces comprehensively. It could very easily be a request for explanation of the latest gimmick being discussed in the alehouse.

The master's response makes it clear that a fall can occur with or without a relish. His relish then was not a general term for grace which could have included the fall.

On the previous page (p. C v), Robinson discusses which finger is used to relish. Since it is only one finger, the relish involves but two pitches (with the possibility of a close shake included). In the example of the fall followed by a relish (p. Cij r) the relish's two pitches are the main note and the upper auxiliary.

Two pages earlier (p. C r), Robinson discusses "a general rule to grace" where the term 'relish' is used generally, as if it is a synonym for 'grace'. This section includes the famous statement "note that the longer the time of a single stroke, that the more neede it hath of a relish, for a relish will help, both to grace it, and also it helps to continue the sound of the note his full time; but in a quicke time a little touch or jerke will serve ...". Thus both a shake lasting the full length of a long note and an appoggiatura from above would most probably be examples of relishes.

This is the point that specific instructions on how to play the relish that supports a long note or the "touch or jerke" would be appropriate, but they are absent. Possible reasons for omission are 1. that the execution was so well known and obvious, it would be a waste of space, 2. that the execution of a relish was so complex that its description would take too much space, or the relish was a family of graces and the explanation of all members would take too much space. The first possibility is argued against by the fall, as obvious a grace as can be imagined, being explained. The second possibility is argued against by noting that at least the sequence of notes in the most complex grace is easily notated in tablature. The third possibility is argued for by our expectation that a variety of graces (i.e. both long and short shakes starting on the main note and on the upper auxiliary, close shake, appoggiatura from above, and lower and upper mordents) should have a place in Robinson's terminology.

The lower mordent having a lower auxiliary is allowed to be included in the family by Robinson's statement that one finger is involved in executing a relish, and his example of a relish with an upper auxiliary that follows the fall does not rule this possibility out. This inclusion makes the association of the name 'relish' with the lower mordent a half-century later in the Manchester Gamba Book less extraordinary than otherwise.
Robinson's description of the relish in terms of only one moving finger is not consistent with including the turn from above as an example. Yet this was one of the old graces in use since the middle of the 16th century, and from the criteria of old vs. new and graces starting from the main note or upper auxiliary vs. those starting from a lower auxiliary, the turn from above would easily fit into the relish family. If it was not a very prominent grace, Robinson could easily have not considered it worthwhile to mention as an exception.

Robinson's general comments on graces discussed above seem to refer only to relishes, but the "touche or jerke" phrase does not read as necessarily referring only to relishes. It could refer to an appoggiatura from above or a mordent amongst the relishes, but it could also include the fall. Nevertheless, it is clear that Robinson considered that relishes were the basic graces that a student needs to learn, and that the fall was somewhat exceptional, mentioned almost by accident in response to a very specialized question.

If, as Robinson implies, the term "relish" included all of the major graces used, and the fall was different and of lesser importance, then it is likely that in earlier times the terms "relish and "grace" were equivalent, and that the fall was of relatively recent origin.

Robinson's separation in terminology between the fall and almost every other grace is attractive because very many of the English tablatures use but two grace signs, the # being much more prevalent and probably associated with the term 'relish' and the ♦ being rather less prevalent and probably associated with the term 'fall'.

It is quite possible that the 'fall' represented a class of graces just as the relish did, with the appoggiatura from below being only one member. As the relishes are presumed here to be all of the old graces that started on the main note or the upper auxiliary, the falls would be the new graces that start below the main note. A most probable member of this class is the conjunct double appoggiatura from below (a scalewise slur up to the note from a third below). Donington calls this grace an 'ascending slide' and illustrates its currency in Italy around 1600 by mentioning its description in 1594 by Bovicelli (which involves the first note being held) and in 1602 by Caccini (who deplored its extensive use with the first note held, suggesting that the first note should be "but lightly touched"). Perhaps a repeated appoggiatura from below could be another member of this class. The turn from below could also be a member if it was considered a grace in its own right, or it could have been considered a compound grace, one of the many combinations of a type of fall followed by a relish.

In this paper I shall use the term "fall" to denote both a class of graces (especially with respect to notation) and a specific grace (appoggiatura from below). I expect that this attempt at imitating early
usage does not lead to more confusion than my attempts to express the ideas here in modern language.

Dowland

The Dowland translation of 1610 (10) of the instructions by Besardus (originally published in 1603) mentions graces once, in a statement explaining why they are not described. The terminology used is "sweet relishes and shakes". On first sight this terminology seems inconsistent with that of Robinson since Robinson's shake was a type of relish. But it is quite possible that the distinction was between "sweet relishes" and "shakes". Robinson wrote (p. Cv) "... either a strong relish for loudness, or a milde relish for passionate attentio..." Different types of relishes could have had different emotional connotations (as was mentioned by Simpson much later), and a shake (perhaps Mace's hard shake) may have been the main "strong relish" and other graces could have served as "sweet relishes" (Dowland) or "milde relish[es]" (Robinson).

The above discussion of Robinson's and Dowland's comments concerning graces is not consistent with what I wrote in Comm 359, and is intended to replace them. This change does not materially affect the argument presented there, which I still subscribe to.

English Manuscript Tablatures

As stated above, Robinson's separation of graces into relishes and falls has a ready parallel in the manuscript tablatures that use two grace signs. We shall assume that Robinson's terminology was general in the very beginning of the 17th century. In those tablatures using only one sign, this sign could well represent the relish family of graces. In those that use more than two grace signs, it seems reasonable to expect that the grace category of 'relish' was split into components. These might still often represent sub categories rather than specific graces. Of course, new signs will also have been used for new graces.

As a logical consequence of Dowland's distinction mentioned above, later manuscripts often separated shakes, particularly long shakes, from the other relishes. In the following two examples, the shakes retained the # sign. These are the tables of graces in the Downes ms. of c. 1615 (16) and in the Board Book of c. 1625 or 1630 (12). The other graces in the Downes ms. are the 'falle' (with the X sign), the 'relish' and the 'tast' (the signs for the last two are illegible). All except the 'tast' are clear enough. The 'tast' could well be the 'tasto' or acciaccatura, which is executed by simultaneously playing the main note (usually on an open string) and the appoggiatura from below to that same note but on another string. This lovely grace, which starts with a clash and resolves on a unison, was hardly ever specifically notated in lute music this early in the baroque, perhaps because it was considered as a
type of fall.

In the Board Book table, the fall category is represented by a 'fall forward' with the sign \( \coffee \). A 'slide' is listed, notated by a curved slur line under the notes played with one right-hand pluck. I have been following Donington in using the term 'slide' for three slurred scalewise notes, but the Board Book usage includes not only these but only two notes as well, and not always in scalewise relation. The Board Book notation is a way of writing out any grace. The graces so written out include the appoggiatura from above (but with the initial auxiliary note with sometimes equal and sometimes more time than the final main note), the appoggiatura from below (with equal time for the two notes), the ascending slide (with the final note longer than the other two) and the descending slide (a scalewise slur from a third above; both with equal time for all three notes and with the first note held much longer than the other two).

Of the other graces in the Board Book table, the 'long shake' represented by \( \# \) has already been mentioned. The 'pul back' represented by \( \) is most probably the normal appoggiatura from above with a very short initial auxiliary note. There is only one more relevant entry in the table represented by \( + \). We would expect it to refer to at least the major remaining types of relish: the short shake and the lower mordent. The table entry states "to beat downe one finger with a shake". This can readily be construed to represent these two graces, but other interpretations are obviously possible and have been made. Since the sign appears once associated with a note on an open string, an interpretation exclusively in terms of a grace with a lower auxiliary is not tenable without postulating that the scribe made a mistake.

There are several examples of two grace signs applying to the same tablature letter. This most probably means two graces to be applied in tandem. When one grace follows another, if one thinks in terms of how the action of each finger converts the previous note to a new note, the first note of the second grace would have to duplicate the final note of the first grace. On the other hand, if one thinks of the overall sequence of notes as the sum of the sequences defined by the component graces, this overlap will not occur. Thus a turn from below would be the sum of an appoggiatura from below followed by an upper mordent according to the first view, or followed by an appoggiatura from above according to the second. Mersenne (15) seems to have taken the second view when describing this grace as part of the seventh in his list (see below). My suspicion is that this is the relevant view for interpreting the tandem graces in English tablatures.

In the usual circumstance when this combination of graces occurs on a long note, the second grace is probably some type of long shake (taking Robinson's advice). Since the first grace most probably ends on the main note, the shake would start on the main note according to the first view above, and on the upper auxiliary according to the second.
In her article on graces (2), Poulton mentions a grace sign looking like a comma that "Occurs in a limited number of pieces in [B. L.] Add 38539 [sometimes called the Sturt MS], always on a note immediately preceded by the note above. Often occurs in fairly fast runs." She has remarked (11) that this context fits the criteria for the use of the upper mordent that I presented in Comm 359. This is a very likely possibility, but the short shake, as seems to have been used by Capirola in this context, cannot be ruled out. I think that it is possible that the special symbol II that appears in the Board Book (12) similarly could have referred to an upper mordent.

A working hypothesis that I have been following when playing the late 16th and early 17th century English repertoire, and against which I have so far found no evidence, is that there were pairs of graces that always used the same sign and were considered equivalent and freely exchangeable. The choice between them was largely one of fingering convenience. One such pair is the appoggiatura from below and the ascending slide. Another is the short shake and the lower mordent.

An equivalence between the appoggiatura from below and the ascending slide may be behind Mersenne's 'mistake' by replacing the former by the latter while describing the execution of his eighth grace (see below).

In playing the English repertoire, I am most tempted to interpret a fall sign as an ascending slide when the notated tablature letter is a third above the open string. With the first note on the open string, this grace falls so easily under the fingers. This has led me to experiment with the converse grace in the few pieces where a unique grace sign is almost always applied to the open string and the various relishes are already otherwise notated or seem inappropriate. The descending slide falls equally well under the fingers. The aforementioned inclusion of this grace amongst the written-out 'slides' in the Board Book testifies to its aesthetic acceptability in England at that time.

A note about the variety to be expected amongst shakes might be in order here. They could be either long or short (the latter with two soundings of the upper auxiliary), they could start either on the main note or the upper auxiliary, the first note could be either emphasized by being louder or being held for a longer time or not (in which case it may be so fleeting that which note it is may not be audibly obvious), and the speed by which the notes are produced may either stay constant or change in various possible ways (e.g. accelerating) during the shake.

There is some question concerning how completely the notated graces represent the actual gracing heard in a typical performance. It is quite possible that they were often just a rough guide, with the scribe noting only what he considered was essential to his interpretation. Graces could have been used at additional places in the music but not notated.
either because the context made their use obvious or their use with the same basic interpretation varied from performance to performance. Examples of the obvious could be 1. a phrase musically related to one with already-notated graces, 2. mordents on scalewise passages, 3. a long shake to sustain a long note or 4. a "little touch or jerke" applied almost unconsciously when the fingers happen already to be appropriately positioned. We must also bear in mind that the other types of ornamentation such as time variation (e.g. dotted rhythms), division (especially at cadences) and right hand devices (e.g. strums or arpeggiation) could have been used to decorate passages in conjunction with or instead of graces, and these could be equally unnotated.

Other graces described in early 17th century French books

Nicolas Valet in his book published in 1620 (13) mentions a grace marked by a double cross which was not included amongst the graces he described in his earlier book of 1615 (14) and not described previously in any source. This is a single-finger vibrato where the thumb leaves the back of the neck and the hand violently oscillates along the fingerboard direction. It must have instantly achieved immense popularity since Mersenne in 1636 (15) when describing it, mentioned that it was overused in former times (and by reaction underused at his time of writing). The sign that appears in the Board Book and is elsewhere called a 'whip', could easily be this grace.

Mersenne's book offers a new grace, but a look at his whole catalogue of graces might be of interest here: He calls all graces 'tremblemens' including the fall, so the term when applied to a finger's motion does not necessarily imply repetition. This contention is supported by the grace he describes first, which has no name other than 'ordinary' (vulgaires tremblement). Details such as the placing of the finger are carefully stated and 'tremblement' is used with reference to its motion but the sequence of notes is never mentioned. He does indicate that it has an upper auxiliary. Possibilities are shakes of all sorts (except the close shake) the appoggiatura from above and the upper mordent. The appoggiatura from above must be included because there is no place else for it and it was certainly in the repertoire since it is described (with the name 'accent') as the beginning of the 'battement'. It is unimaginable that shakes would not also be included in the first grace, but the upper mordent is an open question. Mersenne's lack of distinction between the shake and appoggiatura from above parallels Robinson's before him and Mace's use of the same sign (for the backfall and shaked backfall) afterwards.

Mersenne calls his second grace 'accent plaintif' and his description clearly indicates that it is a fall. His third and fourth graces are called 'martlemens' and they turn out to be lower mordents, the former with the lower auxiliary on the open string, and the latter with it stopped. A repeated mordent cannot be ruled out. The fifth grace, called 'verre cassé' is the aforementioned violent vibrato. Mersenne's
sixth grace is the new one, and he mentions that it is more practical on the violin than on the lute. It is called 'battement' and it starts with an appoggiatura from above followed by repeated rapid playing of the main note with the right hand for the rest of the note's time. There is some doubt as to whether this should be called a grace at all.

The seventh and eighth graces are unnamed and are combinations of the others. The seventh is stated to be a combination of the second and sixth, i.e. joining the accent (plaintif) to the battement. This amounts to a fall and appoggiatura from above (= a turn from below) + battement proper. The instructions for execution stop just before the battement proper should start, but it is expected that the continuation would be understood. The eighth and last grace is stated to be a combination of the second (accent plaintif or fall) and the fifth (verre casse or violent vibrato). The instructions for execution describe an ascending slide rather than the appoggiatura from below given in the definition of the accent plaintif.

There are some differences between this review of Mersenne's graces and the summary of them in Poulton's fundamental paper on graces. These should be ironed out in due course. My French is not all that good and I wouldn't mind being proved wrong.

Conclusion

In this paper I have attempted to review critically the information I know of about graces on the lute in the Renaissance and early baroque, and to speculate on how that information can be fitted into an overall view of the development of gracing during that period. This view of gracing practice during the period is outlined in the diagram which follows.

Perhaps the informed speculation here that might attract the widest interest is the association of the ubiquitous two grace signs in c. 1600 English lute music (and perhaps harpsichord music as well) with Robinson's fall and relish, each being a class of graces: the fall is the new set which is characterized by beginning with an auxiliary note below the main note and the relish is the old set which is characterized by beginning with either the main note or an upper auxiliary. Various writers have speculated on the interpretation of these signs in the past and, using internal evidence from the music, suggested that they could have meant particular members of these classes. It has been widely held that these choices are not completely satisfactory in all contexts. This problem vanishes in the hypothesis here, where the assumption is that the notation signifies classes of graces rather than particular ones. Besides having some historical basis, this assumption is attractive because the wide variety of graces involved makes understandable the reluctance of contemporary authors to explain gracing practice in what seems to us as a satisfactory way, and it provides the means for realizing the richness and variety of performance contemporary accounts lead us to expect.
Players certainly need guidelines on early gracing practices, and this is what I am trying to offer. Though much here is of course highly speculative, alternative speculations, though easily possible, need carefully to be evaluated by comparison with the surviving historical information. If the competing set of speculations is based on an attitude towards history that does not try to be objective, there is no basis for discussion. If they are associated with an attempt to be objective, I look forward to some fruitful correspondence.

Conjectural Chronology and Frequency of Grace Usage

<table>
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<th>Grace</th>
<th>Type</th>
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<th>1600</th>
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<tbody>
<tr>
<td>Shake</td>
<td>close</td>
<td>C</td>
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<tr>
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<td>lower</td>
<td>B</td>
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<td>&gt;B</td>
<td>C</td>
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<td>A</td>
</tr>
<tr>
<td>Shake</td>
<td>above</td>
<td>&gt;A</td>
<td></td>
</tr>
<tr>
<td>Turn</td>
<td>above</td>
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<td>Turn</td>
<td>below</td>
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<td>&gt;C</td>
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<tr>
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<td>Vibrato</td>
<td>violent</td>
<td>~&gt;B C</td>
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Key:
- > first popular use
- A used very often in most pieces
- B used moderately often in most pieces
- C used occasionally for special effects

ca 1600 relish includes first seven of list
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FoMRHI Comm. 399
Jeremy Montagu


I owe Peter and Ann an apology for this; they gave me a copy at the Horticultural Hall and I forgot about it till after I'd finished and sent off the last Q.

They have produced, very concisely, a complete manual for do-it-yourself Flemish decoration. The booklet is divided into three sections, the first historical and descriptive, telling us what sort of decoration was used, the second practical, telling us to do it, concentrating on the papers and laying them onto the harpsichord, the third, also practical, describing how to decorate on top of the paper, adding the lines and mottoes, etc. Every process, tool and technique is explained with exemplary clarity; there are recipes for paints, pastes and varnishes. As the authors say in the preface, there is no one 'right' way to decorate a harpsichord, but these ways described here are tried and tested and known to work; these recipes are known to produce certain results, and there are a number of warnings of what will happen if you try various other ways and recipes.

If you are making 'Flemish' harpsichords and virginals and want to do your own decorating, this book is a must. Not only is it as good as I've said above, but the authors are the experts on the subject and, as you probably know, they have recut the wood blocks necessary to produce reproductions of the original papers, and many of them are now available again from them.

FoMRHI Comm. 400
Jeremy Montagu


It's difficult to know how to head this review; is John the author or the editor? He has written the first chapter, 'An introduction to the harpsichord' and the lead into each subsequent chapter, but all the rest is by the individual makers. Unlike Zuckermann's book of similar coverage, this one lets each maker speak for himself. The result is variable. From some one gets an insight into the whys and wherefores of their work and their choice of instruments; from others one gets little more than a string of words. Certainly it is fascinating to know from Martin Huggett why he still believes that William de Blaise was on the right lines, just as it is to know from others that the old makers knew what they were doing and that we do something else at our peril. Whether the result is worth the rather high cost to those of you who read FoMRHIQ, I'm not at all sure -- I think it's aimed at a rather different market. Certainly it's worth looking at a copy and deciding for yourself, and if you are interested in knowing more about your colleagues, and in many cases fellow-members of FoMRHI, and their philosophy as well as something of their techniques, then it's worth having a copy.

The makers covered are: Arnold & Carl Dolmetsch, by Carl Dolmetsch; John Barnes on plans and drawings, with a good list of what's available from whom, which alone might make the book worth having; Malcolm Rose; Andrea Goble (now the head of Robert Goble & Son); Dave Law on the London College of Furniture, which is very interesting in its descriptions of the College; John Rawson, thought-provoking as always; Mark Stevenson, with a number of important
It is .. a supreme anachronism to go to the lengths of playing music on the correct instrument for its époque and then to provide an instrument which has a sonority which the composers could never have lived to hear," and an emphasis on the fact that many of the original makers were very quick workers, putting a carcase together in a matter of hours rather than days, and that this radically alters the tensions built into an instrument; Dennis Woolley; Trevor Beckerleg, with a strong preference for quill over Delrin (it's interesting to meet in the same book a number of makers, some of whom swear that they can't hear any difference between the two and others who are convinced that there is all the difference in the world) and stressing the importance of failure and making the point that a number of instruments surviving today may have been considered failures in their own time - do we really know what were the preferred criteria in any of the historical periods? - and also making the point that most of the instruments produced today "are not ideally suited to the music of any of the major composers in the repertoire"; Donald Garrod; Martin Huggett, already mentioned above as a pupil and follower of de Blaise; John Morley; Robert Davies; Ann Feldberg and Peter Whale and two of their colleagues, Timothy Constable and Christopher Jones; Derek Adlam, with an emphasis on precision and that "instrument making is engineering in wood"; William Mitchell; Richard Clayson & Andrew Garrett; Peter & Ann Mactaggart on decorating of all periods, not only the Flemish style covered by their book reviewed above; and John Paul himself.

Skimming through the book to write the above, and noting all the passages I'd marked as especially interesting (not just the ones quoted above), makes me think that I was unfair above and this is a book that any keyboard maker should read. Indeed it could also make makers of other instruments think again about what they are doing and why they are doing it the way that they are. Perhaps we need a whole series of books like this - The Modern Lute Maker, Viol Maker, Recorder Makers and the rest.


A third in the series reviewed a couple of Qs ago. Like the previous ones, the descriptions are very summary, confined to the marks and the number of keys etc. As before, however, if you want to know where things are, such check-lists are essential material, and if double-reeds are your line, write to the Reid School of Music, Teviot Place, Edinburgh EH8 9AG for a copy. This one covers the oboes, a few shawms and musettes as well, including d'amore and cor anglais, and bassoons, and it includes as well (were they double reed instruments? I thought that the whole point was that they were single reeds) the Caledonica and the Alto Fagotto, the former unique and the latter one of only two known.

For its size and its price this gives excellent coverage, especially biographically, of music and musicians 'from the Troubadours to Monteverdi'. It's no Grove, of course, but for those of us who can't afford Grove but who still want to know who x or y were, it's going to be very useful. Chris Page had a look at it for me and says that he's reasonably happy about the musical and biographical entries. I'm less happy about the instruments, especially about the illustrations, a good many of which have been drawn, not from contemporary sources, but from bad modern non-reproduction instruments. Perhaps a modern dictionary should be realistic and recognise the modern state of the art, but I don't really see why a crumhorn should be shown with a key above the finger holes, and I certainly object to a tenor recorder with a side-action key on an axle between pillars and with finger holes dotted around from side to side of the central axis. Nor do I see the relevance of a modern South Chinese shawm (captioned 'Oriental shawm') to that subject; we are agreed that the shawm 'came to Europe from the Saracen armies during the Crusades' (for a small dictionary like this, that's near enough, without worrying about other possible lines of transmission), but that the Crusaders got as far as Canton is a new one on me.

While they seem to bow to Laurie Wright's reversal of gittern/citole nomenclature, the instrument illustrated under gittern seems to be an attempt at drawing what used to be called a gittern before GSJ 30 appeared, i.e a citole. And heaven knows where they got the maker picture from, especially the beaters. Some of the descriptions are debatable too. Every picture of chime bells I can think of off hand shows them with clappers, not 'tongueless' and they are normally shown clouted with carpenters' hammers, not 'small beaters'. The mute cornett is described, but the straight ordinary cornett is ignored. Could one say that the curtal had a 'widely-expanding conical bore'? I can't see how a horn can be described as having a cylindrical bore; how did it fit over the core on the animal's head if it had? Nor why it is described as having 3 finger holes; there aren't many medieval pictures of finger-hole horns, but those that I know show more holes than that, and they were combined (which we don't know) with hand-stopping as in Sweden more recently, even if there were only three holes, they could produce more than six notes. I wouldn't mind knowing the evidence for the statement that the 16th century trumpet was normally pitched in D; admittedly I don't know any 16th c scores with trumpet parts written a tone lower than the rest of the music, but the score of L'Orfeo, a century later, seems to suggest C as the key.

Most of the instrument articles are so short that there isn't much room for debatable points (though the 7-lineclaviorganum manages two: was it experimental and were its tuning problems intractable?); longer entries, eg bagpipe (how do we know the mouthpipe had a non-return valve - many players today use their tongue - or that there were 8 finger holes, and why did its continuous sound 'make it more suitable than other wind instruments for dance music?'), drums and percussion, manage to include rather more.

It's still well worth buying a copy if you want a quick reference for musicians and composers, for which it'll be a very useful handbook,