FOMRHI Quarterly

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FELLOWSHIP OF MAKERS AND RESEARCHERS OF HISTORICAL INSTRUMENTS

Hon. Sec. J. Montagu, c/o Faculty of Music, St. Aldate's, Oxford OX1 1DB, U.K.
A happy new year to you. To even fewer of you than usual, and this year: it’s not your fault, it’s ours. Last quarter there was a right cock-up (English for incompetence and chaos). What happened was that we all made a special effort to get the Q out really fast so that we could have it at the Early Musical Instrument Exhibition at the Horticultural Hall. After strenuous efforts on Eph’s and the printer’s part, we succeeded, and everybody who was there got their Quarterly (and their renewal forms) hot off the press. When the Exhibition was over, Eph took all the remaining Qs back home, with a list of everyone who’d had a copy, to send the rest out by post. Then the trouble started. There’s a very true saying: “If you want to make a mess of things, ask anybody around; if you want to make a real cock-up, add a computer”, and we did. Eph & Djilda’s computer prints out the mailing labels, and it not only crashed but it chewed up the mailing list as well. It took quite a while to get the machine sorted out, and even longer to unscramble the hash it had made of the database. So that, I’m afraid, is why you got your Qs so late. We hope that it is OK now, though there is a fear that the machine may have come to the end of its natural life; if that’s so, there may have to be a period of typing the list out by hand, which costs money and takes time, which’ll last till NRI can afford a new computer, with all the horror of translating all discs to run on a new machine – this is something that I’d not thought of as a risk, but is worth drawing to the attention of any of the rest of you who, like me, depend on one of these toys. What do we do when they wear out? The chance of any new machine being able to run the same programs is negligible. We could have years of work locked up in sealed discs. Maybe we should go back to making sure that everything is available in hard copy (ie paper and ink) and forget the paperless office idea.

DATA PROTECTION ACT: While we’re on the subject of computers, I should remind all UK members that this Act is now in force and you are entitled to know what information is held about you on any computer. On Eph & Djilda’s machine (subject to whatever it may or not have chewed up), is exactly what you see on the front of the envelope in which you get these Qs, plus your membership number (from 1, Dick Burnett, the first person to join back in 1975, to the most recently joined member around the 1300 mark; we haven’t got 1300 members, but each new member gets a new number; the lapsed members are on my card file, not on the computer and so not subject to the Act) plus a code which says yes you did renew this year (that’s so you won’t get a copy if you haven’t; people don’t get cleared out of the list till they haven’t renewed for the second time, which saves retyping late payers; they only have to have the code changed), plus another code which says that you are UK, European or foreign surface, European air, or overseas air (that saves time when bundling them up for the Post Office to contribute their share in any cock-ups going). On my computer, I have exactly what you see in the annual List of Members, plus the quarterly updates, without any codes (it’s a word-processed job, not a database). You are entitled to have any of this changed, and this you always have been, and you do usually tell us of any changes you want. But please don’t ask Djilda to spell your name or address correctly if you use any accents. Their’s is an expensive computer which can’t print such things; you can only get them on a cheapie machine like my Amstrad PCW. You are also entitled to ask to be removed from either of the computers, but since Djilda corrects her database from what I produce as the List of Members, if you’re not on my computer you won’t get on to hers, and if you’re not on hers, you won’t get any Qs.
LOST MEMBER: Has anybody seen Clive Du'Mont? His October Q came back from Bristol. Not everybody does remember to tell us of any changes!

BACK QUARTERLIES: Stocks from 1983 on are quite reasonable, but earlier than that, they are very thin. If you want October 1981 (Q.25), there are two copies left; for 1982, there are 2 of January, 8 of April, 2 of July and 11 of October. The 1982 set costs £4.50 surface (£6.50 air), and odd copies, including the October 1981, £1.25 surface (£1.75 air), from Barbara Stanley. Barbara has also got a few copies of Qs 1-11 (1975 to halfway through 1978). These cost £1.00 each or £10 for the set, plus (for the set) £2 postage by surface and £4 by air; postage for individual copies is £0.25 by surface and £0.75 by air. She can send you a list of contents. There are no copies available of anything between Q.11 and Q.25 I'm afraid.

FURTHER TO: Q 806: Pendragon Press have sent me their address (R.R.-1, Box 159, Stuyvesant, NY 12173-9720) and say that if anyone wants copies of Phil Young's 2500 Historical Woodwind Instruments, they'll take orders by post and ship by seasmall.

Bull. 49, p. 4: At the Early Instrument Exhibition, I had a look at the GPS Cast Polyester Resin which Jon Swayne told us about last time. It looks good and feels good for weight; the one thing that I didn't like is that it feels slightly sticky on the lip. It didn't feel right for a recorder head and I wouldn't like it for a brass instrument mouthpiece (I keep looking for an ivory substitute for a horn mouthpiece that'll sound as good as ivory does). The chap on the stand seemed to think that this was inevitable with a resin; I'd have thought that they could get round it somehow if they tried. The main problem, I suspect, is persuading them that we are as serious a lot of customers as the rag trade that buy their buttons made of the same stuff.

Further down the same page: Apparently I wasn't meant to put in the note about Alec Loretto's windway cutter; it was for my information (apologies to him. Please take note, all of you, that it is sometimes confusing which hat I'm wearing when you write to me; if something's not for the Bulletin, please say so). All the same, it may have interested some of you, and if so I've now got more information about it. I won't print it here, but if it's easier to ask me than to write to New Zealand, feel free to do so.

Comm.829 etc: Peter Bavington writes:

When tuning keyboard instruments I always start from A, and I don't find this gives rise to the problems you suggest. Historical temperaments can be tuned from A once one has worked out a suitable procedure. As an example, here is a method for setting quarter-comma mean-tone:

1. Tune A to reference pitch (415 Hz or whatever).

2. Tune F a pure major tenth below A.

3. Tune C, G and D so that the four fifths F-C-G-D-A are equally narrowed.

4. Tune the remaining notes by pure major thirds from those already tuned. One can, of course, choose whether to tune A♭ (a major third below C) or G♯ (a major third above E); similarly one can choose to have either E♭ or D♯ thus placing the wolves wherever their howling will cause the least disturbance.
There does seem to be some evidence that, in the eighteenth century at any rate, keyboard tuners did often start at C. If one wants to use strictly historical tuning procedures (as opposed to historical temperaments) the solution might be to define standard reference pitches for Early Music in terms of C rather than A. However the practical and/or musical advantages are extremely hard to discern.

This was a complaint that is withdrawn because it was subsequently discovered to be unfounded - E.S.

EARLY MUSICAL INSTRUMENT EXHIBITION: I thought that November's show at the Horticultural Hall was the most successful for quite a while. Everyone I talked to was very pleased and said that there were many more serious enquiries than usual, and certainly we enrolled more new members than in some years. Our thanks, as always, to Richard Wood for organising it. Welcome to all of you who joined there, and how nice it was to see so many friends.

I was very sorry to hear, only this morning, that one of our newly-joined members at the Exhibition, Nancy Brien, died suddenly, just before Christmas.

QUERIES: Can any of you help Peter Hüttmannsberger, a new member (address in the Supplement herewith)? His letter about Lyra Viols is a bit too long to print here in the Bulletin, so you'll find it at a Comm elsewhere here. I'll send the photos of his instrument, which looks very handsome, up to Eph, too, but I'm not sure there's any point in printing them here.

Renke Lody asks: Does somebody know where I can get a plan of a musette (bagpipes)? (address in the main list).

GADGETS: I meant to put in the last Q part of a letter from Bob Cronin and his drawing of his tool for measuring expanding bores from the narrow end. He was coming here to measure bassoons after the Horticultural Hall and I had said that I was against knocking corks out of bassoon butts, and just what was he intending to use on the downward bore? This is his answer. I hope that he does not mind it appearing here, but used with care, it should be OK (it is, however, not acceptable in those museums which follow strictly the CIMCIM Recommendations on Access; I tend to follow what some people, such as Ken Williams, have said to me: a careful worker with a metal tool is safer than a rougher one with plastic). It looks ideal, too, for recorders whose blocks cannot be removed and for transverse flutes whose heads are parabolic or may not be quite cylindrical. Again it's a bit too long to put here, so I've sent it up to Eph separately.
REQUEST:

The NEW LANGWILL INDEX of Historical Wind-Instrument Makers
edited by William Waterhouse

The NLI seeks primarily to furnish biographical information on makers, with each entry of the 6th edition (1980) researched and rewritten. Having attempted to examine the pertinent printed source material in English, German, French and Italian, I am asking now, in view of my deadline of late 1988, for information on any maker of which I might be ignorant. I am particularly anxious to learn of unpublished research data, articles in obscure journals and hitherto unreported makers. The scope of the NLI was outlined in GSI XXXIX (1986) pp58-67; note that only makers active before 1945 are to be included and that location listings of instruments are no longer of primary concern.

In the past Lyndesay Langwill benefitted from the help of many collaborators: I in my turn shall be grateful for assistance in making the NLI as complete and accurate as possible.

WILLIAM WATERHOUSE
86 Cromwell Ave.
GB-London N6 5HQ

APPEAL: I have received a leaflet from the David Reichenberg Trust. They are intending, among other things, to endow a baroque oboe scholarship in David's memory, an excellent way to express our gratitude for all that he did. Any of you are interested in helping this appeal should write to them at 81 Rectory Grove, London SW4 ODR.

NATIONAL EARLY MUSIC ASSOCIATION: NEMA has published two important booklets recently. One is The Future of Early Music in Britain, reflections by some of the speakers at that historic conference in 1977 on how things have changed (or not!) in our field in the past ten years. It's well worth reading (especially Ian Harwood's and Nicholas Kenyon's contributions). I presume that, although it's the NEMA Journal for September 1987, it's available to non-members, but if so they don't say how much it costs. Anyway, all British FoMfU members should be members of NEMA; it costs £10 a year, which should be sent to Annette Heilbron, 8 Covent Garden, Cambridge CB1 2HR. If there's going to be another generation of early music players to buy your instruments, it'll be due to NEMA's work in the education field, and they could do with your support. They could do with your gratitude, too, for they have also just published the Register of Early Music. This includes everybody who has bothered to fill up one of their forms, and as it should be available in libraries all over the country, and since like our List of Members, but more detailed, it has both geographical and instrumental indices, this is where many members of the public will look if they want either an instrument or a player. If you aren't in it, and many of you are not, write to Carl Willetts (in our List of Members). I've sent Eph a reprint of their membership form blown back up to A4, to put it into this Q if there's room, and you can then photocopy it and send it to Carl; if it's not here somewhere, you'll have to ask Carl for one. If you want a copy of the Register, write to Annette Heilbron (above) - they haven't had the sense to say what it costs on it. See also Lewis Jones's note in this Q about their Early Keyboard Conference he is organising next July.

COURSES: This term's Bate Collection Weekend is on Javanese Gamelan. It will be February 6th and 7th, and if this doesn't arrive in time, my apolo-
gies; it was arranged at fairly short notice. Next term’s, as I told you in the last Q, will be on Tunings and Temperaments, with Lewis Jones and his archicembalo and Peter Bavington; it will be on May 28th & 29th. Next autumn, Alec Loretto will be with us again for a Recorder Makers’ Weekend, with emphasis on windways and tuning; this will be 12th & 13th November. Cost of each Weekend is £20 (£15 for students).

I’m also running two (I hope) Bate Summer Schools. The first, which is definite, is again a Javanese Gamelan one, from 10th to 15th July — an opportunity to get to know the music of another culture. The other I’m still trying to confirm the dates for with Dick Earle, Paul Goodwin, Lorraine Wood and Andy Watts; it will be, as you’ll guess from those names, on Baroque & Classical Oboes and Bassoons. I hope it’ll be 25th-29th July, but it may have to shift over the previous weekend, which will clash with Lewis Jones’s Keyboard Conference. More details in the next Bulletin.

I wanted to tell you about a Guitar-making Conference in Belgium, with Jose Romanillos, but as the last possible date for applying is 15th January, there’s no point. I wish people would give us more notice.

MUSEUMS: Arnold Myers has sent me his latest List of Plans which you’ll find in this Q. He has also sent a copy of his Annual Report, and they are obviously going from strength to strength in Edinburgh. He seems to get through a lot more work than I do, and I take my hat off to him.

The Bate Collection Annual Report is also available (from me if you want a copy). May I ask if any of you can help me? We have been offered a major keyboard collection. In order to accept it, we have got to extend this building and raise a capital sum to pay for staffing it. The total comes to just over £2,000,000! I’m not asking you for contributions, but I am asking whether by any chance you know anyone in the multi-millionaire class who would like to acquire the sort of immortality conferred by a name on a building here (Mr. Bodley and Mr. Ashmole are still quite well known, having done just that a few centuries ago, and so are people who founded various of our colleges). I doubt there’s much chance of FoMRHI members knowing people like that, but it seems silly not to ask. Full details are of course available from me.

CODA: That’s about it. My ideas of Q.50 being a special issue have been spoiled by the NRI computer; never mind, make up for it next time, which is probably a better idea because we always allow the April Q to go over the 100 gram because it has the Members List with it. Don’t worry if the Members List supplement herewith doesn’t include minor corrections; some of them I’ll hold over to the next main list (it’s not worth adding a P, for instance, to your instruments at this stage). I’ll keep this open, as usual, till I’ve done the Supplement, in case there are any more things arriving late.

POSTSCRIPT FOR VIOLIN RESEARCHERS:
I hope that the Guardian doesn’t mind, but I thought that you would like to see this cartoon. It now has an honoured place on one of the cupboard doors in the Bate Workshop.
DEADLINE FOR NEXT Q: March 31st please; there won't be any post in here after that date until April 5th because of Easter. I'm stressing the need to get it here in good time, please, because I've got to go to Berlin for a CIMCIM Conference on April 10th, and I may be going on to Poland from there for ten days to give some lectures. So if I don't get the whole thing finished, List of Members and all, by the end of Easter week, we'll be a month late before we even start adding in any of the other delays to which we are so prone. Because I have this machine, the Bulletin can be written in bits (this one was), so if you can get any bits in earlier, I can get it part written in advance, which will make life easier for me.

Jeremy Montagu
Hon. Sec. FoMRHI

BULLETIN SUPPLEMENT

E. Segerman

LATE Q: This is a further apology to that above from Jeremy for the last Q getting in the mail so late. The problem was that a human error in updating wiped out part of each name on the mailing list, making repair to all entries necessary. All is sorted out now so that this problem won't happen again.

For the record, irrespective of what Jeremy writes, our computer is an old cheap Apple with less memory, speed and flexibility than his Amstrad. Its only advantage over modern micros is that it can print a typeface with proportional spacing in full justification using packaged software.

COMM BY HUTMANNSBERGER IN THIS Q: Mr Hutmannsberger raises the question of what to call a viol with a string stop of 60cm. One can call it any silly name one likes, and some have. Though many modern viol players would prefer to believe that the question of what such an instrument was called in the 17th century is unanswerable, actually the historical evidence is unambiguous. All of the early authors that quantitatively specified size and associated a name with it (Talbot and Praetorius) called it a 'tenor'.

The problem is that modern tradition is to call it a 'small bass'. Major factors behind why that tradition developed were: 1.) the first string in gut tuned to g' will not last on such an instrument at a pitch standard higher than a tone below modern, and modern players will not consider playing at such a low standard; and 2.) such an instrument can sound reasonably well as a bass in d' at modern pitch with bass strings overspun with metal (which is anachronistic for the time of the repertoire played but 'practical' nowadays).

The name 'lyra viol' was given to the Ashmolean Rose instrument because it is of the smallest size that would be called 'bass' nowadays, and everyone knows that early sources stated that the lyra viol was the smallest of the bass viols. Many people nevertheless call it 'division viol' because they don't play from tablature (as one expects from a lyra viol) and the only name left for a small bass viol is 'division viol'. There is no consensus on modern English names except for 'small bass'.

As for German names, it happens to be historically correct to call a viol with string stop of 55 to 60 cm an Alt Gamba, since Praetorius called that size both Tenor and 'Alt'. The other German size names are not so historically correct. They were based on Praetorius, but the scholars just couldn't believe both his sizes and pitches for each name, making a mess of their compromises.
Workshop Drawings

Workshop drawings are being published by the Edinburgh University Collection for the information of historical instrument makers and researchers. They are intended to allow detailed study of the construction of historic instruments.

Available now


(60) 8 Bass Flute in F (Caleb Gedney, London, c. 1760) one key, stained boxwood. $A = 415$ Hz. Drawn by Jean-François Beaudin, 1986. One sheet. Price £5.00 (paper).


(292) Hurdy-gurdy (Low countries ?) Reid Collection. Drawn by Peter Barnes, 1985. One sheet. Price £15.00 (paper), £25.00 (plastic).

In preparation

(2471) Guitar (Anonymous, probably France, 18th century) Macaulay Collection.

[Flute nomenclature: the standard flute is a "D Flute in C" with the six-finger note sounding D and the actual pitch of the player's C being C. The standard fife is a "C Fife in Bb" with six-finger note sounding C and the actual pitch of the player's C being Bb.]

The discount on orders for 2 - 5 drawings is £1.00 per drawing; the discount on orders for 6 or more drawings is £2.00 per drawing.

Photographs are also available: the price for a 203 x 254 black-and-white print of a general view of the any instrument in the Edinburgh University Collection is £4.00. Photographs of particular details can be taken on request.

Orders must be accompanied by remittance. Prices include VAT and surface postage. Please remit by cheque payable to the University of Edinburgh, made out in £ sterling drawn on a U.K. bank.

1st January 1988

This is the first volume in a series of checklists which, under the general editorship of Rob van Acht, will cover the whole of the musical instrument collection of this museum. It replaces the aborted series of catalogues, only the first of which (*Hoorn- en trompetachtige blasinstrumenten* by Leo Plenckers) ever appeared (dated 1970). It is a welcome replacement, certainly from our point of view for it is in English, if only because every instrument is illustrated, an example which I sincerely hope will be followed, especially when they get on to the non-European instruments (see my comment in this connexion in the *New Grove DoMI* review of J & K in this Q under the head of *Kaburu*; the Hague’s collection of such instruments is a superb one).

This volume covers all the pianos; another is promised for the clavichords, harpsichords and organs. The entries are arranged typologically (grands, squares, uprights, etc) and within types chronologically. There are twelve grands, from Dulcken 1794 to Steinway 1924. The Dulcken is of little interest, for it was converted into a harpsichord at some stage, and turned back into a piano with a copy of a Stein action by the museum in 1971; thus only the case is earlier than that last date. Other instruments are a Joseph Kirckman of 1798, an Erard of 1806, a maybe Sailer of maybe the first quarter of the 19th century, a Broadwood of 1825, a Clementi of c. 1827, Pleyels of c. 1844 and c. 1847, a Pleyel & Wolff of 1879, a Schleip of the end of the century (a very odd looking instrument because it’s a down-striker with the keyboard level with the top of the case), and a Bösendorfer of 1906 (not with the bass extension). There are 39 squares, with a rather more interesting range, from Silbermann of 1749 to a big probable American of about 1865. There are three oddities, a little 4’, a sewing-box three-octave, and an orphica. There are 27 uprights, from a Stodart vertical grand of 1804 to a Cramer & Co yacht piano of c. 1905 and a Knake of c. 1917. And finally three dumb pianos for practising.

Descriptions of all the instruments is summary, but it includes all the essential information: the nameboard and any other inscriptions (except any interior ones which still remain undiscovered), external dimensions, compass, stringing (uni-, bi-, trichord and the range each covers), string lengths for the lowest and highest notes and all c’s, type of action, any metal framing, number and purpose of pedals, hand- and knee-levers, any literature on that specific instrument, where and when the instrument was restored if it has been, and the museum number with, in some cases, provenance.

Two of the squares are of particular interest to me because of similar instruments in the Bate Collection. One is the Adam Beyer square of 1780. Ours has a swell pedal fixed to the two right-hand legs which lifts the right hand third of the lid. One can see in the photo here the notches in the legs where the pedal’s cross-bar was fixed, and the socket in the lid where the riser fitted; there is no mention of the missing swell in the text here. This Hague Beyer is number 492; ours is a year earlier and is number 440. The Hague’s other Beyer is dated 1783 and is number 609, which gives a production figure of 169 squares within a maximum of five years, if ours were made in January and their later one in December, and a minimum of just over three years if these months were reversed. The fact that their 1780 is 52 higher than our 1779 suggests that the minimum might be nearer the mark and that Adam Beyer was knocking them out at 40-50+ a year. The
1783 Beyer still has its damper cover, a board which conceals all the damper levers, which the 1780 has lost, and both, and indeed all but one of the squares, have lost their so-called dust-covers (unless they were removed so that some of the action could be seen in the photographs). I call them "so-called" because experiment shows that they are auxiliary soundboards; there is a marked increase in sound quality and quantity when they are present, and they are usually of good-quality, straight-grained wood which surely would not be used if their only function were to keep dust out. The next item, a Longman & Broderip, is noted somewhat oddly as 1782?, when the action is Geib's patent of 1786. The other one which interests me is a Broadwood of 1829. This has a the 1827 patent metal plate and bar to hold the gap open, and is a twin for one date 1844 which we were given by Bernard Rose, save that the Hague piano has the usual set-in keyboard whereas ours has a projecting keyboard, which Broadwood's 1840 list (reproduced in Harding) refers to as the cylinder front. In that list our model cost £70, whereas the Hague's cost only £40. However, ours has pretty well double the soundboard area, and gives credence to Hipkins's statement that Chopin, when in London, asked for a square rather than a grand because he found the action of the London grands heavier than the Erard to which he was accustomed. The small tone of the ordinary square has always made me doubtful of the accuracy of this story, though as Hipkins tuned for Chopin it was difficult to doubt it, but our instrument has nearly as much soundboard as a grand, a light action and a very good sound. What is also interesting is the lightness of the damping which, even when one is not using the pedal (there is only one, the damper-lift), makes a singing legato not only possible but easy. Warwick Cole (in the Harpsichord & Fortepiano Magazine reviewed elsewhere in this Q) asks where our approach to early keyboards is going to stop; I would encourage anyone interested in Chopin who has not met one of these big Broadwood squares to come into the Bate and give it a try. The first time I heard a good pianist on it, it was quite a revelation. Perhaps we should try to produce a cassette of it. Which returns me to the Hague Checklist, for they have two cassettes on sale in the Museum, one using their smaller version of this Broadwood and both using the rehashed Dulcken.

I'm not sure what the present sale arrangements are at the Hague. At one stage they had an arrangement with Frits Knuf which meant that one could buy catalogues etc quite cheaply in the museum but all post orders had to go to Knuf, whose prices were, if I remember rightly, considerably more than double the museum price. I'd suggest writing to the museum to see if they will sell direct. Their address is: Haags Gemeentemuseum, Postbus 72, NL-2501 CB 's-Gravenhage, Netherlands, and it might be worth addressing the letter to Rob van Acht and saying that you'd seen this review.
Review of: The Harpsichord and Fortepiano Magazine, October 1987. POBox 129 Cheltenham, GL52 3BZ (£5.00 UK & Europe, $12.00 USA [+ $2.00 for airmail], £6.00 elsewhere per year for 2 issues).

Two excellent articles in this issue, well worth reading (a long interview with Melvyn Tan and a description of a Backers fortepiano), and an up-to-date checklist of the Russell Collection in Edinburgh.

The Tan interview is interesting, for we don’t that often hear (or read) the performer’s point of view, of why he plays these instruments we make, research, conserve, restore and so on.

The description of the Americus Backers 1772 fortepiano in Edinburgh is important for several reasons: it is probably the earliest surviving English grand piano; there is a good description of a number of details of its construction, with a good, clear drawing of the action; the article proves, to my satisfaction at least, that the Fenton House Backers is a contemporary forgery. An interesting extra is a transcription of the contents of Backers’ workshop drawn up for probate after his death, the date of which is now established as 1778 and not, as previously published elsewhere, 1781.

All of us who are interested in keyboards and/or museum catalogues have the 1968 Catalogue of the Russell Collection; there is also a 1986 revision of the Brief Guide to the Russell Collection, which I for one don’t have (yet; it’s available for £1.00 from the Publications Officer, St.Cecilia Hall, Niddry Street, Cowgate, Edinburgh EH1 1LJ). The 1968 illustrated catalogue is also available from the same address for £1.50). This checklist updates both, and since this is the premier collection of keyboards in this country (without meaning to diminish the importance of the Finchcocks, Colt, V&A or any other collections) to have such a list is very useful. It would be even more useful if it maintained the system with which it starts of noting which instruments are Russell Collection and which came to the University of Edinburgh from other sources, either before the Russell Collection arrived or acquired since. We begin with very careful (RRC) or (UEC) at the end of each entry, but unfortunately this doesn’t last long. I hope that the * beside those instruments for which drawings are available is more complete; there are seven so marked and two more are noted as drawings in preparation. I imagine that information on the drawings would be available from the same source as the catalogues.

For those of you who haven’t seen this magazine, it’s smallish (104 pages for the two issues of 1987), and unlike ours, it’s properly printed on good paper and well-illustrated. It’s not much more than half the price of ours too! (it carries advertisements, which is probably how Warwick Cole does it for the money). I’d have said that it was essential reading for anyone working with keyboards.

I put a brief note about this very interesting catalogue in Book News in the last Q, and there will be a full review in the next Galpin Society Journal which, if the one that’s just appeared a full eight months late is anything to go by, will be published some time in the next eighteen months (maybe the fact that some other societies are even less competent than we are will be some consolation for the hash we made of getting October’s Q to you). This will therefore be something between the two, though if I thought that there was much chance of any great number of you getting hold of a copy (it would be worth your while), I’d do one of my very detailed reviews because there are a lot of small details worth picking up which cannot be put into a normal review. So if there would be any interest in that, let me know; the material is sitting here on disc and it would be easy enough to print it out.

The collection is a major one and is of special interest to us because when they could not obtain original early instruments, they bought modern reproductions, something which doubtless the makers among our members would wish that other museums would do. Personally, I’m sorry that they did not take advice right from the beginning from someone with considerable experience in the early music field, for they have not always gone to the best makers, though it does look as though they learned as they went along. At least they have the courage of their convictions, and unlike some museum catalogues, the reproductions are treated on exactly the same basis as any other instruments in the collection. The collection is worldwide with, as one would expect, a rather larger range of Japanese and Chinese instruments than anything else apart from the European. There is an illustration of every instrument, as I said in the last Q approximately 35mm contact size, and every illustration includes a scale, which could have been very useful if they had been a bit more careful about where they put the scale. Sometimes it’s almost out of the picture; sometimes it’s too far in front of or behind the instrument, so that one has to try to allow for distortion of size for that reason. Still, it’s much more useful than not. Again I wish other museums would do this, but mostly they are concerned with producing a pretty picture, and a scale is thought to spoil this by most publicity officers. There are also a number of colour plates, and some x-radiographs. Few of the latter are very informative; most are either of the wrong instruments (ie of one whose interior is of no great interest) or are too dark to see anything very much.

For every instrument there is its registration number in the collection, and then its classificatory number in Sumi Gunji’s own classification system, which I’ve described in some detail in GSJ. This is followed by its name, which is either typological or, where it can be more definitely identified that given in both Marcuse’s and New Grove’s Dictionaries. That in the New Grove DoMI is much the more reliable, since Marcuse is basically an English translation of the Sachs Reallexikon, and thus an English transcription of a German transcription produced seventy-five years ago. The name is followed by the regional name where they know it, the name that actual instrument had in the area where it was used (this comes out a bit funny for some of our European early instruments, where you can get Blockflöte if it’s a Moeck and Recorder if it’s a von Huene). This is followed
by the region it comes from and maker’s name and date where these are known, which of course they are not for a lot of regional instruments (I’m trying to push that term, or its alternative of national instrument, instead of non-European, which is often inaccurate since it’s taken to include European folk instruments, or ethnic, which is grossly misleading since we are all, by definition, members of a race). The musical range is also given, where that can be ascertained, and last there are any relevant and very brief comments about the instrument.

The great advantage of the catalogue is that everything is illustrated, and this makes it much easier to make comments in any detail than when there is just a name. I suspect, too, that the photo takes less room on the page than any description would do, and is probably cheaper, too, since they have probably got the photos anyway for cataloguing processes and to print a photo is usually cheaper than to print the equivalent area of letterpress. While the collection is large, it’s not enormous, so that the result is not a complete encyclopedia of instruments, but it does go some way towards it, and it is therefore an excellent thing to have. The only trouble is that they have not said what it costs, but you can always write and ask them. It is available over here (from Tony Bingham), but perhaps I should warn you that it costs £85 from him, and it’s very little cheaper in Japan.

FoMRHI Comm. 845

Jeremy Montagu


Arnold Myers, the Honorary Curator of the Collection, has produced an excellent, case by case, very brief guide book. It is directly comparable with my own Guided Tour of the Bate Collection, and it is immediately more attractive: it is 25p cheaper, it has an excellent and attractive pictorial cover, a montage of photographs of 19 instruments in the Collection, it has a very good bibliography for further reading, it is printed full size, rather than photo-reduced to half size, and it is less densely printed than mine, with more white on the page. In fact, I think that I must rethink the general appearance of mine (I am, anyway, exploring the possibilities of ‘real’ printing for all of mine, with photographs). It is, I think, though it’s never easy for an author to judge, rather more simply written but perhaps with rather less factual information (in that respect it does not, of course, compare with my own Bate Guide Books, but they were written to be mini-histories of each type of instrument, whereas Arnold’s Guide, like my Guided Tour, is written to have in your hand as you go round the exhibition). The information is certainly adequate for the casual visitor who wants to know what this lot is all about, and I presume that it is amplified by individual labels and master labels in the showcases themselves (my Bate Guides are essentially a reprint of all the master labels).

I doubt whether it’ll tell FoMRHI members anything they don’t already know (I hope that mine won’t either!), except for a quick guide to what’s there, but in that respect, and combined with the checklists (a complete set of which is available for £9.00 – they have all been reviewed here in the past), it’s well worth having.

This is written as a handbook, descriptive and historical, of stringed keyboard instruments, and it illustrates 41 such instruments from the Berlin Musikinstrumenten Museum collection. Whether this is all the stringed keyboards that there are in that museum, I'm not quite clear. Certainly it isn't set out as a catalogue, though each plate does provide minimal catalogue information, and gives one the impression that if one's looking for a catalogue of the harpsichords, clavichords and pianos in that collection, this is what one is going to get. Certainly it's much more nicely produced than the two catalogues we have (reviewed here years ago now), one on the bowed string instruments and the other on the brass. They were paperback, this is boards; they were illustrated in black and white, this in colour. For the general public, this is much the better buy, but we aren't the general public, and I'd not have thought that the musical instrument public, to whom catalogues are really addressed, are going to be satisfied with this.

However, this is a good stop-gap. They've not told me what it costs, but it's beautifully produced. All the main pictures of the whole instrument are in colour, and there is a detail photo (black and white) of the rose or the nameboard of a good many of the instruments. Incidentally, their photo of their Adam Beyer (see my review also in this Q of the Hague Checklist) shows the swell raised - I can't see how they wedged it up - and a number of their other squares have the 'dust covers' in position. There is a beautifully clear drawing of a transposing keyboard (no, they haven't got a Ruckers with one in the collection; this is to illustrate the historical development of the harpsichord), though it doesn't show what the keytails do. There are also good drawings of actions; the only one lacking is one to show what fretting means on a clavichord.

If you want a good picture book of keyboard instruments, this is the best that I've seen in a long while.

This is a very detailed study of a violin labelled, but almost certainly not made by Giuseppe and Antonio Gagliano. Dendrochronological examination gave a date of not earlier than the last decade of the 18th century, and since the label, which had a date of 181_, was unlikely to claim that the instrument was newer than it really was, it could be later still. What caused the instrument to be the subject of this detailed research was that the way in which the neck was attached appeared to be a great deal earlier than either the label or the age of the wood indicated. While we all know that violins were made on a certain pattern in the baroque period (short, straight necks nailed through a block, wedge fingerboards, etc), and by the early nineteenth century on a different pattern (long, tipped-back necks, parallel fingerboards, etc), apparently once one starts to look at the instruments carefully, a lot of this just ain’t so, and not only is there a lot of variation within the most general patterns, but there are many blanks in our knowledge.

This study is designed to fill some of those blanks, and if you working on violins at all and can read Italian, this is probably essential reading. If you can’t read Italian, there is a very brief and not very English summary, there are dictionaries around, and the many line drawings are very clear in their meaning. While the booklet is published by the library in Rovereto, a letter to Marco Tiella (who’s in our List of Members) might be the quicker way of getting a copy, especially as there is no indication of price on my copy.

FoMRHI Book News

Two books that we’ve not been sent for review but which you ought to know about.

Cajsa Lund, ed: *Second Conference of the ICTM Study Group on Music Archaeology*, Vol. I, General Studies, Royal Swedish Academy of Music, Stockholm, 1986; 244pp, quite a few illus. A number of important articles, several of them on conservation. Vol.II is due out soon and will be specifically on the bronze lurs. The ICTM Music-Archaeology group goes from strength to strength, and much important material gets aired at their conferences; I only wish they wouldn’t hold them in term time.

Elena Ferrari Barassi & Marinella Laini, eds: *Per una Carta Europea del Restauro; Conservazione, restauro e riuso degli strumenti musicali antichi*, Leo Olschki, Firenze, 1987; 462pp, some illus. The papers of the conference at the Fondazione Olga e Ugo Levi in Venice on conservation, which was held as part of the European Music Year in October 1985. 40 extremely important articles by everyone you’ve heard of in the conservation and restoration field. Most in Italian, many in English, some in French and a few in German. Unlike a lot of conference publications, includes much of the resulting discussions also. Essential reading.
Jew's harp: It would be interesting to know to what extent the length of this article was restricted. The main author, John Wright, is the leading expert on the instrument, and yet a number of important types are not described. Nor is there any mention of the link between the blown free-reed of the mouthorgan and this plucked free-reed (which is what essentially a jew's harp is) which was established by Laurence Picken in the first volume of *The New Oxford History of Music*, even though that article is listed in the bibliography here. This link is important because the South East Asian jew's harps and mouthorgan reeds are identical in their various patterns, the only differences between them being size and the method of excitation. Another point ignored, though again the relevant article is cited in the bibliography, is that raised by C.E. Adkins regarding the use of non-harmonic overtones in the upper part of the range. His work has made it clear that the acoustical behaviour, and thus the musical potentiality of the instrument, is much more complex than had been previously thought. This omission, in particular, may have been the result of restrictions on length because, when one rereads the article with Adkins' work in mind, one realises that Wright has written it very carefully to admit these complexities without ever mentioning them. Other than the above remarks, this is an excellent article and doubly praiseworthy in not trying, as so many authors have done, to fudge the name of the instrument, though a better citation of its early form might have been to the *OED*, which, as always, gives sources for the earliest English references.

Jiangu: It would be interesting to know whether this large drum, mounted on a post so that it forms a T with the drum replacing the horizontal bar at the top, is the origin of the small twirled drums also so prevalent in China and the neighbouring areas. These are the same shape, but in miniature — their heads are some 3-5cm Ø instead of 70-80cm — though they are struck with swinging pellets on the ends of two cords as the drum is rotated, instead of with beaters. Since the jiangu seems to have been a ritual instrument since the 18th century BC, it would seem distinctly possible, and the twirled drums also often have a ritual element even though some of them are now toys or tourist souvenirs, that there is a connexion between the two types.

Jilel: It is a pity that we are not told whether this Marshall Islands conch trumpet is side-blown or end-blown, nor whether its signal calls are varied in rhythm or, by hand-stopping, in pitch. One would presume that one or other method must be used and since so much information is given about its use in the culture, it is all the more unfortunate that these two essentially organological details are ignored in a musical dictionary.

Joget gamelan: There is a quite extraordinary statement at the end of this article: Although the instruments are almost identical in construction to the Javanese slendro tonality, they are tuned quite differently, to pitches 7 1 2 4 5 (ie to pelog pitches). The point is that there is no difference in construction between instruments tuned in slendro and those tuned in pelog, nor can any object be identical in construction to a tonality, which is a sound or a concept, not an object. As with so many of Margaret Kartomi's useful, and doubtless informative were they fully comprehensible, articles, sub-editing help has been lacking.
Jonkamentötzi: A grossly inadequate short note on this transverse flute: It has no finger-holes; the pitch is modified instead by plugging and unplugging the lower end with the forefinger. Clearly it is a harmonic flute which produces the full range of harmonics when the end is open, and only the odd-numbered harmonics based on a fundamental approximately an octave lower when the end is closed (a better term than plugged). OK, it's clear to me, and probably to some FoMRHI members, for we are, in theory at least, knowledgeable about musical instruments, but it isn't going to be clear to anybody who doesn't know about harmonic flutes, and yet it would have been just as easy to write the description as I've done.

Jouhikko: It seems curious to have an article on this Finnish bowed lyre without giving a reference to the standard book on such instruments in general by Otto Andersson (The Bowed Harp was its English title).

Junggotan: The description of this Sarawak Jew's harp is quite incomprehensible. It is said to have a range of less than a 4th and no fixed series of notes can be measured. Since the range of the Jew's harp depends mainly on the mouth capacity of the performer, variation of the volume and shape of which selectively resonates the overtones of the reed (or feather in English folk parlance) (see the first article cited in this Comm.), I can't see how the range can be so restricted (unless, of course, but highly improbably, the Bedayuh people have very odd mouths).

Juring rangguin: Another Jew's harp, this time of the Temiar of Malaysia, which is described as being played by pulling a rattan string one end of which is tied to the tongue. If it were, the tongue (the reed or feather) would not be free to vibrate. All the Malaysian (or any other string-operated) Jew's harps that I've ever seen had had the string tied to, or knotted through a hole in, the hinge, in the solid area just beyond the slits that separate the reed from the body. In other words, the plucking is done at the opposite end of the reed from the Jew's harps of European and Indian pattern. Maybe this one is different, but if so, the difference from all others is so marked that a photo or drawing would be useful to prove it.

The Ka.

Kábedes: If this is, as it appears to be from the very brief description, the Lapp shaman's drum, there is a very extensive literature on the instrument, including a number of articles by Ernst Emsheimer, some at least of which ought to have been cited. In addition, some mention should have been made of the construction of the drum. While it is very shallow, to call it a frame drum may be misleading; it normally has a wooden body which is made in the form of a very shallow bowl, with extensive cut-outs in the back, partly to allow the hand to grip it and partly perhaps (I'm not sure whether this has ever been discussed) for decoration. It is arguable that this drum might be considered to be a perforated kettle drum if such a concept were permissible; certainly FRAME DRUM is inadequate as a description. Some mention, too, should have been made of the decoration of the drum-head with various ritual symbols, because the fortune-telling, by placing small objects on the vibrating membrane, which is mentioned here, depends upon what painted figures the small objects move towards and away from.

Kabuki: Again there is a standard, and fairly recent, text (Nagauta), by William Malm (who is also the author of the standard text on Japanese musical instruments), which should have been cited.
Kaburu: Most of the instruments described briefly do have some indication of their shape; this has none and it remains unidentifiable. This, in fact, is my main disappointment about this whole Dictionary. It is, on the whole, a wonderful work, but for someone like me who has a large collection, now rapidly approaching 2,000, of instruments from all over the world, my hope that with its aid I could put names to many of them has been dashed. Some I now can, but many descriptions like this one could well apply to one of the instruments that I have, but I can't be certain enough to use this name in a catalogue. Many museum curators must share this feeling with me, unless they are fortunate enough to have acquired all their instruments with extensive field notes. Clearly it would not have been economically feasible to have illustrated every instrument (but if only it had been!), but this is why I have said repeatedly in this series of reviews that the source from which the information had been drawn should have been identified. I, and others, could then have gone to that source and, perhaps, been able to check whether this instrument was one that we had. While I, like most curators, have a reasonable knowledge of the literature, the New Grove body of authors and editors have, between them, an infinitely greater knowledge, one on which the rest of us could have battened if only they had given us the necessary leads.

Kacapi (i): This does not have a boat-shaped wooden frame but a boat-shaped wooden body. There are some similar terminological infelicities in the description of the kacapi (ii) also (handle for neck, lid for back).

Kaiserbaryton: A wide-bore completely conical baritone invented by V.F. Červený. This word completely I do not believe. If Červený had succeeded in inventing conical tuning slides, and any method of ensuring that whether one was playing the open tube or using any or all of the three or more valves (in this case four), the bore still increased uniformly in diameter, the world of brass would still be ringing with his praise. As a minor detail, no wind instrument can be truly conical unless it were to be played through a microscopically small pin-hole, but that I suppose is a quibble; most of us do refer to bores as conical and leave the more accurate trunco-conoidal to the acousticians. One further point: other than the tuning slides, every baritone that I know is 'conical' in bore.

Kakaki: There is a very tentative linkage of this West African long metal trumpet with other similar instruments towards the end of this unusually comprehensive article. It is curious that it should be tentative (and incomplete) for there are well-documented parallels and equally well-documented routes of migration and transmission. These links also extend to the Kambé, a few pages further on, but again are only hinted at there.

Ká'keeta: This North-American Indian flute has an internal/external duct rather than an external one. One blows into the end; a baffle directs the air out of the instrument; a tied-on cover channels it along the outside of the tube, and a mouth lets it back in again. With an external duct, on the other hand, one blows between the outside of the tube and something such as a leaf tied round it, as with the Javanese suling or the Burmese palwe (most of these external duct flutes are called ring flutes in this dictionary, but not all have rings; in the Philippines a small segment of bamboo acts as the baffle, and is tied on to the flute with thread; thus there is a ring, but it's not the ring that acts as the baffle).

Kalembete: One of the interesting things about this small fiddle is that it is all-but identical with small hand-held slit drums in the same area. See two of Laurenty's Tervuren catalogues, Les Cordophones du Congo-Belge (which is not cited in the bibliography here, but should have been) and Les Tambours à Fente de l'Afrique Centrale (the geographical difference in the
titles is, of course, only a matter of date and recent African history and not of actual geographical coverage; the name of the Tervuren museum, and thus also of the areas covered in its superb and very detailed catalogues, with photographs of every example of the relevant instrument types in the museum, was changed when the Congo ceased to be Belgian).

Kalutang: These Philippine concussion sticks of the Hanunoo people are played in pairs to produce harmonics of 2nds 3rds or 4ths. Harmonics maybe but harmonics never.

Katanga: Secret wooden gong used — in eastern Angola. This I find difficult to believe; a) how do you make a gong out of wood? b) the gong is otherwise unknown in Africa.

Katiboky: What do you suppose is a free-key xylophone?

Keat, James: There's a 3-inch or so article on this fairly minor member of the Keat family of brass instrument makers, and nothing at all about any of the other members, who were active in London for over 150 years, and responsible for one of the most important models of horn mute among many other developments. This seems quite extraordinary. Was James put in just to keep the American customers happy?

Keledi: A mouthorgan of the Malaysian Islands, by opening and closing the finger-holes near the base of each tube and using circular breathing, the player can produce various polychordal effects. It is a characteristic of all the Asian mouthorgans that the pipe is balanced to the reed so that unless a hole in the pipe is closed by a finger (or by wax for a drone) that reed will not sound; one can produce chords by closing the hole of more than one pipe. All such instruments that I know are also designed, unlike the European mouthorgan, so that the reeds will sound on both blow and suck and thus circular breathing is not required; this one may, of course, be an exception in this respect, but if so this should be stated more clearly.

Kemanak: A Javanese clapper, a pair of metal rods in the shape of bananas. They are not rods, they are tubes. They were one of Kunst's main arguments for the connexion between Africa and Indonesia (that article is not cited here), since very similar instruments are used in West Africa.

Kempul: Why is the kenong referred to in this article as a boxed gong? It is not made of a box, nor is it placed in or on a box (see the next).

Kempyang: These small gongs in the gamelan are used in slendro as much as they are in pelog. They are not placed in a box, either, but rest on cords (like all the Indonesian gongs which are not suspended) in a wooden frame.

Kenca: One of the most important features of this South American notch flute, not mentioned here, is that the distal end is constricted. When, as is usual today, the instrument is made of cane or reed, the foot of the instrument is closed by a node of the cane, which is pierced with a small hole, either the same diameter as or smaller than a fingerhole. This improves the intonation, and it was partly because he knew of this construction, which is common also in the Balkans and in other parts of Southern Europe, that Rainer Weber produced his reconstruction of the Dordrecht recorder with such a foot. The alternative spelling qena is more often so (without the u) than quena.

Kendang: It would be better to describe the Javanese form as barrel-shaped rather than 'bellied'. [I've learned how to fake the subscript dot, about the only accent this machine hasn't got built in, and will pass the information on to any of you who need it]. It would also have been a good idea to mention the extremely complex internal shape; it by no means follows the
exterior, and it's the interior that counts for sound, which is why they go to all the trouble to carve it that way.

Kenite: *Idiochord tube zither of Flores* - its body - consists of only about a fifth of its circumference. Um, er. What do you suppose this means? How can a tube consist only of a fifth of its circumference? A tube is a tube and it has a circumference all round it, or else it isn't a tube. Is it a split tube zither (like a qin or a koto)? At least there is a reference here, which I can look up as I have a copy of Kunst's *Music in Flores*. I have, and it is a split tube, as Kunst makes absolutely clear by heading that section *SPLIT BAMBOO ZITHERS*. So why not quote him correctly?

Kertok kelapa: There is a rather idiosyncratic use of the word *soundboard* here, to mean the bar that is struck on this one-note xylophone. OK, it's wider than it's thick and thus *board* is not wholly inappropriate, and it is indeed what makes the sound; nevertheless, this isn't what we usually mean by a soundboard.

Kessa: An ivory trumpet with a stop in the tip. (For new readers, this is one of my betes noir; unlike keys on xylo- and lamellophones, and the tautology of conch-shell, which I promised some Qs ago that I wouldn't mention again, I am mentioning it wherever it appears because Stanley Sadie said it didn't).

Ketipung: This is a double-headed cylindrical drum with heads measuring about 37 cm and 20 cm in diameter. I have never seen a cylinder with ends of different diameters, and in fact the ketipung is always conoidal in shape, with one end wider than the other.

Kettledrum: The article gives *timpan* as a medieval name for what I call nakers, but timpan is a common early name for the dulcimer; is there a confusion here? It looks like an uncorrected conflation of two articles (there are two authors named) for there is a second description of the introduction of the small kettledrums into Europe, with them named as nakers. There is, too, a suggestion that the word kettledrum may derive from the Latin *catinus*, which is surely nonsense; it's called a kettledrum because the shell looks like a kettle (a cauldron, not the modern kettle with a spout).

Kettle gong: Bronze drum is more often used as an alternative (and preferable) name in English for these instruments of the Karen and the Dong song culture; metal drum, the alternative and equally preferable name given here is a translation of the normal German name, *Metaltrommel*. There ought to be a reference here under one of these alternative names, for the thing isn't a gong; it is a drum, though made of bronze. It started as a skeuomorph of a Chinese drum, given as an award to successful generals, and Laurence Picken (in his *Folk Musical Instruments of Turkey*) discusses this question of a membrane that is not skin. I agree with him that the behaviour of these instruments (and of toy telephones etc made of matchbox interiors and tin cans, which is why he is discussing it in a Turkish context) is sufficiently analogous to normal drums that one can call them membranophones, with the reservation that if one wishes to be really pedantic (perhaps you've noticed that I often am, especially in classification) one could set up a new class of Diaphragmophones, within which, I suppose, true membranophones (ie instruments with a skin) would be a subdivision. A separate problem in the use of *kettle gongs* for these instruments is that it is liable to cause confusion when another author, such as David Morton in his article on *Khong* below, uses kettle gong as a description for the ordinary deep walled small gong, like on Javanese bonangs etc, which other people call gong kettles.
Key: I did say just now that I wouldn’t refer again to the misuse of this word, but I can’t resist pointing out that the two definitions of this word given here, both absolutely correct, do not permit its use in the contexts to which I object.

Keyboard music: In an article of this length (31 pages) I’m sure that there must be things to discuss, but I’m not a keyboard player and it’s not an area that I therefore know much about. So I’ll leave it to the rest of you. Perhaps I should remind you that once any book has been sent to us for review, anybody who has access to a copy is entitled to comment on it, as long as comments are within the reasonable limits permitted by the laws of libel. Some of you have joined in Eph’s and my work on the Grove DoMI, but I wish more of you would. So many FoMRHI members have expertise on so many subjects, that many more of you could contribute to this task of improvement, of helping to ensure even greater accuracy in the next edition.

Khâen: [Sorry, the line over the a and the e should be continuous, but I can’t do that on this machine]. One odd statement in an otherwise excellent article is that the pitches produced by this Laotian and Thai mouthorgan consist of semitones and wholetones averaging 100 and 200 cents respectively. One could say the same of any European temperament, and one would have little idea of what they sounded like; one could even say that the European scale consisted of seven notes averaging 171 cents. It would be better to say that the pitches approximate to Western semitones and wholetones.

Khanjari: If the khanjani of Bengal and Orissa is approximately 13 cm across and 8 cm deep, it isn’t a frame drum, the definition of which is that the depth of the shell is less than the radius of the head (not the diameter, and this is deeper than the diameter).

Kidi: Double-headed drum — cylindrical in shape tapering to a truncated cone. As I have noted before with other instruments, it cannot both be a cylinder and taper. There really is rather too much of this Humpty-Dumpty use of English. As so often, English is not this author’s first language, but that is what sub-editors are there for.

Kidiyo: Another horn with a stop.

Kiluka: The description of this Ugandan whistle is not clear: It is made from a gourd with the tip blocked and — has a cupped mouthpiece. Do gourds have tips? And is the cupped mouthpiece (an unusual shape for a whistle, to the extent that I’m not sure how it would work) integral with the gourd and if so how, or is made of something else and attached, and again if so how, and where?

Kirckman: A pleasingly enthusiastic article about his harpsichords, which tend to be too much neglected today.

Kissar: The Egyptian and Sudanese bowl lyre whose name is a corruption of the Coptic from the Greek. The phrase ‘gegen atkithara’ appears frequently in the Coptic psalter but is of no help to organological understanding since the reference is to a harp or a lute. But if the Coptic psalter is, as the word ‘psalter’ suggests, a translation of the Psalms of David, it is likely that ‘gegen atkithara’ is a translation of κιννώρ (in the Greek text of the Septuagint), which is usually a translation of kinnor, which was in fact a lyre.

Koenig: About three inches are given to a firm of organ-builders of this name, but not mentioned at all, not even briefly, is the famous cornet player who gave his name to a specific type of cornet. All the odder is that
later there is an entry for Könighorn, another brass instrument, much less well-known than the Koenig-horn.

Köhler: No mention is made of his post horns (nor of his booklet on what to play on them, pseudonymously written by The Old Guard), nor of his hunting horns, for which he was famous, and which are still available from Swaine, Adeney, Brigg in Piccadilly, who took over and continued his firm (and there's no mention of that continuation either). In fact about all that is mentioned is his manufacture of Shaw's disc valves; his firm was noted for a good deal more than that.

Koprak: The description of this Balinese bamboo slit drum is confused and incomprehensible because it is a confused conflation of the description of two instruments known by that name. Fortunately there is a reference to McPhee's book *Music in Bali* in which the description of both is crystal clear. One is a group of single internodes of bamboo, each with a slit in the side; the other is one long piece of bamboo with slits in each internode to form a muliple instrument on one body. In both cases, each internode is struck by its own player.

Korg: The article might have mentioned the tuners, even if only in passing, as well as all the electronic instruments. I know it's not really an instrument, but it's as important today as the tuning fork once was, and that has an article.

Kress horn: I'd love to know how this toy, a cardboard cone fitted with a wooden mouthpiece works; a pentatonic scale can be played on a trumpet mouthpiece, while a clarinet mouthpiece and reed can be played as an instrument. A trumpet or clarinet mouthpiece could replace that of the Kress horn, thus increasing the volume. Note that in the first sentence such mouthpieces allow one to play music, whereas in the second they make more noise. So how did it work? There's no mention of its length.

Kwarya: When sticks are used to strike this Nigerian inverted half calabash, they are usually a pair of complex sticks, looking like the struts of a fan, made from a bunch of twigs tied together at the handle with a strip of cloth.

Kyi-zi: This triangular Burmese suspended bell-plate deserves a little more description. It is the only instrument that I know of which depends on phase effect. It is struck on one of its corners so that it spins on its suspension cord, producing an amplitude throb as it does so, loud as the flat face is towards the hearer and soft as the edge is towards him. So unique a feature would have been worth a mention.
The Establishment of Conservation Standards and Accreditation in the U.K.

I told you in the last Bulletin (p.5) that the Museums and Galleries Commission (henceforth MGC) has set up a Conservation Unit. For those of you who’ve not come across it, the MGC is a governmental organisation which provides funds for the Area Museums Councils and also for local museums and much else in the museum world. The MGC set up the Conservation Unit last April and took over responsibility for all government aid and everything else for conservation from the Crafts Council. Reading between the lines (and I'm probably not supposed to say this), it looks a bit as though people in the museum world thought that the Crafts Council list of conservators was too much like a FoMRHI list of members, that anyone could put their name down, good bad or indifferent, and that it was time that things were tightened up so that there would be a list of good and reliable conservators who could be trusted and recommended without reservations.

The Conservation Unit (henceforth CU) called a meeting last November to discuss Accreditation. They invited representatives of groups and societies in different subjects, with us for musical instruments. We were all asked to present, very briefly, a description of what our group or society did and the extent to which we issued any qualifications, how we judged these, and so on.

It was agreed, I had thought, that the CU was going to circulate a resume of what was said and of the ensuing discussion, but so far they've not done so, and therefore the following depends on my memory and my rather scrappy notes, which are scrappy because I did not think we'd need to rely on them.

First, let me make it quite clear that we are going to have to work out some method of accreditation, whether we like it or not.

If any of our members, or any other musical instrument conservators want to be included in the CU's Register, they are going to have to be accredited by someone or some organisation. While they didn't actually say so, it's pretty clear that after a period to allow for sorting out, any museum that applies for a conservation grant from their Area Museums Council (and that's where all such grants come from) is only going to get it if the job is going to be done by an accredited conservator. I told you last time that grants are going to be available for training aspiring conservators, what they have in mind is apprenticeships or similar schemes. Guess what anybody needs to obtain a grant: an accredited workshop in which to train or an accredited course of instruction. One final argument: we're going to look a right bunch of amateurs (and I don't mean just FoMRHI, but musical instrument conservators as a whole) if we can't get our act together and work out something like other such organisations do. I have no real ideas how we are going to achieve this (as you'll see shortly from what I told them at the meeting), and your comments, suggestions, ideas, and so forth are urgently required.

First, this is what the various other societies do. You will see that we are by no means alone in not having any accreditation scheme, and I imagine that I am not the only Hon. Sec. who is writing this sort of note to his or her members. What follows is taken from my scrappy notes and not put as formally put as they did:
The Association of British Picture Restorers have a two-tier membership. They have about 200 Associate Members who are anybody who is not actually disreputable, and about 50 Full Members who have been associates for at least seven years and who have persuaded two full members who have spent two or more hours in their studio assessing their work that they are competent, reliable, etc, and this assessment has then to be approved by their Council. They turn down about twice as many applicants as they accept.

The Association for Studies in the Conservation of Historic Buildings have no accreditation for architects in conservation. Architects are of course strictly accredited as architects, but that training and examination does not necessarily include anything about conserving historic buildings.

FoMRHI came at this point, but I'll leave us to the end.

The Biology Curators' Group is wide open; anybody who looks after biological specimens is welcome to belong, and if I remember rightly, so is anybody who is interested in the subject; they are in a very similar position to us, save that their subject is one that is much easier to assess.

The Geology Curators' Group is a similar set-up to the Biologists, but there are only nine of them, six in the UK and three in Canada. There is no training available in conservation of geological material, and no money.

The Guild of Taxidermists is a three-tier organisation. Associate Membership is open to anyone; Personal Membership is (if I've got this sorted out right) open to any taxidermist working in a museum; Professional members are assessed, but I haven't any note of how or by whom. They have 250 members, 18 of whom are Professional. They have not turned any attention to conservation; they are too busy with taxidermy.

The Institute of Paper Conservation have been thinking about accreditation. One problem is who should be the accreditors; it has been suggested that they should have been fifteen years in the field and, like our Fellows, held to be reliable etc by their peers. Another is how should they accredit; the suggestion here is eight years training and experience, plus the result of a visit like the Picture Restorers. They are worried that accreditation could be very expensive, since it involves the time and expenses of two people.

The Irish Professional Conservators' and Restorers' Association is an umbrella group of about 100 members plus those who are interested but don't have a vote. There is no training available in Ireland (I wasn't clear whether this was Belfast or the Republic, but I think they were from the Republic) except by apprenticeship.

The Science and Industry Curators' Group have no qualification scheme. They stressed the danger of accreditation pushing out people who have worked in industry all their lives and who are now working as conservators etc in industrial museums.

The Scottish Society for Conservation and Restoration was inaudible from where I was sitting.

The Society of Archivists is open to all who are interested. They are establishing a register of professional archivists and conservators as an inner tier. They run an in-house training scheme for conservators, and training is also available elsewhere. Elevation to the second tier is by similar methods to that of the Picture Restorers.

The United Kingdom Institute for Conservation (henceforth UKIC) is working on accreditation. Like others above, one requirement is eight years exper-
ience. Unfortunately I did not make any notes of the discussion after lunch (all the foregoing, including us, was in the morning), but it is quite possible that any accreditation scheme that we can think up could be in association with the UKIC; they could act as an umbrella organisation for us all. One problem is their own standards; I reminded them over lunch of their Christmas Conservation Symposium at the V&A in 1983 (see my Comm. 501 in Q 34, January 1984) at which there was constant confusion between conservation and restoration. There was some similar confusion over these two concepts during the afternoon’s discussion here, too, which I chipped in on to emphasise the difference, which as Cary and others have pointed out in past Qs is so important in our field.

What I told them about FoMRHI [with comments added today in square brackets] was that FoMRHI has no formal accreditation system because:

1) There is no universal agreement on standards; the ideal of reversibility is seldom achievable in practice.

2) There is a dichotomy between conservation (a museum’s concern) and restoration (what a player will require; [I didn’t raise the problem of the museum that wants its instruments to be played, which most of them do from time to time, especially their keyboards], and the majority of the people working in our field are restorers, or even only repairers, working for players.

3) There is even less agreement on the competence of individual craftsmen; one person will refer to a certain craftsman as an expert, another to the same worker as a butcher. [This was rather washing our dirty linen in public, but it is in fact going to be one of the most serious problems in accreditation; anybody whom I suggest as an assessor, someone else is going to have kittens about, and vice versa, so we might as well start to face it right from the beginning].

4) There are no training facilities in this country for musical instrument conservation, and not much for restoration either. [Maybe I was wrong here, but I’ve had the impression that you can’t go to the London College of Furniture or anywhere else and just study conservation or restoration, though it is a part of the general course. If I’m wrong, please correct me].

5) The standard of knowledge required is extremely high, and it is, in my view, impracticable to expect any conservator to be able to reach such standards in more than a very limited field. (I then went on to give examples of the different periods of harpsichords and the difficulties of recognising what has been done to one over the centuries, and of the dangers of allowing the harpsichord conservator to get at a bassoon or a Stuart trumpet, and continued:] It would be the height of folly to ask the violin restorer to tackle the harpsichord (nobody conserves violins today since practically no historical violins survive in original state, and if one does appear the immediate reaction of most restorers is to rip out half the original parts and put it into the modern state required by most professional violinists).

6) Thus accreditation, in any formal sense, would require a system of examinations which it would be almost impossible to
draw up, with standards almost impossible to achieve even if
any two experts could reach agreement in setting them.

And finally I said that those of us who need work done on an inst-
ument tend to have a personal list of people whom we would trust
for a certain job; if it is to be put back into playing order, we
might ask one person, whereas we might ask a different person for
a museum conservation job on the same instrument, though obviously
in a number of cases we can trust one person to work to either
standard.

After having heard the various other speakers, I think that I was too pes-
simistic in my clause (6) above. Certainly after the afternoon's discus-
sion, and most of all after the general introduction and explanation of
what this was all about, which made it pretty clear that we are going to
have to think something up whether we like it or not, I think that we are
going to have forget all my reasons of why we haven't got such a system,
and work out some ways of producing one.

However, I am still very much against the idea of accrediting people as mu-
sical instrument conservators. Maybe paintings are sufficiently alike each
other, whether they are oil, water, or tempera based, or on wood, canvas,
or fresco. I still don't think that someone who has trained, and been ac-
credited, as a keyboard conservator is by that fact safe to handle a violin
or a trumpet. I'd be a lot happier to see keyboard conservators, woodwind
conservators, brass instrument conservators, and so forth. There shouldn't
of course be any restriction on the number of categories that anyone could
seek accreditation for, but s/he would be accredited as a woodwind and a
brass instrument conservator. The customer could, and probably would, be
suspicious of the conservator who was accredited in too many fields, just
as most people are of the maker who says he makes too large a range of in-
struments for credibility.

I shall, of course, send a copy of this to the Conservation Unit. I and
they would welcome your further comments and suggestions. I have not yet
had any reactions to my note in the last Bulletin (p.5) about training, and
this also I and they would welcome comments on. The big question is where
and by whom. If you were willing to offer to take apprentice/s, please let
me know. If you can suggest whom it would be worth their approaching to
see whether they would take apprentice/s (ie whom you would trust as being
both competent and accreditable), again please let me know. I find it dif-
ficult to suggest people; I think of A, and then remember what Y said about
him, and what Z said about B, whom Y cracked up as a first rate chap. The
whole thing is a very difficult subject, and remember, too, that we don't
want to be sued for libel!

Finally, can any of you suggest names about whom there is no question re-
garding their expertise? Sooner or later we are going to have to produce
some potential accreditors. They don't necessarily have to be conservators
themselves (that's something that will grow up over a period of time), but
they do have to be people who, if they say "this is a competent conserva-
tor" or "this is not up to standard", will be believed both by the communi-
ty as a whole, as well as our membership, and by the chap whose work they
are turning down.
I am writing to invite you to take part in this conference, promoted by the National Early Music Association, which is to be held at the Guildhall School of Music, London, from Thursday 21 to Saturday 23 July 1988.

The aim is to gather together, perhaps in an unprecedented way, scholars, players and instrument makers, to share the fruits of recent researches and developments, and to discuss matters of common interest. Morning and afternoon sessions will present papers on keyboard music up to 1800, on instruments (their design and construction, historical developments, makers, restoration, etc.), and on performance practices. Emphasis will be placed upon forging links between these related disciplines, and on their mutual illumination. Contributors are urged to consider using live or recorded musical examples by way of illustration.

Offers of contributions in any of these areas are welcome, but several subjects have been chosen for special exploration through grouped papers, demonstration and round-table discussion:

1. Keyboard music and instruments of the 14th and 15th centuries.
2. The archicembalo.
4. Keyboard instruments in ensemble; continuo.
5. The piano in 18th-century England.

The conference will take place in the Concert Hall of the Guildhall School, which will also house an exhibition of keyboard instruments, many of them made by students of the London College of Furniture. This will show a wide range of musically important types, from the 15th to 18th centuries, highlighting recent and adventurous reconstructions. The instruments will be available for trial, and roving lunchtime recitalists will perform on them.

We hope to present two major evening recitals in association with the conference, and the possibility of recitals on important 18th-century organs in City and east-end churches, and of visits to London instrument collections, is also being explored. If there is sufficient interest, these fringe activities might extend one day earlier or later than the conference.

Travellers from abroad may like to note that this conference will start three days after the close of the Conference on Baroque Music at Durham University.

I will be glad to receive offers of papers, and any other suggestions. I hope to prepare a provisional programme at the end of January. Please would you also spread the word of this gathering to friends and colleagues who might like to take part.

Lewis Jones
Conference Organiser
1987 FoMRHI List of Members - 3rd Supplement as at 5th January 1988

* in left-hand margin = change of address or other change

Robin Almond, 18 Blackboy Lane, South Tottenham, London N15 3AR, UK; 01-800 2144 (hpschd, etc; M, R).

S. R. Barrell, Singel 50, NL-1015 AB Amsterdam, Netherlands.

Peter Bavington, Unit 255, 27 Clerkenwell Close, London EC1R OAT, UK; 01-251 2147 (add clavchd and R).

James Biggood, The Old Nunnery, 2 Highgates, Church Rd, Gosfield, Halstead, Essex CO9 1TL, UK; 0787-474794 (cittn, gittn, fidl, ctar, rebc, cavyng; M).

Jan Bouterse, Sandenburg 69, NL-2402 Alphen a/d Rijn, Netherlands; 1720-4597.

Richard Burnett, Finchcocks, Goudhurst, Kent TN17 1HH, UK; 0580-211702 (keybds; P, C, coll).

Brian Cohen, 'Rosedene', Peaslake Lane, Peaslake, Guildford, Surrey GU5 9RJ, UK (str. instrs; M).

Warwick Cole, 334 Prestbury Road, Cheltenham, GL52 3DD, UK; 0242-517192 (keybds, R, P, res; ed. Harpsichord & Fortepiano).

John Cousen; 0484-27870

Lucy van Dael, Vondelstraat 57, NL-1054 GK Amsterdam, Netherlands; 020-188459 (vln, via; P).

Elena Dal, Cortivo, Contra Della Misericordia 38, I-36100 Vicenza, Italy.

Slava Egorov, Severnyi Prospekt 89-2-72, Leningrad 195252, USSR.

David Fallows, 10 Chatham Road, Manchester M16 6DR, UK; 8811188.

Società Italiana del Flauto Dolce, Via Confalonieri 5A, I-00195 Roma, Italy; 06-354441.

M. W. Geen, 93 Watermeadow Dr, Northampton NN3 4ST, UK; 45319.

Donat Gill, Churchcroft, Baker Street, Appleton Wiske, N.Yorks DL6 2AQ, UK; Great Smoatton 860.

Rob Gilliam-Turner, M McGuffey Art Center, 201 Second St. N.W., Charlottesville, VA 22901, USA; (804) 295-4268 (recrdr, trav; M, P).

Alan Guto, 5 Bessemer Road, Norwich NR4 6DQ, UK; 0603-628072 (hpschd; M).

Barry N. Heighton, 55 Winchester Road, Countesthorpe, Leicester LE9 3PH, UK (ww; M).

Peter Hultmannsberger, Rosenauerstr. 17b, A-4040 Linz, Austria; (0732) 238 5594 (gamba, bar. vln, vcl, baryton; R).

Gerhard Janke, Fischbeker Weg 26a, D-2104 Hamburg 92, West Germany.

P. Malcolm Jones, 73 Oxford Road, Moseley, Birmingham B13 9SG, UK; 021-449 7139 (keybds, reed ww; M, Coll, P, res).

Hubert Kwisthout, 15 Morley Road, London SE13 6DQ, UK; 01-852 0758 (ull11.pp; M, R).

John Lund, 21 Allington Garden, Boston, Lincs PE21 9DN, UK; 0205-67971 (ob, fag, recrdr, pipes, chalmx; M, P).

Donald Mackinnon := see Mimi Waitzman (frtepno; M, C, R, P).

Inés Martinez := see Paul Richardson.

David W. Mayes, 97 Fillebrook Road, Leytonstone, London E11 1AB, UK; 01-539 4616 (ww; M).

Kevin Mercer, 44 Menangle St, Picton, NSW 2571, Australia; 046-771-936 (lute, gamba; M, P).

Jonathan Morgan, 33 Church Road, Teddington, Middx TW11 8PF, UK; 01-943 1873.

National Early Music Association (NEMA), Annette Heilbron, 8 Covent Garden, Cambridge CB1 2HR, UK; 0223-315681.

Ernest George Norris, 191 Bishopsworth, Harlow, Essex CM1 5UT, UK; 0279-416440 (med. bowd str. instrs; M).

Jim Parr, Flat 2, Lankester Quad, Green College, Oxford, UK; 514836 (bagpp, ww, brass; M).

• Paul Rans, Uzerenwegstraat 45A, B-3050 Sint-Joris-Weert, Belgium; 016/47 32 43.
• Analia Restrepo, Calle 85 No. 10-11 Apto 201, Bogotá, Colombia, S.America.
• Paul Richardson & Inés Martinez, Vaquería 8 Esca.Dcha.59D, Madrid 28007, Spain; 409 4726.
• Len Stanners, 11a Rimu Rd, Mangere Bridge, Auckland 1701, New Zealand; 665-203.
• James Tyler, School of Music, University of Southern California, Los Angeles, CA 90089-0851, USA.
• Mimi Waitzman & Donald Mackinnon, 11 Sprowston Road, Forest Gate, London E7 9AD, UK; 01-519 1170 (hpschd; M, C, R, P, tuning & temperament).
• S.A.Walker, Brockley Cottage, Greenways Lane, Carleton Rode, Norwich, Norfolk NR16 1RF, UK (ww; M, P).

ORGANOLOGICAL INDEX

String Instruments: Brian Cohen
Keyboards: Richard Burnett
Percussion: Donald Mackinnon
Clavichord: Peter Bavington
Harpsichord: Robin Almond
Lute: Kevin Mercer
Guitar/Cittern/Gitten: James Bisgood
Bowed Strings: Ernest Norris
Rebec/Fiddle: James Bisgood
Violin Family: Lucy van Dael
Viola da Gamba: Peter Hüttenberger
Woodwind: Barry Heighton
Traverso: Rob Gilliam-Turner
Recorder: Soc.Ital.Flauto Dolce
Reed Instruments: Malcolm Jones
Chalumeau: John Lund
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Oboe: John Lund
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Belgium: Paul Rans
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Spain: Paul Richardson
UK: Barry Heighton, Leics
London: John Lund, Lincs
Rest of UK: Hubert Kwisthout,SE13
USA: Andrew Parrott, Will
USSR: Brian Cohen, Surrey

3070 (recrdr, bar.trav; M).
Register of Early Music

REGISTRATION FORM

Please read carefully before completing the questionnaire

Use a separate form for each individual or ensemble. (This form may be photocopied as required). Activities should be indicated by circling the relevant code number(s) overleaf and adding "p", "c", "b" &/or "t" as appropriate.

Individuals

Please enter your name exactly as you wish it to appear in the Register (eg: Mr J Smith; J Smith; Mr John Smith; John Smith; etc). 700 codings should not be used by individuals.

Ensembles

Please enter the name and address of your principal contact. 700 codings only should be used - do not enter the individual instruments of your ensemble.

Makers

Please use codings 970-979 only; these categories have been made deliberately broad, since future editions of the Register will contain detailed lists of instrument types & models available. Please do not use codings for individual instruments - these refer to performers and teachers only.

Performers and Makers

p = professional (ie, forms part of livelihood);
c = competent amateur; b = beginner; t = teacher

Please return completed forms to NEMA, Register of Early Music, 20 Wolseley Gardens, LONDON, W4 3LP
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<td>415</td>
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<td>Flageolet (English)</td>
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<td>420</td>
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<td>421</td>
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<td>Vocal chamber ensembles (female)</td>
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<td>Vocal chamber ensembles (mixed)</td>
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<td>Choirs (female)</td>
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<td>Classical wind</td>
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<td>725</td>
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<td>726</td>
<td>Recorder (chamber ensemble)</td>
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<td>727</td>
<td>Recorder choirs</td>
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<td>730</td>
<td>Viol consort</td>
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<td>Mediaeval chamber ensemble</td>
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<td>732</td>
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By using the appropriate coding(s)
a " as appropriate.

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901 Bow makers
902 Reed makers
903 String makers
904 Instrument-making supplies
905 Instrument maintenance (keyboard)
906 Instrument maintenance (other)
907 Instrument hire (harpsichord)
908 Instrument hire (organ)
909 Instrument hire (other)

Other activities

Suggestions

INSTRUMENT MAKERS

INSTRUMENT MAKERS

INSTRUMENT MAKERS

INSTRUMENT MAKERS

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**First Name or Initials** (as preferred)

**Surname**

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a' = 415.3 and all that

Jeremy (Comm. 829, paras 3 & 4) asks how to get on to a C or F to lay an unequal temperament so that one lands up on a' = 415.3 Hz. John Barnes (Comm. 831) suggests a roundabout solution by using his rather esoteric forks of 442 & 444 Hz.

VALLOTTI I find the best, simplest and smoothest compromise temperament for 18th- and very early 19th-century music. I suggest the following methods for tuning this temperament, starting with forks of either 415.3 or 440 Hz (the two most obvious forks). With these methods F is arrived at straight away in the cycle.

(1) Number of beats per second are given to the nearest whole number.

(2) An analogue wrist watch with a second hand which jumps, or the digital type which flashes are useful aids: if one of these isn’t to hand picture the sound of the Greenwich “pips” or hum “Colonel Bogey” (or national quick-march equivalent), accenting every other beat.

(3) o = note to be tuned
   * = note already tuned
   ↑ = direction of pitch alteration from pure interval
   [ ] = notes already tuned. Use them for checking purposes.

Incidentally, BARNES/BACH only has the pitch of one note (B) different from Vallotti: just tune completely as shown above, then move the “B” to become a pure 4th to “e”.

(The more accurate calculations to get a' = 415.3 Hz from a 440 Hz fork are as follows:

A Vallotti or Barnes/Bach f' is 331.14 Hz.
Making a' beat 5.6 Hz sharp to f', the beating area of a''' must be 5 x 331.14 + 5.6 = 1661.3 Hz.

a' then is 1661.3 \[\frac{4}{4}\] = 415.3 Hz.)
I find three forks, at 415.3, 425 and 440 Hz (all obtainable "off the peg") are sufficient at present to cope with pitches of music from the baroque era to present day, for in many ways it is easier to tune a note sharp or flat to a fork by a few cycles per sec. (say 2 to 6 Hz) than to get it spot on. Assuming one can count fairly accurately up to 6 beats a second, then these three forks give a range of 415.3 ± 6, 425 ± 6 and 440 ± 6, i.e. continuous from 409.3 to 431 Hz and from 434 to 446 Hz. If one has a sufficiently good in-built Bartokian Bulgarian rhythm to count 7 beats a second the gap from 431 to 434 Hz is closed, and one has a complete range from 408.3 to 447 Hz. Very soon I will need to bring out my old high-pitch forks to extend this range further for accompanying 19th-century high-pitch wind!

Finally, a comment on R.A. Chiverton's table (Comm. 835) of frequencies related to cent deviations from the nearest equal tempered note. It is interesting to have this, but it's surely much simpler and quicker to tune unequal temperaments (which usually have a considerable number of pure intervals) by ear?
Martha Goodway's article in 'Science' (Vol 236, May 1987, p 927) gives a valuable insight into the technical possibilities of old wire-drawers, but the thesis proposed that 'Harpsichords... were made with longer strings about the beginning of the 17th century' (1) is incurably flawed. I only intend to mention the application of her article to harpsichords, and since her examples involve Italian instruments, I shall restrict myself to those.

The assiduous reader of the Galpin Society Journal and FoMRHI will know that the thesis proposed by Goodway on the development of harpsichords is not to be found in the footnotes cited (2). It seems then that Goodway herself has applied the ideas of Segermann and Abbott's paper (which concerned an orpharion) to harpsichords. At any rate, the example given by Goodway of the illustrations printed by Zarlino and Praetorius is offered as an example of this supposed change in the scalings of harpsichords, and not as an argument in itself. This example is so weak, however, that it would be like charging at an open door to offer too detailed an analysis of the shortcomings of these illustrations as a basis for supposing that harpsichord scales became longer around 1600. It will suffice to note a few points:

1. Praetorius does not indicate that the harpsichord illustrated is an Italian one. It may well be a German instrument, and indeed shows signs of the strapwork decoration which would be untypical of Italian instruments. If it is not Italian, are we entitled to compare it with Italian instruments?

2. The Zarlino illustration is without scale and obviously only an indication of some features of a harpsichord. The keyboard does not have the range one would expect around 1558 (C/E-f'' or C/E-c'''') and the number of strings, jacks and tuning pins drawn does not even equal the number of keys shown. Can we take such a simplified representation of a harpsichord as a serious basis of comparison with anything at all, let alone giving accurate detail about the scaling of the instrument?

It is not necessary to spend much time contesting the merits of these illustrations since there are at least 41 Italian harpsichords and over 60 Italian virginals that have survived from the 16th century which we can use to test Goodway's thesis.

The earliest two harpsichords known (from any country), by Vincentius 1515, (3) and Hieronymus Bononiensis, 1521 (4) have been too much altered that we can be sure of their original scales; even the educated guesses which are possible are not relevant here, since we need reliable data. The next oldest harpsichord is signed 'Alexandri Trasuntini', was made in 1530.
and is a genuine product of his workshop (5). The scale at c'' is 342 mm. Several other harpsichords testify to the use of scales of about this length, and others to scales of about 306 mm. The earliest virginal which can be authenticated is the 1523 Francisci de Portalupis (6) which has a c'' scale of 307 mm. These scales are used throughout the 16th century, although presently-published information is scanty on this subject. (7) I would stress that the details given here are of the original scalings, which in many cases are not the present scalings.

There were some harpsichords with exceptionally long scales (8): examples of these are the well-known Baffo, 1574 (9). The 1579 Baffo (10) has exactly the same scale as the 1574 instrument, and the Franciscus Patavinus, 1561 (11) originally had a similarly long scale. These instruments were intended to sound a fourth or a fifth lower than the scale of 306 mm mentioned above. They could arguably be candidates for a strong-iron-wire-theory, providing that one were prepared to accept that no harpsichords have survived from between 1561 and 1574 with these long scales, and that after 1579 no further long-scaled instruments survived. Anyone trying to make sense of these long scales in terms of stronger-than-normal wire, would be hard pressed not to conclude that the secret of making this wire must have been lost c1580, since no long-scaled instruments survive from after that date. What makes the strong-iron-wire-theory even more unlikely here is that there is documentary evidence of instruments having been made for the lower fourth (alla quarta bassa) in Italy. (12) Thus, I would conclude that these long scales were evidence of exceptionally low-pitched instruments; these low-pitched instruments appear to have been the exception rather than the rule.

The 1596 Celestini harpsichord (13) is offered as an example of the 'Zarlino type' of instrument. Although I have not yet had an opportunity to examine this harpsichord, it seems to me that it is likely that the present scales are original (14): if this is so, then the Celestini is a rare example of a quint harpsichord, with the c'' of 238 mm standing a fifth above 356 mm, a commonly-occurring, 16th-century Venetian scale. Although it is rare, it is not the only example known (15). The 1596 Celestini harpsichord is not an example of a normal type of instrument.

For Goodway's thesis to be supported by the Celestini example we would have to find that scales before 1596 were as short as the Celestini, and that thereafter, they are longer. We do indeed find that scales after the 1596 Celestini are longer, but that is only because the Celestini scale is so short: anything is longer than the Celestini scale, except a 4' instrument.

When we consider the 16th and 17th-century scales together, then we find that there is a shortening of scales around 1600 and not the lengthening called for by the strong-iron-wire-theory. This shortening of scales is not due to a change in
material strengths, rather, it results from certain types of instruments no longer being built.

In the 16th century, harpsichords with a 1x8',1x4' disposition predominate; these instruments have C/E-f''' compasses in the main. Around 1600 these harpsichords were no longer built and as a result the long scales for iron wire were dropped in favour of shorter, brass scales. Quite why this happened is a complicated matter (16). Thus, quite the reverse of Goodway's thesis occurred c1600, namely, that Italian scales became shorter.

As a careful materials' analyst, Goodway has wisely restricted her study of iron wire samples to those pieces for which the provenance could be firmly established: these were 18th-century in origin. In other words, there is no metallurgical evidence presented that iron wire was, or could only have been drawn to a lower tensile strength before about 1600. The idea that the wire before 1600 was weaker seems to have come only from the considerations of the scalings of instruments. As I have shown, this idea receives no support at all from 16th-century Italian harpsichords and virginals. Indeed, these instruments appear to argue the exact opposite, namely, that iron wire in 1523 was as good as that in use at the end of the century. (17) Certainly, the scales mentioned above are used consistently throughout the 16th-century. Unless, and until metallurgical evidence to the contrary appears, it seems to me correct to assume that wire-making was as advanced c.1500 as it was a century later.

Footnotes
5. This instrument is not listed in D.Boalch, 'The Makers of the Harpsichord and Clavichord 1440-1840', 2nd ed. Oxford (1974). It is in private ownership in Italy. There is no other published material about it.
7. The most recent, detailed published list of scalings of 16th-century Italian instruments is to be found in H.Henkel, 'Beitraege zum historischen Cembalobau', Leipzig (1979), but this is mostly a collection of previously-published material. Although I have given an analysis of the development of the Italian harpsichord in 'The New Grove Musical Instrument Dictionary', London (1985), there is not a detailed list of
instruments there.

8. R. Shann has mentioned Baffo's instruments in FoMRHI, No. 48 (1987) Comm. 821, p 32. I have described the several stages of alterations to the 1579 Baffo (with photographs) in 'Nouvelles etudes sur les clavecins italiens', Musique Ancienne 20 (1985), p 67. The present state of the instrument is short-scaled, and not with the original, long scale.


11. Deutsches Museum, Munich. The present compass of GG/BB-c''' is not original; the original compass was C/E-f''', according to my examination of the instrument. See D. Wraight, 'Il cembalo italiano al tempo di Frescobaldi: problemi relativi alla misurazione delle corde e alla tastiera', p 375, in S. Durante and D. Fabris, Girolamo Frescobaldi nel IV centenario della nascita, Quaderne della Rivista Italiana di Musicologia, vol X, Florence (1986).


14. This information was kindly supplied to me by E. R. Turner.

15. The only two other quint harpsichords I know of are an unsigned instrument in private ownership in England, and the 1628 Albana harpsichord of the Museo Civico, Bologna.

16. I have dealt with this subject at more length in a forthcoming Grove paperback devoted to the harpsichord (and related instruments).

17. The basic assumption behind this statement, is of course, that the pitch to which a 306 mm c'' string was tuned in 1523 was substantially the same as at the end of the century. I believe this assumption to be correct, but it is beyond the scope of this note to develop the argument further.
ENGLISH PIANO-FORTE WIRE:

a controversy during the years 1823-1825.

It is rather unusual to encounter a series of documents which offers the possibility of relating a controversy between different craftsmen of a given country and of a given epoch. The controversy about English piano-forte wire we deal with here is related in two English magazines, the Mechanic's Magazine and the philosophical Annals, which played a huge part in passing on new technologies during the first half of the 19th century.

My first reaction, when stumbling on the paragraphs printed there, was to pick up some data in order to make a communication centred only on the history of wire drawing, i.e. a kind of "contribution to the history of music wire drawing in England". On reflection, I decided to publish the full version of these different papers sent to the Editors of these magazines during the years 1823-1825.

When a researcher finds documents, his temptation can be to focus himself too much on his specialized field. The choice of excerpts to publish is always a personal decision. That's why I thought that the following data, published in reprint form, could also be of some interest to the piano-forte specialist (which I'm not), to the historian of economy or trades, in England or in general, to whoever is interested in how practical knowledge spread during the first decades of the 19th century, to the historian of technological litterature, and so on...!

When the following documents are seen from the point of view of the historian of music wire drawing, it is interesting to notice that the superiority of Berlin music wire is not attributed to the skill of the wire drawers themselves, but is explained by the special quality of the raw material used. Though the tensile strength is quite the same in both cases -according to some (valuable?) testimonies, English wire is said to be sometimes of a higher tensile strength- the weakness of this latter is said to lie in the difficulty of coiling it round the "ordinary pins" [see document 3, 4 & 5]. As we shall see in document 3, a special kind of "fastening" is necessary. As I'm not a p.f. maker, I have no idea of the exact nature of the special "method of fastening" mentioned there.

Two further comments:

1. We must not be without a critical eye, when reading these documents. Written by craftsmen, they seem not to be free of passion: a "cool" scientific method has obviously not been employed in that field by the different authors and inconsistencies are not rare in the following pages. It is rather difficult for us to get a precise image of what did really happen. Numerical or experimental data are, with one or two exceptions, grievously missing. We have here a good example of a typical "craftsman's debate"...! (But arguing passionately is also encountered in other Magazines... than the Mech. Mag. of the first decades of the 19th century...!)
2. The different data given here, especially the names, addresses and places mentioned, can be very helpful signposts for further research in the Archives. As far as I know, no exhaustive work devoted to the "History of English music wire" does exist nowadays.


VII. Manufacture of Pianoforte Wire.

(To the Editor of the Annals of Philosophy)

SIR, London, Oct. 8, 1823.

I should feel much obliged to you, or any of your correspondents, for the communication of any particulars respecting the manufacture of pianoforte wire, and the cause of the very decided superiority of what is called Berlin steel wire over all that is made in England. Have any of the new alloys of steel and silver, &c. or has Mr. Brookedon's method of drawing through conical holes made in diamonds, rubies, sapphires, or other hard stones, been tried, to make pianoforte wire? Considering the great quantity and value of the wire used in musical instruments, made in the greatest perfection in this country, it is to be lamented that our wire-drawers suffer themselves to be excelled by foreigners.

What mode of whitening brass wire will best preserve it from oxidizement, and least injure its elasticity?

I am, Sir, your constant reader, M. A.
maker being required before advice of the goods can be obtained; and then the crafty German takes care so to forward it, that it is paid for before delivery. We have in England hitherto failed in making it, entirely through the inferiority of our iron; for our wire-drawing is by far superior to theirs, as I have found to my cost, having frequently been obliged to pay in London one shilling per lb. for re-drawing the Berlin wire, in consequence of its inaccuracy.

The cost to the piano-forte maker in London, by the hundred weight, is about 4s. per lb. three-fourths of which are expended in labour, which might, by attention, go into the pocket of the English artisan; and under this impression I consider it a duty incumbent on every one, having the welfare of his countrymen at heart, to endeavour to place it there, in preference to that of the over-reaching foreigner.

The peculiarity of the Berlin wire consists in its extreme tenacity, arising from the exceedingly continuous nature of the fibres of the metal, which is occasioned by the superior mode of preparing it before it comes into the hands of the drawer; this circumstance has in England been quite unattended to.

I find I have proceeded to a length I had not contemplated; but should it be the occasion of an exertion of the talent required for the perfecting English iron wire for musical purposes, these observations will have had the end proposed by Your well wisher,

A PIANO-FORTE MAKER.

GENTLEMEN;—It is with a considerable degree of surprise that I observe in No. 24 of your very valuable work, a communication from a Mr. Gunby, relating to the making of English iron-wire for musical instruments, by Mr. Deakin, of Birmingham. It is a communication not only calculated to mislead the musical instrument trade, but to divert the attention of those who may have it in their power to make English wire rival that of Berlin from persevering in this very laudable object. I am no stranger to Mr. Deakin's wire; it has been tried, and what is the result? It has been found not only not superior, but much inferior to good Berlin wire. That it will bear as great a strain or pull in a straight line I have not much doubt; but let any one string his instruments with it (I mean in the ordinary way), and he will find, to his cost, that he will be obliged to string them again, and that with the ordinary wire too; for this of Mr. Deakin's snaps at once. To prevent this snapping, those who use the Birmingham wire are obliged to adopt a new and complicated method of fastening, which
adds about one-third to the price, and makes it ultimately dearer than the best Berlin. The excellence of the latter is owing to its superior tenacity, which admits of its being coiled round a pin without breaking; and until our English wire can be brought to equal it in this respect, nothing will be effected. Lord Stanhope made a discovery similar to that of Mr. Deakin some years ago. I have myself some common English wire by me, that I prepared in a particular manner, which is equal, if not superior to Deakin's; yet still, though it comes up to pitch, it constantly breaks close to the pin round which it is coiled.

**TRUTH.**

The person signing himself "Truth," says, "that he is no stranger to Mr. Deakin's wire; that it has been tried, and found much inferior to good Berlin wire;" he admits, or "has not much doubt that it will bear as great a strain in a straight line," but denies the possibility of stringing instruments in the ordinary way with it, "as it snaps at once." Now, I will venture to affirm, that not one word of this is true; the wire made by Mr. Deakin for musical purposes is a tempered steel wire, which, at a given temper, is sufficiently flexible to coil round a pin in the ordinary way, in which state its cohesion is greater by 20 to 30 per cent than any Berlin wire of equal size—which I have ever used, or seen used. I have now standing upon an instrument several strings of Mr. Deakin's wire, put on in the ordinary way (to replace others of the Berlin wire, which broke in tuning), and which will bear the tension of a whole tone above concert pitch. The scale of this instrument is an equal ratio, and the length of C on the first ledger-line, below is 24 inches, which is one inch longer than is usually given. With regard to the complicated fastening which your correspondent has mentioned, it is in principle and application very simple, and affords a facility and precision in tuning, of which the common wrest-pin is incapable. With this fastening Mr. Deakin's wire will, when at that temper which affords the greatest possible power of cohesion, stand at concert pitch, when middle C is 16 inches long (being 4 inches longer than the best Berlin wire will stand at); at this tension I have some now standing upon a new instrument, and there is still enough of cohesive reserve to raise the pitch another tone.

Your correspondent has made an allusion to what he terms a discovery of Lord Stanhope's, similar to that of Mr. Deakin's. But here again his assertion is incorrect; the wire used under the direction of Lord Stanhope was a common steel wire, not tempered, and very thick; I believe the smallest size was nearly one-sixteenth of an inch in diameter, and graduated to nearly three-sixteenths in the bass; these wires were soldered to the fastenings.

I shall feel much obliged to your correspondent if he will favour me with a piece of the wire, which he says he "prepared in a particular manner," in return for which I shall be very happy to convince him of his erroneous opinion by ocular proof of what I have here stated, but cannot hold any further communication with anonymous signatures.

I remain, Gentlemen,

Your obedient servant,

E. DAVIES,
Piano-Forte Maker.
GENTLEMEN:—It was not my intention to trouble you again upon this subject, hoping, at the same time, that Messrs. Deakin and Co.'s sense of the truth of what I had stated would prevent any more attempts to mislead the musical trade; but I find, in page 441, Vol. 1 of your Magazine, that Mr. Davies has “ventured to affirm, that not one word” of what I had stated was true. Now, this is as perilous a “venture” as man ever embarked in, and makes it necessary that I should once more intrude for a few moments on your attention.

In the first place, Mr. Davies says that Mr. Deakin’s wire is “a tempered steel wire.” Of this I was perfectly well aware; for the manifest object which I had in view was to direct the attention of some person to the making of English iron wire to equal the Berlin.

In the next place, he says that Mr. Deakin’s wire, “at a given temper, is sufficiently flexible to coil round a pin in the ordinary way.” What Mr. D. may mean by “the ordinary way,” I know not; but if he means with the ordinary pin, I must wholly deny his statement. I apprehend, however, that the sense in which Mr. D. uses the phrase “ordinary way” must refer to the manner of coiling, as to which there can be no difference between coiling round a needle and round a LAMP POST. If Mr. D. means with a pin of the ordinary thickness, why did he put himself to the trouble (a day or two after my communication appeared in your Magazine) of making pins two or three times larger than the ordinary ones, to try experiments with—which in which, I have every reason to believe, he has wholly failed. If, moreover, this Birmingham wire is so very flexible, why does he give himself the farther trouble of annealing the ends of every piece which he uses?

With respect to what Mr. Davies says of the fastenings, I will give a rough comparative estimate of the expense of the usual and the new system, leaving your readers to judge between them:

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Here we have a difference of no less than £10 5s. created upon an article which sells for £30; so that this new way, without bettering the instrument a sixpence, increases the prime cost more than one-third. The new wire, too, is very imperfect, that about one-half is waste. I have only to state, in conclusion, that I did not presume to address you on this subject without being well acquainted with the nature and qualities of the wire which Mr. D. extols (having seen an instrument which is string with it). No person can feel more anxious than I do to see the use of Berlin wire superseded by equally good wire of English manufacture, but national partialities must yield to truth. I trust, the object proposed by your intelligent correspondent (p. 339, Vol. I) will be still followed up, and that ere long we may have nothing left to desire in this respect.—Yours, &c.

TRUTH; a Member of the Mechanics' Institution.

GENTLEMEN:—Last week a friend of mine obligingly handed me your valuable and economical Magazine, containing correct remarks on the "Want of English Iron Wire for Musical Purposes," by "A Piano-Forte Maker." I have for some time particularly attended to this part of our manufactury with considerable success, and shall be much obliged by your favouring me with his address, when I will send him samples, free of expense, which I doubt not will meet with his approbation.—Your most obedient servant,

A WIREDRAWER.
In his book "Geometry, Proportion and the Art of Lutherie" (Oxford University Press 1985) Kevin Coates has suggested that fine musical instruments were consciously and deliberately designed in a very mathematically and geometrically sophisticated way. This is an attractive idea which has previously been addressed by numerous authors who have been mentioned in reviews of the book in Early Music (Eph Segerman) and FoMRHIQ (W. Samson). I find it is necessary to further extend some of the reservations and criticisms of these reviewers and I fear there is not much left of value in the book except some pretty drawings.

As technical drawings are published for some of the instruments which Coates analyses, I attempted to compare outlines reconstructed using Coates' schemes with the outlines of two of the instruments as presented by the published drawings, the viol by Henry Jaye 1667 and the violin by Andrea Amati 1564. The accuracy and usefulness of these published plans deserves attention elsewhere.

The first problem was that the book does not give sufficient information to completely construct these outlines. While accepting that the book is not intended to be used as a series of working drawings, it is claimed to present the way that each particular design was generated. Coates's thesis would only be supported if a method was revealed that covered all the major features of a design. Coates admits that, in the case of the violin,

"The radius of this arc [the counter-curve, i.e. where the outer bouts meet the middle], like its upper-bout counterpart, is mathematically unrelated to the other values used in this instrument." (p. 68)

Surely the contribution that the counter-curves of a violin make to the appearance is just as significant as that of any other section of the outline. With the viol,

"The next arc, H'I', centre G', is of radius 112mm, the only major vector in the design which does not conform to the golden-section schemes." (p. 45)

This arc, which refuses to submit to the proposed schemes, covers about half the extent of the lower bout! More importantly, no theory is given to explain the location of the centre J for the radius that covers most of the rest of the bout, or for the equivalent point K for the upper bout. Similarly important omissions apply to the violin scheme. There is no theoretical justification for the amount of the "Great Circle" that is said to occur at the top and bottom of the violin. There is no scheme for locating the centres of the major bout arcs (E and E' in the upper bouts and K and K' in the lower). No justification is given for the particular location of the centre of the major arcs of the middle bouts. Coates also found no proportional significance in the positioning of the fold in the backs of viols or in the depth of the ribs of viols or any other instruments (p. 32).

Using information in the text, supplemented with some information implied in the technical half of the splendidly attractive drawings that conclude each instrument's analysis I constructed as much as possible of the violin outline (this involved reconciling a disagreement between text and drawing). When this was superimposed on the published plan of the instrument, there were many discrepancies, often in the order of 2mm which is far beyond the 0.5mm accuracy allowed for in the measurements. It is certainly too great an error to allow support for a claim that this design...
outline. In fact this constructed outline was a similarly good (i.e. bad) match with a nearly identical instrument from the Charles IX set, the 1574 violin in Carlisle (see Laurence C.Witten II, "The Surviving Instruments of Andrea Amati," Early Music October 1982). This could have been reassuring, but tracings of the various violin outlines in the book show a similar degree of congruence when jiggled about over each other. It was not possible to repeat the exercise for the viol as not nearly enough information to construct a significant section of the outline was presented.

Discussions with a professional mathematician confirmed my suspicion that it will always be possible to analyse these sorts of shapes in the way that has been attempted because of the amount of inaccuracy allowed for, especially when different perceptions of the various shapes are employed in order to maximise the apparent richness of the mathematical analyses. The division, for instance, of the inner bouts into one long and three short arcs is completely arbitrary and other analyses would have the same mathematical validity. In one place the length of the belly is the design parameter, in another it is the "design body-length". Ganassi is invoked as evidence of musicians' concern with proportion and the illustration from Regola Rubertiina is used as evidence for a bridge position yet Ganassi himself did not regard the bridge as an immovable object and it is obvious from iconographical evidence that viol and violin bridge position was subject to considerable variation. Although Ganassi and other writers supply proportional rules for fret placement, they add that the final adjustment is by ear. This demonstrates that while geometrical or mathematical constructions may be used in the course of designing an instrument, the final result is free from strict adherence to such rules. To claim that the mathematical relationships that are "revealed" by such analyses are meaningful is to approach the world-view of numerology. Mark Smith urges new levels of absurdity with his Stainer analyses (POMRHIQ Comm.841) by suggesting deliberate simultaneous use of Cremonese inch, Brunswick inch and Tirol zoll with possible references to the Christian Vesica Pisces, Jewish Star and Islamic Crescent.

In order further to illustrate the problem, an accurate tracing of the right-hand (construction scheme diagram) half of another drawing in the book, the Maggini viola, was superimposed on the left-hand half. This latter is claimed to be less subject to distortion, and thus presumably more accurate, than a photograph. Discrepancies were revealed that may not exceed what was an acceptable degree of inaccuracy for Maggini, but certainly undermine confidence that this design scheme was used to generate this outline. Following the same procedure with some more of Coates' examples produced varied results. The two cornerless viols were reasonably accurate, but the Tielke viol and the anonymous lyra da braccio showed serious incongruencies between the two halves of the drawing.

If outline drawings are made from the published drawings of instruments, they are invariably found to exhibit considerable asymmetries both when the left half of the front (or back) is superimposed on the right half, and when the front is superimposed on the back (See Roger Hargrave, "Tried and Tested", The Strad, July 1985. The discrepancy shown between the two halves is not as atypical as Hargrave suggests). This applies even to such an instrument as the violin by Antonio Stradivari of 1716 known as "Le Messie" which is an example from the "golden" period of arguably the greatest luthier of all time and "is in practically mint condition." (David D.Boyden, "Catalogue of the Hill Collection of Musical Instruments". It follows that any scheme that can be used accurately to construct the outline of one half of one plate CANNOT be similarly adequate for the other three.
It has been established that ordinary people will select as most pleasing a rectangle the ratio of whose sides approximate to the golden proportion. One should not, therefore, be surprised if a master craftsman who is constantly dealing with aesthetic considerations and the beauty of related shapes, creates a design which embodies this and other aesthetic truths. A sunflower needs no knowledge of Fibonacci or the golden ratio in order to arrange its seeds in the way it does. It is most likely that the luthiers of old conceived their designs pragmatically and as a whole, slightly modifying this curve or that until an acceptable result was obtained, than that they employed complex and abstract theoretical constructions with the intention of carrying some arcane mathematical message. This is not to deny that geometry and proportion were used as tools in the process of constructing the outline, but that the mathematical relationships that can be read into their designs were an important generative force. The compass arcs that remain on the insides of Strad bellies are remnants of the process of laying out the soundholes, not of the design process. Those marks in the "Servais" cello are a clear example of the master luthier deviating from his original design (see Sacconi's book or "The Strad", December 1987). It has been claimed that an analysis by computer can determine whether a certain text was written by Shakespeare. If we grant that this is possible, we are not led thereby to deduce that the text was created in the way that we have analysed it. Luthiers were certainly not ignorant of these geometrical and mathematical relationships, but with the complete absence of other evidence of their use of this method of design, post hoc analyses of limited success are insufficient to uphold Coates' thesis.

Of course there is a lot more to an instrument than its outline. The materials, archings, thicknessing, varnish, methods of construction and stringing all play significant roles in determining sound and it is the sound that both makers and users of musical instruments have at the front of their minds. While I am extremely favourably inclined towards the scientific method and the all-pervasive beauty and value of mathematics, it seems to me that geometrical analysis of instrument outlines is of no help in attaining musical ends. On the whole, I suspect it may be as valuable as astrology is to an astronomer.

Matters not addressed above include whether a design would generate the outline of an instrument or the mould; at least Sacconi's schemes refer to mould rather than instrument. Also, the fact that individual makers had many models, sometimes with very slight differences; the fact that different makers apparently following the same model achieve such different results; the degree to which instruments exactly reflect their makers' intentions; the degree to which extant instruments maintain their original dimensions; the level of accuracy and symmetry desired by makers (and who would claim they all had similar attitudes?) AND SO ON...

In Summary:

a) Mathematical/geometrical constructions may have been used in the process of generating new models for instruments but there is no evidence that there was any mysticism or symbolism involved.

b) It is virtually impossible to analyse the outline of a three hundred year old instrument with the confidence necessary to deduce the design process, if indeed such a formal method was used.

c) The most aesthetically or mathematically satisfying imaginable outline is neither necessary nor sufficient for the production of a fine musical instrument.

"THERE IS NO EXCELLENT BEAUTY THAT HATH NOT SOME STRANGENESS IN THE PROPORTION". ...Francis Bacon ("Essays" of 1625)
Contrabasso and Violone in the 16th Century

The term 'contrabasso' appears to derive from 'contratenor in bassus', a term initially used in the 15th century to denote a polyphonic part in a range lower than the tenor. 'Contrabassus' is a contraction of this term and 'bassus' is a further contraction. Both Ganassi (1542) and Ortiz (1553) clearly considered that 'contrabass' and 'bass' were interchangeable terms used for the bass member of a set of viols of the period. This instrument was the direct ancestor of the double bass. There seems to have been smaller bass viols (usually tuned to a higher pitch) primarily used for soloistic purposes. They were not called 'contrabasses' since they did not primarily take a part in polyphony (as the sets of viols did). This started the association of the term 'contrabass' with larger bass instruments at lower pitches. When the sizes of viols of sets decreased late in the 16th century, the only instruments of the old sizes that were still used in ensembles were the basses of sets, and they retained the old name for any viol, 'violone'. When violones needed to be distinguished, those of larger sizes or at lower pitches were termed contrabasses.

Viol Size Reduction

The contraction of sizes of viols in sets seems to have been a response to increased bass resonance resulting from the introduction of the soundpost and the availability of roped-gut thick strings. The original large sizes needed their long string stop to get adequate response on the all-gut lowest string, while string stops couldn't be longer because the highest strings would break. The desired highest and lowest pitches determined instrument sizes. The open-string range in each of the three sizes in a set was two octaves. The smallest was tuned about an octave higher than the largest and was about half the size. The middle size was appropriately intermediate in size and pitch. The largest had a string stop of about a meter and its highest string was tuned to about g at modern pitch (140 - 150 Hz). Nominal pitch could be g, a, c', d' or e'.

The reduction in instrument sizes made them more convenient and easier to play (and made the highest strings last longer), while keeping string pitches and bass resonance the same as before. The size reduction was about 20% and resulted in a loss of length of about 4 frets in the string stop. When the new innovations were applied to the old bass viol, now called violone, it could be tuned a third or fourth lower than previously. (Extra large bass viols that would have been tuned to such low pitches without the new innovations were not unknown previously, as can be seen in some 16th century German drawings).

Praetorius and English Viols

This situation is represented in the information provided by Praetorius (1619). The new smaller sizes for the viols of the set are tuned to the old pitches, plus the old bass size, tuned a third or fourth lower. Praetorius called the new bass size "Klein Bass Viol de Gamba" and the old bass instrument size "Gross Bass Viol de Gamba", and he wrote that in Italian the latter was called "Violono" or "Contrabasso da gamba".

The new smaller sizes of viols of a set presented an opportunity for tuning to higher pitches when appropriate. Praetorius reported that English viols, when playing in a set all by themselves, played at the low pitches, but otherwise they played at higher pitches. The higher pitches were useful when playing with voices, plucked stringed instruments or the organ. The highest pitch for the first string of the new size bass viol of the set was approximately middle c (c') at modern pitch (about 250 Hz).
When four different sizes of viols were played together, as occasionally happened in England early in the 17th century, there is little doubt that they were the four sizes described by Praetorius as mentioned above. They all could have been tuned either high or low. The largest, equivalent to the violone, was called "Great Double Base". The "Great" of the name presumably meant that it was larger than the bass; and "Double" meant that the pitches went down to those notated with double letters, i.e., notes lower than C below the bass clef. These two words are not necessarily redundant because the ordinary new-size bass, while tuned low, can also play notes with double letters when operating at a high pitch standard, as was the case with Praetorius's German viols.

Banchieri

Banchieri (Bologna, 1609) listed four tunings for viols. The first viol for playing in ensemble with keyboard instruments was the Violone da Gamba with a GG to g tuning. The second and third (for tenor and alto) was the Viola Mezana da Gamba with a D to d' tuning. The fourth was the Viola in Soprano with a G to g' tuning. In addition there was the Violone in Contrabasso with a DD to d tuning.

The names of each note were given by the letter and then the name of the octave: sotto Gravissimo for below FF; Gravissimo for FF to E; Grave for F to e; Acuto for f to e' and Sopracuto for above f', (violin e" was called acutissimo). Tuning of keyboards was apparently from f, and usually when F Acuto (f) was given in a stringed instrument tuning it was followed by 'Corista'.

'Corista' seems to have been a vocal and instrumental pitch standard used throughout Italy in the 17th and 18th centuries for which church organists usually had to transpose down (see Deruta (1622, Libro terzo, p 4)). It appears to have been the standard of Roman organs, about two semitones below modern (see Segerman (FoMRHI Q 30, Comm 442, Jan 1983, pp 27 - 39)).

Consequently, the pitches given are most probably a tone lower than modern standard. This makes the standard lute's highest string in f' (modern) as we would expect. The highest strings of the set of viols were then tuned to f, c', and f' (modern), a tone lower than the tuning of Praetorius's standard set of bass, tenor and treble (a fifth lower than the highest pitches such a set can be tuned to). Alternatively, the tuning could be the highest tuning pitch of the set if it were made up of the violone as the Violone da Gamba, bass viols as the Viole Mezana and the tenor viol as the Viola in Soprano.

The latter alternative (the large set) is supported by Banchieri's use of the name 'Violone' for the bass member of his set and his not using the standard names (basso, tenore, and soprano viola da gamba) for the viols but only specifying the voice parts they assumed. The former (the small set) is argued against by the extremely low pitches for the sizes, making the lowest string of each viol very unlikely to sound acceptable if used. But the large-set interpretation requires a fifth size of viol for the Violone in Contrabasso, larger than any previous standard instrument size. Indeed such extra-large instruments, 20% or more longer in string stop than normal violones (double basses) were being made. Praetorius depicted and discussed them. Two later 17th century examples survive in the Museum at the Brussels Conservatoire.

Praetorius (Syntagma Musicum II, p 46) discussed a set of viols made up of a bass viol for the treble part; two violones for the alto and tenor parts and an extra-large instrument for the bass part. The large-set postulate for Banchieri's set of viols is intermediate between this set and the usual one; and this possibility was also suggested by Praetorius (Syntagma Musicum III, p 164). He also mentioned (Syntagma Musicum III, p 157) that a treble viol playing on its highest strings does not balance well with lower viols playing on their lower strings, suggesting downward transposition eliminating the treble viol. This in effect might have been the motivation behind Banchieri's set specification.
The Violone and Other Bowed Continuo Instruments in 17th Century Italy

Through most of the 17th century, the playing of sets of viols in Italy had little place in professional music making (practically the only kind of music making for which evidence survives). Yet the violone or contrabasso (and sometimes both) were very often specified for supplying the basso continuo to ensembles usually dominated by violins.

The bass line was usually written in the F4 bass clef, still usual today. The attitude towards the use of ledger lines was rather more relaxed than in the previous century, but they were still avoided. More than one ledger line was still rare, and if we consider a range between the space above one ledger line above the bass clef to the space below one ledger line below the bass clef as the natural range for this clef, it is two octaves D to d'. A bass viol with D to d' nominal pitches for the open strings is ideal for playing music as written (at 8 ft pitch) in this clef, and the contrabass viol an octave lower is ideal as a 16 ft instrument playing the music an octave lower than written.

But the most often specified stringed continuo instruments were the theorbo and violone, both of which were tuned a half-octave away from being appropriate to play the music at 8 ft or 16 ft pitch consistently. The purpose of this apparent paradox becomes clear when we realize the implication of Agazzari's (1607) statement that "the violone, as lowest part, proceeds with gravity supporting the harmony of the other parts with soft resonance, dwelling as much as possible on the heavier strings, frequently touching the lowest ones." This indicates that the player had the freedom of choice as to whether to play at pitch (8 ft) or an octave lower (16 ft). Agazzari's stated criterion for choice was how high the written pitches were, putting higher notes an octave down but playing lower notes as written. He was not writing for advanced players who also would have largely exploited the freedom of choice for purposes of musical interpretation.

There is every reason to assume that early in the 17th century there was no ambiguity in what the unqualified term 'violone' meant in Italy. It was a double-bass viol usually with six strings and a string stop of about a meter tuned nominally from GG upwards in fourths (with a third in the middle). It was deliberately ambiguous as to whether it was played at pitch or an octave down. It seems to have usually played at 'corista' pitch standard (a tone below modern) but it could easily tune to any of the organ-pitch standards (from 3 semitones below modern in Naples to one semitone above modern in St Marks, Venice). It was the main bowed continuo instrument.

Though the violone was a very common provider of the bass line in ensembles dominated by violins, there were bass violins as well. The usual Italian bass violin was a smallish instrument by modern 'cello standards. The body was about 70 cm long (7/8 'cello size) but with a short neck so that the string stop was only about 62 cm. It was tuned an octave below the violon or a tone lower, and seems to have usually played the lowest part in the fiddle band that was the continuo. Some examples had 5 strings, so these had a C string, giving all the range needed for playing continuo, but such a string would have had enough projection only for domestic performance. For such circumstances a four-string instrument could be tuned to the four lowest of this instrument. The name that the small bass violin went under was usually Basso da Brazzo or Viola da Brazzo (when the bass clef defined the type).

The French bass violin with a string stop of 70 - 75 cm was much more appropriate for carrying the true bass line. It was made for export by northern Italian instrument makers and used locally, especially it seems, as a more portable bass than the violone in dance bands (but being a smaller instrument, it would lack the projection that seems to have been required in the church and opera). Tuned in fifths with EB as the lowest note, it had the same range as the violone except for missing the lowest three semitones. Since it could perform the same function as the violone it is possible that this bass violin was the instrument called 'Violone da Brazzo', which appears in some

Brazzo' is northern Italian for 'da Braccio'. 
signifying a member of the violin family, ie tuned in fifths.

Diminutives of the term 'violone' need to be considered. The term 'violoncino' appeared from the 1630's to after 1700. (Grandi's use of 'violone piccolo' in 1629 could have been an alternative for the same instrument before the violoncino name was established.) It usually played a dispensable (ad libitum) florid bass part in concertante sections of sonate di chiesa. The appearance of the name coincided with the disappearance of the name 'viola bastarda' which was performing the same function previously (when backed-up by a contrabasso, good violone players often did this too). The violoncino could have been essentially the same as the bastarda with the change of name needed because of a change of tuning (bastarda most probably referred to mixed 4ths and 5ths, ie mixed viol and violin tuning), and perhaps also a change in construction to an Italian bass violin body with a long viol neck (as indicated by English evidence when this small bass viol with string stop of 76 cm was adopted and called 'division viol').

The name 'violoncello' started appearing in the 1660's. Though also meaning 'little violone', it was an instrument different from the violoncino since some compositions called for both. During the final third of the 17th century it gradually took over the role of the violone as the main bowed instrument for basso continuo. It seems likely that this instrument was initially the French bass violin (Violone da Brazzo), given the extra bass projection to more effectively compete with the larger violone by using the newly-developed overspun (wire wound on gut) strings as the one or two lowest. The modern violoncello was developed at the end of the 17th century as a compromise size between the small and large bass violins then in use.

In the final third of the 17th century the bass parts being written tended to become more agile, to go to higher pitches and to provide less opportunity for arbitrary octave transposition. So the archlute tended to replace the theorbo as the favoured plucked continuo instrument and the violoncello tended to replace the violone as the favoured bowed continuo instrument. Violoncello pitch tended to go up a tone, probably because the BB was not used and a tuning from C is easier to learn for players initially trained as violinists. Often composers did not care whether violone or violoncello was used, and the name 'violone' acquired in addition, the meaning of a generic term for bowed continuo instruments. Unless the context implied otherwise, it would be ambiguous as to whether it was to be played by a violone, a violoncello, or even perhaps the newly resurgent bass viol (which with an overspun lowest string or two had the required projection). The bass viol was then called 'Basso di Viola' or just 'Viola'. It is likely that when 'bassetto' was specified, instruments smaller and more agile than the violone such as the bass viol, violoncino or violoncello were the instruments intended.

This period saw another significant change in terminology, also probably associated with a change of usage resulting from musicians exploiting the opportunity that overspun strings offered. In the 1670's names describing the contrabasso as a large violone distinct from the violone (violone contrabasso, violone basso, violone grosso, violone grande, violone doppio) stop appearing. Obviously the ordinary violone could then perform the contrabasso function by tuning lower and using overspun strings. This added to further ambiguity. The specifications 'contrabasso' and 'violone' could either then mean a violone that is tuned lower and playing the contrabasso role or a large violone. The large instruments still appear in 18th century Italian iconography, but fewer may well have been needed. One can speculate that redundant ones could have been bought at modest prices. It may not be just coincidence that the 'Centre Basse de Violon' starts appearing in French musical culture around 1700. It was tuned an octave below the Basse de Violon, at BB, FF, C, G (a true contrabass violin and not a viol). The French have a long history of diligently buying up old Italian instruments, especially lutes and violins.
Bowed Bass Instruments Outside of Italy in the 17th Century

FRANCE In France the sizes of viols decreased from the mid-16th century European norm later than in other countries. Though Mersenne wrote (1636) that bass viols could be larger, the size of the one he depicted, about 4.5 feet long (each foot was 32.3 cm), was not much bigger than the length of the normal new-size bass as given by Praetorius (1619) and Talbot (c. 1694). The original-size bass viol did not retain a place in French music after the size change, as it had elsewhere. The new-size bass viol became even smaller for ease in playing virtuoso music after the introduction of overspun bass strings in the 1670's (attributed to St Columba by Rousseau (1639), see FoMRHI Q 14, Comm 174). The bass of the violin family was the French basse de violon mentioned above. There is iconographical evidence that the Italian small bass violin was used in the second half of the 17th century for the 4th part (not generally notated in bass clef) in the 5-part fiddle band.

ENGLAND In England throughout the 17th century a particularly popular pastime was to sing songs to one's own bass viol accompaniment. The sizes of such instruments were determined by criteria of comfort of vocal tessitura and fingering, leading to a wide size variation. Another common use of these bass viols was to play solo music from tablature. Evidence from late in the century indicates that the Italian small bass violin was used for such vocal accompaniment. Survival of bass viols has strongly favoured those of the right size to be used (with or without renecking) as violoncellos in the 18th and 19th centuries. This has confused historians of the viol who have assumed that surviving viols were the bass viols of sets, even though no sets or recognizably related members of sets have survived.

Another bass viol that played from bass clef was the bass of a set of viols. It was called 'Consort Bass' and 'Single Bass' by Talbot who gave its string stop as 32 inches (81 cm). This is a typical size for the new-size bass viol. Another such bass viol used in the second half of the century was the Division Viol, with a string stop of 30 inches (76 cm) as given by Talbot. The division viol was probably similar to (if not identical to) the Italian violocino.

Evidence for the existence of the Great Double Bass Viol in England in the first half of the 17th century consists of 9 pieces of manuscript music by Orlando Gibbons. These could be accounted for by just one instrument in the possession of the Hatton family. For the rest of the century it was rarely specified, but at least towards the end it seems to have been quite popular. Roger North (c. 1695) wrote "For men the viol, violin and the three-base-instruments organ, harpsicord and double base are proper; for women the espinnett or harpsicord, lute and gittarr; for voices both. I cannot but comend the double base, or standing viol, for plaene bases especially for accompanying voices, because of its softness joyned with such a force as helps the voice very much." Bass accompaniment parts can be played on a double bass viol with GG to g tuning at pitch with rarely the need to finger past the frets, and the octave-downwards option of the double bass can be used to good musical effect. So whenever available, the double bass was probably used even when the accompaniment part specified 'bass viol'.

Talbot (c. 1694) provided measurements of a double bass viol, and the string stop was 40 1/8 inches (102 cm). He gave the tuning of a "Double Bass with 5 Strings" as FF, AA, D, F#, A (a variant reported by Mr Finger had GG instead of FF), and of a "Violone or Double Bass with with 6 Strings" as GG, C, F, A, d, g (the normal violone tuning when it was not a contrabasso). 

Violin ensembles were active in early 17th century England as dance bands. They were alternatives to viol ensembles in some printed music. None of these instruments survives today and probably very few survived the 17th century because designs were varied and apparently not of the Italianate type that soon dominated instruments of this kind. There is no indication to report on tuning and sizes of bass.
members then. Outside the dance band, use of the treble violin grew as the century progressed, but with the bass viol providing the bass. With the Restoration, Charles II introduced the French violin dance band, including the basse de violon tuned in fifths up from BB (as given by Playford). It apparently did not take root outside of the Royal fiddle band since Roger North (1723) reported that at the time when ordinary musicians wanted to play in Lully's French style, they would hire the appropriate bass violin, not owning such an instrument themselves.

GERMANY Praetorius (1619) was attempting to be comprehensive, and he included historical tunings as well as current ones. In his Table of tunings for Viole de Gamba, columns 3, 4 and 5 for the Klein Bass, Tenor/Alt and Cant sizes, are tunings taken from Agricola (1528), as Praetorius mentioned in Chapter 20 of his text. This leaves the normal viol tuning (4ths with a third in the middle) upwards from GG, D and A respectively for these violi, that upwards from DD (as given in Banchieri) for the Gross Bass, plus three other tunings for the Klein Bass, two others for the Violine/Gross Bass/Contrabasso and one for the Gar Gross Bass/Gross Contrabass. The last of these is EE, AA, D, G plus a DD below, while the two others for the Violone are EE, AA, D, G plus c above for five strings and c and f above for 6 strings. It seems that EE, AA, D, G was a tuning sequence North German players then were particularly comfortable playing with. One of the remaining Klein Bass tunings used this sequence without the EE, using B, e, a for the remaining three strings to give a normal viol tuning a tone above the one upwards from GG. The remaining two Klein Bass tunings have E, A, d, g as the highest four strings with either GG, C or FF, BB for the two lowest.

It is therefore no surprise when we read that Daniel Speer (1687) specified EE, AA, D, G as the 4-string double-bass (violone) tuning. Speer also specified the first three-string tuning; GG, C, F, the lowest three strings of the normal violone tuning. If one assiduously followed Agazzari's advice, one wouldn't need the higher three strings.

South German-speaking regions which were largely Catholic had rather different musical traditions than North German largely Protestant regions. The first report of the South German tradition of the five-string double bass tuning is that of alternating fourths and major thirds: FF, AA, D, F, B given by Prinner (1677). Later the fourth from F to B was reduced to a minor third with a top A string.

Measurements from Praetorius's plates indicate that the Gar Gross Bass had a string stop of about 130 cm, his Gross Bass about 102 cm and his Klein Bass about 75 cm. The Klein Bass total length is the same as Talbot's Consort Bass but the string stop measurement is somewhat smaller, making it doubtful whether the lowest string was much used.

Praetorius's Bass-Geig de Braccio had a string stop of about 72 cm. The illustration is of a five-string instrument but the tuning table only gives the four-string tunings C, G, d, a and F, c, g, d'. On that string stop and his pitch standard, the fifth string in all-fifths tuning could be e' in the first tuning or BB in the second. The e' string would be at particularly high stress and would not last long. It would be fine at the Chorthon tone-lower pitch standard that Praetorius preferred. It is possible that the tuning of this five-string instrument was not included in the table because it was made for that pitch standard (and he assured his readers that all pitches in the table were at the normal Cammerthon standard).

Praetorius's table gives a tuning of FF, C, G, d, a for a Gross Quint Bass Geige, a true double-bass violin, but there is no illustration of it. We can deduce from the tuning that the string stop must have been about 90 cm. Some authors, comparing the number of strings in the illustration and table, have assumed that the illustration label was mistaken and the Gross Quint Bass Geige was the one depicted. They were unaware of the limitations imposed on the relationship between string stop and pitch by string properties.
The tuning of the Gross Quint Bass Geige includes the C, G, d, a sequence of the Bass Geige, showing that this tuning sequence was popular in North Germany then. This is the origin of modern 'cello tuning. It does not appear elsewhere until Bismantova's music (Ferrara 1677).

Praetorius's other Bass Geige tuning F, c, g, d' may well have been a South German practice. Hitzler (Tubingen 1628) gave this tuning for the Tenor Geige (FoMRHI O 27 Comm 410, p 38). This instrument could well have been the small Italian bass violin used for a low tenor part. Hitzler's four-string Bass Geige tuning C, F, c, g seems to be derived from the G, c, g, d' tuning by dropping the d' on top and adding a C on bottom. His other Bass Geige tunings are of the viol type. The two six-string ones are normal viol tunings upwards from CC and DD, and the 5-string one C, E, A, d, g is the same as one of Praetorius's six-string Klein Bass Viol tunings without the GG.

**Perspective**

When we explore the origins of the modern double bass we need to consider various aspects of the instrument separately. The size, tuning in fourths and shape variations (sloping and non-sloping shoulders, flat and curved back, viol-like and violin-like corners, c and f holes) are all first found in the 16th century Renaissance bass viol, and continued in the 17th century violone. Playing consistently an octave lower than written (on the bass clef) started with the Italian contrabass violone of the 17th century. The combination of size and contrabass function occurred in early 17th century Germany but it mainly started late in the 17th century in Italy when an overspun lowest string could be used. The tuning in fourths starting from EE was first used in 17th century North Germany and didn't spread elsewhere till at least late in the 18th century.

Various branches of development have not survived to the present. The six-string violone tuning from GG upwards was used through the 17th century in Italy and England and from late in the 17th century till well into the 18th in Germany. The six-string contrabass tuning up from DD was used mostly in Italy throughout the 17th century and well into the 18th century. Evidence for its use in Germany only exists for early in the 17th century. The five-string tuning upwards from FF (with an F second string) was popular in England and South German regions from late in the 17th century onwards till early in the 19th century (eg it was used in Haydn's orchestra at Esterhazy). Three-string tunings started in Germany late in the 17th century as the lowest three strings of the violone, but in the 18th, 19th and early 20th centuries the middle string was D and the first and third strings could each be either a fourth or fifth away from it. If they were both fifths, the strings would be an octave below the top three strings of the 'cello and this tuning was used in Italy, England and Germany in the 18th century and continued into the 19th century in England. An extra-large instrument could have a fourth string tuned to CC. A similar situation existed in 18th century France where the contre basse was tuned an octave below the basse de violon.

In the modern early-music movement, the double bass has been one of the last bastions of resistance to the use of instruments with original types of fitments and original string tunings. This is understandable since musicians are rarely comfortable with playing in more than two tunings, and for many, one is quite enough. Also, acquiring and maintaining several such large instruments in different tunings can be very expensive. Nevertheless, with such a selection of historican tunings, playing early music with a completely modern tuning such as the CC, EE, AA, D, G five-string one must be questioned.
To
FOMRHI
Mr. J. Montagu
"c/o Faculty of Music

St. Aldate's,
Oxford OX1 1DB
England

Dear Sir,

being a "new member of the club" I ordered a number of backissues to read what is written about the viol family in your quarterly. I found it interesting to follow an argument between N. Meeus and E. Segerman, but I did not find an answer to a burning question I have. I was asked to make a "bass viol" for a composer friend of mine, who has relatively small hands and finds it difficult to play a full sized cello. I went out to find a good model for him, and being young and ignorant chose the wrong one. Being in Oxford I went to the Ashmolean, and I'm sure you've already guessed, decided on the "small bass" by John Rose. I made a copy of the instrument (photos included), however the friend of mine ended up in severe financial problems and couldn't afford the instrument. And this is where my research of viols started, rather late I must admit.

However beautiful John Rose's instrument is I find it incredibly difficult to find anyone who wants a Lyra Viol. The response I have been given more often then once was "Oh, how beautiful but the music written for lyra viols is awfully boring, you can only play in one key, there's little scope for modulation and all the rest of it." Now, having read the articles in your magazine it seems that there has been quite an interest in the lyra viol at one stage and that there was or is a lot of music written for it. Austria doesn't have a great number of viol players and I find it difficult therefore to believe that there is no interest in the lyra viol in general. What I would like to know is, if there are viol players in Europe, or maybe societies, who do play or research the lyra viol. I'm quite fond of my instrument and play it myself now, but I would like to know more about it.

What confused me a little however was that according to E. Segerman's table in Comm.716(April 86) a viol with a stop of 60cm was called a tenor up to the 20th century, when it aquired the term "Lyra Viol". Is the small John Rose in the Ashmolean a "Small Bass" a "Tenor" or a "Lyra Viol", or what was it when first made? I am aware that questions like this maybe unanswerable, but you do seem to have some experts amongst your writers. And if it was a tenor, there seems to be another confusing matter, namely the usage of the word "Altgambe" in German for viols with a string length of about 55 to 60 cms.

Having read König's book "The Viola da Gamba" I was convinced that the term "Division Viols" is now used for viols with a string length of 64 to 69 cms. What would you use in Britain to describe such an instrument?

I hope you don't consider the questions silly and that you will find some answers.

Yours Sincerely,

Peter Hütmannsberger
Pepys' Viol

In 1663 Pepys bought a bass viol. Its exact size is not clear from the diaries, unless the fact of the professional viol player Thomas Mallard playing upon it suggests that it was lyra sized.

On April 17th Mr Hunt the instrument-maker brought a 'basse-viall' to his home to see whether he liked it. Pepys records that he did not much and that he was afraid it would interfere with his attention to business. However he soon succumbed to temptation and on June 5th was visited by the 'Carver', to whom he gave instructions about making a 'neat' head. On July 16th he visited the carver in Wapping, and later the same day went to his viol maker in Bishopsgate Street - 'Wise, who is a pretty fellow at it.' On July 24th he visited Wise again and saw the head which pleased him. He was there again on the 26th and on the 31st when the viol was begun and had 'a good appearance', presumably meaning that all the preparatory work had been completed and the actual construction was well under way.

He visited Wise again on the 4th, and on the 7th of August he found the instrument complete and once varnished.

On the 15th he found it 'well-nigh done' and expected to have it the following week. On the 19th he again went to the maker's and found it 'very well'.

The following day the viol was brought to Pepys' home, together with his lute which had been restrung. He complains that he was unable to pay for it because Mr Hunt did not bring it himself, which angered him because he did not like owing money. However on the 21st he paid 10 shillings to the carver and in the evening three pounds to Mr Hunt who assured him that he now had as good a theorbo, viol and violin as were in England.

In 1664, on January 23rd, Mr Mallard came to supper and afterwards played upon the viol - 'the first Maister that ever touched her yet'. Pepys seems to have been pleased with the occasion and writes that he expects the viol 'will be an admirable instrument.'

For this instrument at least, the carver and viol maker were not the same person, and indeed worked some distance apart. They were paid separately and the carver received one seventh of the total price of £3.10s. (For comparison, Pepys' spinet cost £5, his coach £50). It seems a little strange that the carver was paid directly by Pepys, whilst Wise's payment was presumably via Hunt. If this division of crafts was normal practice (perhaps even a left-over from a guild tradition ?), it could well account for the different quality of the heads on the orpharion and the Ashmolean bass viol by John Rose, pointed out by John Pringle in Early Music, October 1978. The exact relationship between Wise and Hunt is not clear. Although George Hunt is listed as a musical instrument maker (in Paul's Churchyard), it is possible that he was a dealer rather than a maker.

Although some instruments seem to have been available 'off the peg' - entry for April 17th - they were also made to order. Altogether the account seems similar to present-day practice, and a long way from the Italian inventories of Maker and other.
lute makers. (Modern makers also have occasional clients who phone or visit as frequently as Pepys!).

The main period of construction was about ten days, presumably not exclusively devoted to Pepys' viol. The twelve days between 'once varnished' and delivery seems a little quick for drying varnish, but we only know that at least two coats were put on, and it was the hottest time of the year. There seems to be some implication that it was delivered a day or two earlier than expected.

The following January Pepys is expecting that the viol will improve further. Thomas Mallard (Maylord), who died in 1665, was a viol player and composer, a musician to Oliver Cromwell and in service to Lord Sandwich on his embassy in Spain.
Recently, the re-arrangement of information about extant Italian citterns into chart form has caused me to revise some previously-held ideas. Due to the small number of citterns known to us these revisions cannot be regarded as proven and I would beg members who know of citterns outside the main instrument collections to pass on this information so that this communication may be reinforced or negated. As with the lute, and even more with the 17th c. guitar, the standard musicians’ instrument may mostly be missing. Of those remaining, most may have survived for non-musical qualities - decoration, sentiment, etc. The period covered by the sample is around 100 years from 1536.

Of the twenty instruments cited, one exists only as a finger-board, having been recovered from the Armada wreck of 'la Trinidad Valencera', apparently an Italian ship hired by Spain (1). Its position (in brackets) on the edge of the first grouping in the charts may suggest that it is in fact Spanish. One cittern - Gasparo da Salo, Hill Coll. 31 - has a new finger board.

Chart 1 shows the distribution of citterns in terms of string length and method of construction. Those marked* are built up, but imitate carved construction. Points worth noticing are:
A. Four apparent size groups (plus ceterone).
B. That all of the larger citterns are carved or imitations thereof.
C. The preponderance of built-up citterns in the short string length group, the exception being the instrument by Canpi in the R.C.M. This may of course be due to the exigencies of time. A carved cittern apparently of a similar string length, but with chromatic fretting, is shown in the painting 'Allegoria della Scienza' by Giovanni Serodine (1594-1631) in the Ambrosiana, Milan.

Chart 2 shows the distribution of chromatic and diatonic fretting patterns. Notice
D. The preponderance of chromatic fretting in the first group - exceptions being the R.C.M. Canpi again, and the late (from fret spacing) 4?-course cittern Hill Coll.32. All built-up, 6-course citterns in this sample have chromatic fretting.

Chart 3 demonstrates the preponderance of 6 courses irrespective of string length.

Chart 4 shows the apparent nominal tuning of the top course of each cittern, as derived by using Comm. 88 (2). However, because the difference between an A or E top course depends only on the position of the 11th fret which is frequently 'averaged', and that of B and E upon the 4th - not present in diatonic fretting first octave - alternatives are possible in most cases. Notice
E. The nominal top course at E, of the fourth group, of larger instruments.

The emergence of four fairly well-defined sizes of cittern instruments of different pitches...
are involved. One problem with the cittern, particularly with the hexachord tuning, is the small compass required for the open string pitches. A hexachord cittern works well with just plain brass wire. A copy of the Campi ceterone currently strung with top course a, using only two twisted wires, sounded very nearly as 'good' when strung a fourth lower. (The iron, brass and twisted brass of the 4 course cittern has only marginal, at most, justification). It is therefore more difficult than with gut strung instruments to assign a definite pitch to a string length. Coupled with the apparent nominal E tuning of the larger instruments and the availability of superior iron wire around 1600, this has previously led to the suggestion that all these citterns were nominally tuned to e'. However if this had been so, we might expect a more random spread of string lengths in the charts. It seems more likely that different pitches are involved, and that if the largest group at around 45 cm s.l. represents the e' tuning, then the two citterns in the third group had top course b, and the four in the fourth group top course a. Remembering that the third course is the lowest in hexachord or 4 course tuning, then the three sizes could be regarded as G, D and C, which of course is similar to the lute.

The apparent nominal 'e' tuning of the frets (comm. 88) is probably better regarded as being the method of tempering frets used on citterns, regardless of size. When music came to be written down or printed for the instrument - Virchi, (Holborne, Robinson) etc. - the notes were fitted to the frets, not vice versa. As far as we know, no tablature exists for the large hexachord cittern; however a fairly undesirable (?) Db which would occur on the first fret is in a position which the tablature of the smaller e' instrument rarely uses and where it would occur as a rather more desirable Ab.

(If it is perhaps unfortunate that these larger citterns have been called "tenor". With the example of Sir Peter Leycester, (3) - "a Gitterne, which indeed is only a Treble Psithyrne, being somewhat lesse than the other" - perhaps the 45 cm size should be regarded as 'tenor', with those larger as 'basses').

The second group of three instruments is interesting because of the similarity of string length - less than 3mm difference despite the different fretting patterns. They could have been at a lower pitch standard, or perhaps used superior iron for the top courses. Generally the sound of all-brass strings seems to suit carved construction, but if the wire was available, then it might have been used for the sake of producing a louder instrument.

That the smaller instruments are mostly constructed whilst all of the larger are carved or imitations thereof seems illogical to a modern instrument maker. To carve one of the larger instruments requires a plank of wood approximately three inches thick and three to four feet long, most of which is going to be removed. It is also going to take considerably longer to produce because wood seasoned for fifteen years will still shrink another 5 or 6mm across the body width after carving out (my own experience), and this must be waited for. The edging strip of the Flebanus in Paris fades away as it leaves the neck, presumably because of an inadequately seasoned body. As these citterns were being produced at the same time and in the same towns as lutes and violins, there must have been something special about
the carved instrument, that, despite the additional difficulty of making it in this way, it should still have been produced, even imitated. At one level this was probably a folk tradition going back past the cetera to a primitive period of rougher usage and glues unreliable in adverse conditions. The Plebanus cittern (1536) has the soundboard/bar joint reinforced by wooden nails like those seen on hurdy-gurdies. At the level of the Camerata it was the instrument of the ancients, now revived; cetra meaning both cittern and lyre. Its symbolic importance is also suggested by the paucity of the smaller constructed cittern in paintings, especially of the allegorical or religious kind - it sometimes appears in still-lifes. Almost always the larger carved cittern is shown, even at Biblical feasts and in the hands of David. (Salviati, Sacristy of the Basilica della Salute, Venice).

The large 6 course carved instrument was the standard (4) on which the smaller carved instruments and the constructed ones of Virchi were variations.

Constructed citterns seem to have been made in both England and France before Italy (5), so that perhaps, for once, Italy was influenced by England. "The cittern was used first, before other nations, in England, in which island they were already made to perfection". (6)

Two possible sources for Virchi's tuning:

| e' | a | e' | d' |
| g' | c | g' | b |
| f' | d | f' | e |
| a | b | d |

standard hexachord tunings

Virchi 4 course Anglo/Italian basses of 'G' lute

The small constructed citterns would seem to originate in Paolo and Girolamo Virchi's experiments. Presumably Girolamo's instrument in Vienna was used for Paolo's music despite the large left-hand stretches. Another instrument, also stamped Hieronymus Brixiensis (Girolamo of Brescia), in Paris, has a string length of 42.5 cm which would be more comfortable. (7) I suggest that all of these instruments used an extended range - probably Virchi's - made possible by twisted basses and alternate string materials, although his left-hand stretches would have been impossible on the largest of them. The smaller (and quieter) instrument required for the music seems to imply, initially at least, a different environment from the standard cittern. Perhaps, as with Holborne's cittern in England, it was that of the courtly amateur.

Unhappily this leaves the problem of what most Italian cittern-players played. Like the construction of the instrument, it was probably traditional, and, as with the saz or the folk guitar, largely un-notated. A 1774 clue is in a music of Yrol where the cittern instructions place cittern chorus against the numerals, etc, used for the 'alfabeto' of the guitar.

The revival of the cittern over the past few years has been mostly concerned with reconstructing the small 4 course English
instrument. For the music of Italy several instruments survive as models, but this time the task of reconstruction is for the musicians, not the makers.

Notes.

1 Drawing kindly supplied, Colin Martin, St. Andrew's Institute of Maritime Archaeology.


6 Vincenzo Galilei, Dialogo della musica antica e della moderna, 1581.

7 At least one more instrument by Hieronimus existed before the 1939-45 war, in Berlin. Information from James Tyler.
Characteristics of a sample of Italian citlerns compared with their string lengths

<table>
<thead>
<tr>
<th>Built / carved. * in imitation of carved style.</th>
<th>B</th>
<th>C</th>
<th>B</th>
<th>B</th>
<th>B</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>C</th>
<th>B*</th>
<th>B*</th>
</tr>
</thead>
<tbody>
<tr>
<td>chromatic / * semi-diatonic / diatonic. * see below</td>
<td>c</td>
<td>C</td>
<td>SD</td>
<td>C</td>
<td>D</td>
<td>C</td>
<td>D</td>
<td>c</td>
<td>D</td>
<td>c</td>
<td>SD</td>
<td>SD</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>string length</td>
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<td>40</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Number of courses</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<td>6</td>
</tr>
<tr>
<td>Nominal top course, where alternatives possible, favoured given first.</td>
<td>ea</td>
<td>ea</td>
<td>eb</td>
<td>ea (a)</td>
<td>eb</td>
<td>be</td>
<td>be</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>e</td>
<td>ae</td>
</tr>
</tbody>
</table>

* semi-diatonic = more frets than standard diatonic fretting (as R. C. M. Canfi), but not completely chromatic.
On the subject of measuring tools. I expect you do have restrictions, but unfortunately, you don't spell them out in your letter. Can I infer from FoMRHI Comm. 733 that machinist's small hole and telescoping gages, used in a "set dimension and see how far in it will go" mode are acceptable? I have been using these gages for ten years. Eight years ago I designed and built the device sketched below to measure the descending bore of a bassoon boot joint without removing the bottom plug. Briefly described, it has measuring "buttons" that extend when the micrometer dial is turned. The dimension between the measuring surfaces is obtained by adding 0.5 inch to the micrometer reading. With the buttons fully retracted it can be inserted into the descending bore from the top and lowered till it contacts the cork at the bottom. A dimension is dialed in on the micrometer and the tool is then lifted until the buttons contact the bore walls. A scale taped to the tool then gives the insertion depth. Properly used it is as safe as the ordinary measuring tools, which I can demonstrate with the device I described in my recent submission to the FoMRHI Quarterly.