COMMUNICATIONS

977 New Grove DoMI: E.S. no. 16: 5 entries
978 Review: Larigot no 7, March 1990
979 Review: Catalogo degli Strumenti dell’Istituto della Pieta Venezia, by M. Tiella & L. Primon
980 Review: Aulos ‘Haka’ descant and treble recorders
981 Reviews of musical instruments
982 Further to Comm 981
983 Style decoration and tone
984 Identifying woodworm
985 Old wood
986 The archetypal harpsichord
987 On three well-proportioned alto recorders

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.
This looks like being a short Bulletin, and unless Eph has some material his end, a thin issue.
Partly the usual summer inertia (not that you’d imagine it to be summer from the weather we’re having), I suspect, and partly because the April Q went out so late. This one is a week late my end, but last Sunday we married off a daughter, and the Sunday before we married off a son, so I’ve been a bit preoccupied.

The appearance of the Bull will change a bit again with this Q. I have changed to an IBM-compatible computer (though with the same printer). One result is that I may decide to put my own Comms into columns, which is now very easy. I’m less likely to do that to the Bull because it creates difficulties with cutting and pasting other people’s comments. The other is that I’ve been doing my nut converting all my old material, including all the Bate Collection publications. The University Computing Service have been translating all my old Amstrad 3” discs on to WordPerfect-readable 3.25” discs, but although most of it’s readable everything is unbelievably full of garbage; all the old LocoScript codes are there and have to be removed (many of them, but by no means all, by Search and Replace, but it’s still time-consuming), and odd bits of text which have vanished have to be typed in again. That’s been taking all my time for the last couple of months; hence poor response to some correspondence, for which I apologise. Hence, yet again, the absence of an NGDOMI review from me. It’s not been forgotten, though.

FURTHER TO:
Re: Ardal Powell’s Comm.974 on ivory.

If I expected a snippet of a personal letter to Jeremy Montagu to be printed in FoMRHI be assured I would have had second thoughts about writing. I merely said in my letter that the ivory I have in stock is still usable and that press coverage is biased. I object to being vilified in print on the strength of off-the-cuff remarks in a personal letter to a colleague. Next time I write to Jeremy I will head my letter with a large label: DO NOT PRINT IN FOMRHI. If Mr. Powell believes that what came to be printed is in any way an expression of my full and complete thoughts on the subject, he does me a great injustice which is excused only by his ignorance of the circumstances.

Bob Barclay

JM adds: I owe Bob an abject apology. It has happened before, and it may happen again, but it would help if, when any of you are remarking in a letter on anything that has appeared in the Q, you would note whether your remarks are or are not publishable. My correspondence tends to be inextricably intertwined between personal, FoMRHI, and Bate matters, and some letters are inevitably a combination of any two or even all three, just as this Bulletin often is, also.

LIST OF MEMBERS: Almost as soon as I’d sent it off to Eph, I realised that I’d been a nit. Only a few days after I’d finished it, all the London area telephone codes changed from 01- to two different codes, 071- for those in central London, and 081- for all those round the peri-
phery (and for some fairly central, but less fashionable, areas south of the river such as Clap-
hammer). You will find all the necessary corrections in the Supplement herewith before the other
changes of new members, late renewals, and changes of address. It’s just be a name followed
by 071- or 081-, which is all that you need; the rest of the phone number stays the same. What
it amounts to is that 01- has been split in half to allow for all the fax numbers which people are
setting up, especially in the office areas of the City etc. Please correct your main Lists accor-
dingly, with my apologies for the necessary labour.

OTHER SOCIETIES: The American Musical Instrument Society (AMIS) asks me to tell you that
it will hold its 20th annual meeting at Moravian College, Bethlehem, Pennsylvania from March
7th to 10th, 1991. Offers of papers by October 1st to Ralph Dudgeon, Music Department, State
University College at Cortland, Box 2000, Cortland, NY 13045. Further information from
Margaret Banks or André Larson at the Shrine to Music, Vermillion (as in our List of Members).

A recent new society is the Historic Brass Society. They have so far issued two Newsletters and
one Journal, and their publications are absolutely first rate. The Journal includes seven major
articles, all of the first importance to brass players. The first one is by Don Smithers, 'A new
look at the evolution of lip-blown instruments from Classical Antiquity until the end of the Mid-
dle Ages'; a lot in it to argue about, as so often with Don, but also a great deal to absorb and
study. The second, by Henry Fischer, whose excellent book on Renaissance sackbuts has been
reviewed here, on the newly discovered Anton Schnitzer tenor sackbut in Nice. The third, by
Bob Barclay, is on 'Ethics in the conservation and preservation of brass instruments', an ex-
tremely important article for everyone in the conservation (and restoration) world, and for all
brass instrument owners who are thinking of having work done on their instruments. The fourth,
by Keith Polk, on 'Augustein Schubinger and the zinck'. The fifth on 'Early Horn mouthpieces'
by Richard Seraphinoff includes illustrated directions on how to make a sheet-metal mouthpiece,
as most of the early horn mouthpieces were; the tone quality of a sheet-metal mouthpiece is
quite different from one turned from a brass block. The sixth by John McCann on the decora-
tion of Venetian cornets. And the last is a translation by Jesse Rosenberg of Dalla Casa's Il
Vero Modo di Diminuir, one of the most important texts on this subject. This new Journal (and
their Newsletters) are the most important new departure in our field since FoMRHI's own crea-
tion; there have been a number of other societies and journals appearing since we started in
1975, but nothing of this standard. This really is a must for everyone interested in brass instru-
ments of any sort. Their address is 148 West 23rd Street, No.2A New York, NY 10011. Sub-
scription is $15.00 in USA and Canada, $20.00 overseas, $10 for students and senior citizens
living in the USA (? maybe in Canada, too). They don't say what back issues cost (ie the Jour-
nal noted here), but subscriptions in 1989 were $10.00 and $15.00 overseas, so you might get
it for that.

REQUESTS FOR HELP: A new member, Kimber Rhoads (address in the Supplement herewith)
says that he is a neophyte recorder maker and would like to know or receive:
1) where to purchase shell augers, which he can't find anywhere in US;
2) where to obtain drawings and measurements of mediaeval and renaissance recorders;
3) published or unpublished articles by any maker or researcher on recorders and their
construction etc;
4) assistance concerning tools, methods, pitfalls, sources of info, etc

A previous member who has rejoined, D.B.D. Mann (address also in the Supplement herewith) has asked for advice on the restoration of a Broadwood piano c.1815. Michael Cole has already offered to help him at long range, but if anyone else is within reach of Shoeburyness in Essex, he'd probably welcome a visit and chat. He is anxious to do the job properly and to acceptable standards.

TOOLS AVAILABLE: A gentleman called Rod Naylor of Turnpike House, 208 Devizes Road, Hilperton, Trowbridge, Wilts BA14 7QP 0225-754497 has sent me a flyer for a gadget called a Dupli-Carver. This works on wood and other materials rather like the machines that duplicate keys; a feeler travels over the model, and a router travels over the work. He says that people are using them for musical instruments (violin scrolls, etc, I suspect). It doesn’t look as though it would work on bores, but it would certainly work on exteriors, especially those with blocks left proud to take keys. No way would I let you use one of our instruments with such a machine, but it should work as a means of making further copies once you’ve made the first one. It really depends on whether you think of making instruments as a hand job done with loving care, or whether you're happy using all the machinery and gadgets available.

COURSES: The next Bate Weekend will be October 20/21, and it will be on Renaissance Recorders and Flutes, with Lewis Jones and Alan Davis. Cost is the usual £20 (£15 students and Friends of the Bate Collection). Starting at 10.30 (for coffee; 11.00 for work) on the Saturday and 10.00 on the Sunday, finishing 6.00ish. I’m not going to say which bits will be recorders and which flutes, for part of the interest will be on what is more suitable for which and to what extent were they interchangeable in that period. I imagine that we’ll be working mainly at A-460 and A-440, since the former is the pitch of the recorders we have, and the latter of the flute. If anyone can bring sets of instruments at those, or other pitches, it would help us, especially high pitch recorders, for we haven’t a good tenor and I think Lewis only has one.

MUSEUM NEWS: I was going to say that by the time you read this, I shall have produced the 1990 Supplement to the Bate Collection Checklist. However, as this looks like being a short Q, and as we've printed such lists from other museums, I might just as well get down to it now, and include it herewith. Sometime later in the year, I’ll produce a new edition of the complete Check List, but not till we've run out of the present one, which may not be before the autumn. If by chance it isn't elsewhere in this Q, then any of you who have the 1989 Check List (which costs £2.00) are welcome to write for a copy. Within the UK, 50p in stamps would be welcome, and from abroad the equivalent if you have a bank note worth about that ($1.00 approximately) to cover photocopying and postage. If you haven’t such a bank note (we don’t nowadays), we can probably afford to stand you a freebie; it’s not worth the hassle of foreign-currency cheques for so small an amount. If you have the 1988 Check List, copies of the Supplement to that are still available, but there is a slight gap between that and the 1989 List.

The Friends of the Bate Collection held its first AGM here last month, and set up a Committee, Officers, and so forth, and approved a Constitution. We are now waiting to hear whether the Constitution has been approved by the Charity Commissioners so that we can recover extra
money on members’ subscriptions from the tax that they paid. New Friends are joining all the
time, and we’re over 60 members now. Any of you who have been earning money by making
instruments from our plans might like to consider joining. The basic rate is £12 (couples £20);
Supporters £50; Donors £100 or more; Sponsors £250 or more; Concessions (students and pens­
ioners etc) £5.

PLANS OF INSTRUMENTS: We have been trying to produce plans for later instruments, now
that people are playing authentically well into the 19th century. The latest plans we have in the
Bate are:
Kirst 7-key flute (including Quantz Eb/D#) £10
Winnen 7-key oboe £10
Grenser 9-key Bb clarinet £10.

Fuller details available on the latest list. You’ll note that, despite the fact that multi-keyed inst­
ruments take longer to draw, I’ve noted comments that have been made here and have kept the
price down. There are more in the pipe-line.

CONCLUSION: I think that’s about it. I’ll hold it open till I’ve done the Members List Supple­
ment and a couple of reviews and the Check List Supplement referred to above. I’ve done them,
and quite a few new odds and ends have come in and have been inserted above.

DEADLINE FOR NEXT Q: Monday, 1st October, please. It’s the first day of term here, so
that may lead to a bit of delay, but it seems unfair to set the deadline a week early.

If you’re somewhere the sun shines, I hope you enjoy it; we may be lucky yet.

Jeremy Montagu
Hon.Sec.FoMRHI
For many years I have been reluctantly following a policy of refraining from using my privilege of seeing Comms before they are published to respond to them in the same issue. I had done this previously and was roundly criticised for it by at least one author whose Comm I argued against, and he was supported by Jeremy. Their view was that the power of the author's arguments was compromised by my counter-arguments appearing simultaneously. My view has been that manipulating people’s beliefs by controlling the timing of information given to them might be appropriate in politics, but I would want our Q to cater for a readership that we expect wants to compare, as objectively as possible, the power of the arguments on each side of a dispute, and timing is only relevant by favouring the quickest way for the arguments to be presented. No-one wrote in supporting my position, so I conceded to Jeremy and adopted the policy. As a result, I've neglected to write short reply Comms because the heat of the argument and the pressure to get it written no more coincided (I make no claims as to whether this has been good or bad).

Ardal Powell's Comm in this Q slamming reviews of instruments so incensed Jeremy that he sent an extremely strong reply, knowingly violating the above policy. My first response was to withhold Jeremy's Comm, applying the policy he supported. But I'm too grown up now to be so spiteful, and welcome relaxation of that policy, at least until the membership indicates that they want it back. Please send your views on this either to Jeremy or me.

Now, as Jeremy has suggested, I'll put my own aar into the controversy. Powell hasn't convinced me that reviewing musical instruments presents any basically different problems than reviewing concerts, books, motor cars or cameras. He presents many valid issues that could limit the usefulness of any review to the reader. The reviewer never deserves the respect of being the supreme judge that comforts the mindless meek and enrages the immature rebel and often enrages the creators of the works, for which only a rave review shows appropriate appreciation for the effort and skill that went into it. The reviewer usually does as well as he can, though he can easily mislead because of ignorance, inadvertence, or even malice. A good review gives enough objective information about the work for the reader to decide for himself how interested he is in investigating it further, and it states enough about the criteria used for judgement for the reader to evaluate whether he would react similarly. There is rarely enough of this information and criteria (that can get very boring for many), but enough readers prefer having reviews that are inadequate in many ways to not having them at all for a demand for reviews to exist. As long as reviews only happen with the consent and cooperation of the producers of the works, I see no moral problems. I also don't see any threat to our reviews policy if a sizable fraction of the membership agrees with Powell. As long as a considerable fraction of the readership wants reviews, we can have them.

On another matter, I am disappointed in Bob Barklay's sensitivity to Powell's criticism, as shown in his note on the first page of the Bulletin in this Q. I am sure that many readers beside myself consider his position very sensible, and were glad to hear of it. The rhetoric of political activists can safely be ignored when one knows one is acting honourably.
<table>
<thead>
<tr>
<th>Cat.no.</th>
<th>Maker &amp; Instrument</th>
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<tr>
<td>0264</td>
<td>anon, Peru, pottery ocarina (modern) [Edward Olleson]</td>
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<td>0265</td>
<td>Casa Viñet, tabor pipe [Dorothy Calland].</td>
</tr>
<tr>
<td>0267</td>
<td>The Best British, tin whistle converted to tabor pipe [Dorothy Calland].</td>
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<tr>
<td>0266</td>
<td>In Tune D, tin whistle [Dorothy Calland].</td>
</tr>
<tr>
<td>0276</td>
<td>anon, sopranino bamboo pipe (painted black) [Dorothy Calland].</td>
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<td>0277</td>
<td>anon, sopranino bamboo pipe (painted red) [Dorothy Calland].</td>
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<td>0274</td>
<td>anon, descant bamboo pipe (painted red) [Dorothy Calland].</td>
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<tr>
<td>0275</td>
<td>anon, descant bamboo pipe (painted ) [Dorothy Calland].</td>
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<tr>
<td>0270</td>
<td>anon, treble bamboo pipe [Dorothy Calland].</td>
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<tr>
<td>0271</td>
<td>anon, treble bamboo pipe (painted brown) [Dorothy Calland].</td>
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<td>anon, treble bamboo pipe (multi-coloured) [Dorothy Calland].</td>
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<td>0273</td>
<td>anon, treble bamboo pipe (painted black) [Dorothy Calland].</td>
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<td>anon, tenor bamboo pipe [Dorothy Calland].</td>
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<td>anon, tenor bamboo pipe (painted green) [Dorothy Calland].</td>
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<td>anon (? Japan), descant recorder (black &amp; white plastic) [Hunt].</td>
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<td>anon, descant recorder (stripy wood) [Hunt].</td>
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<td>anon, descant recorder (aluminium) [Hunt].</td>
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<td>Bärenreiter, descant recorder (plastic, German fingering) [Hunt].</td>
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<td>0231</td>
<td>Barnes &amp; Mullins, treble recorder [Hunt].</td>
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<td>0263</td>
<td>John Cousen, sopranino recorder (renaissance) [John Cousen].</td>
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<td>0233</td>
<td>Dolmetsch, tenor recorder, plastic [Hunt].</td>
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<td>0254</td>
<td>Ferrera, sopranino recorder [Hunt].</td>
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<td>0232</td>
<td>Herwiga, descant recorder 'Hamlin' [Hunt].</td>
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<td>0240</td>
<td>Herwiga, tenor recorder 'Rex' [Hunt].</td>
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<td>Herwiga, tenor recorder 'Solist' [Hunt].</td>
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<td>0247</td>
<td>Küng, descant recorder (plastic) [Hunt].</td>
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<td>Nikkan, descant recorder 'Superio pipe' [Hunt].</td>
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<td>0234</td>
<td>Nikkan, treble recorder 'Alto pipe superio' [Hunt].</td>
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<td>0228</td>
<td>Alec Loretto, tenor recorder to match Bressan [purch].</td>
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<tr>
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<td>Schott, descant recorder (plastic) [Hunt].</td>
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<tr>
<td>0246</td>
<td>Schott, descant recorder (plastic) [Hunt].</td>
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<tr>
<td>0242</td>
<td>Schott, descant recorder (plastic, with kite mark) [Hunt].</td>
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<td>0243</td>
<td>Schott, descant recorder (plastic, with kite mark) [Hunt].</td>
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<td>0244</td>
<td>Schott, descant recorder (one-piece body/foot) [Hunt].</td>
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<tr>
<td>0236</td>
<td>Schott, descant recorder 'Concert' [Hunt].</td>
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<td>Schott, descant recorder 'Concert' [Hunt].</td>
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<td>Schott, descant recorder 'Concert' (German fingering) [Hunt].</td>
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<td>Schott, descant recorder 'Concert' (double holes) [Hunt].</td>
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<td>Schott, descant recorder 'Concert' (single holes) [Hunt].</td>
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<td>0255</td>
<td>60 Schott, desnsant recorder head joints [Hunt].</td>
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<td>0245</td>
<td>Schott, treble recorder with key 'Concert' [Hunt].</td>
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<td>Schott, treble recorder foot joint only [Hunt].</td>
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<td>Schott, tenor recorder 'Concert' [Hunt].</td>
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<td>0261</td>
<td>Schott, tenor recorder head &amp; foot only [Hunt].</td>
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<tr>
<td>0239</td>
<td>Superio, descant recorder [Hunt].</td>
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<tr>
<td>Cat.no.</td>
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<td><strong>TRANSVERSE FLUTES</strong></td>
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<tr>
<td>1113</td>
<td>VKS [Kohlert], 6-key piccolo [Bate].</td>
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<tr>
<td>1112</td>
<td>I.H.Powell, 1-key F flute, boxwood [Dorothy Calland].</td>
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<td>1114</td>
<td>A.Z.Lecompte, 6-key blackwood flute [Bate].</td>
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<td>1111</td>
<td>Butler, 8-key flute, wide holes with ring–finger levers [purch].</td>
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<td>1110</td>
<td>Rudall Carte, Boehm system to low B♭, no.818 (GSJ 41 p.102) [Hunt].</td>
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<td>1115</td>
<td>Wallis, 8-key cocus flute, stripped [Bate].</td>
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<tr>
<td><strong>OBOES</strong></td>
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<tr>
<td>2041</td>
<td>anon, boxwood système 3 [Bate].</td>
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<tr>
<td>x2040</td>
<td>H.Richters, boxwood, 3-key [un-named until we can purchase].</td>
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<td><strong>CLARINETS</strong></td>
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<tr>
<td>4090</td>
<td>anon, bamboo pipe converted into a clarinet [Dorothy Calland].</td>
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<td>4055</td>
<td>Dobner &amp; Felklin, 6-key C clarinet, stripped [Bate].</td>
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<td>4054</td>
<td>Parker, C clarinet, 6-key boxwood [Dorothy Calland].</td>
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<tr>
<td>4056</td>
<td>Key, 13[?]–key B♭ clarinet, stripped [Bate].</td>
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<tr>
<td><strong>BRASS INSTRUMENTS</strong></td>
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<tr>
<td>637</td>
<td>Bax à Paris, horn bell joint, painted in Chinese taste [Bate].</td>
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<td>638</td>
<td>Boosey &amp; Co, horn bell joint [Bate].</td>
</tr>
<tr>
<td>639</td>
<td>Lidl, horn bell joint [Bate].</td>
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<tr>
<td>706</td>
<td>anon, natural trumpet, twice round, in E♭ (brass) [Bate].</td>
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<td>707</td>
<td>anon, natural trumpet, twice round, in E♭ (copper) [Bate].</td>
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<tr>
<td>705</td>
<td>Phillip Bate, key trumpet (part made) [Bate].</td>
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<td>704</td>
<td>David Edwards, key trumpet [David Edwards].</td>
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<tr>
<td>742</td>
<td>Hawkes [on the bell] tenor trombone, made-up [Bate].</td>
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<tr>
<td>681</td>
<td>Higham, cornet [Bate].</td>
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<tr>
<td>682</td>
<td>Keat, cornet [Bate].</td>
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<tr>
<td>680</td>
<td>Keat, duty bugle [Bate].</td>
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<tr>
<td>679</td>
<td>Mayers &amp; Harrison, duty bugle [Bate].</td>
</tr>
<tr>
<td>x657</td>
<td>anon, baritone saxhorn in B♭ [JPSM].</td>
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<tr>
<td>x676</td>
<td>Mahillon, 4-valve baritone in B♭ [JPSM].</td>
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<tr>
<td>x677</td>
<td>Rivière &amp; Hawkes, baritone in B♭ [JPSM].</td>
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<tr>
<td>x678</td>
<td>Rivière &amp; Hawkes, euphonium in B♭ [JPSM].</td>
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<tr>
<td>509</td>
<td>B.Coldwell, serpent, closely folded [purch].</td>
</tr>
<tr>
<td><strong>PERCUSSION ETC</strong></td>
<td></td>
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<tr>
<td>x840</td>
<td>anon, India, jews harp [JPSM].</td>
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<tr>
<td>x841</td>
<td>anon, Java, jews harp [JPSM].</td>
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<tr>
<td>x842</td>
<td>anon, Thailand, jews harp [JPSM].</td>
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<tr>
<td>819</td>
<td>anon, pair 'baroque' timpani sticks [JPSM].</td>
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### STRING INSTRUMENTS, ETC.

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<tr>
<td>x973</td>
<td>anon, Greece, small bouzouki [JPSM].</td>
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<tr>
<td>x972</td>
<td>anon, Turkey, saz [ACB].</td>
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<tr>
<td>971</td>
<td>Cardoso Pereira, Portuguese guitarra.</td>
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<tr>
<td>940</td>
<td>Roderic von Bennigsen, graphite fibre violin bow [David Stone Associates].</td>
</tr>
<tr>
<td>941</td>
<td>Roderic von Bennigsen, graphite fibre 'cello bow [David Stone Associates].</td>
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### KEYBOARDS

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<tr>
<th>Cat.no.</th>
<th>Maker &amp; Instrument</th>
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<tr>
<td>969</td>
<td>Arnold Dolmetsch, clavichord no.1, 1894 [Dr. George Gordon].</td>
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<tr>
<td>x970</td>
<td>anon, portable harmonium [JPSM].</td>
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</table>

6th July 1990.
Soundholes by D. D. Boyden
Boyden appreciates that the soundhole acts as the opening of a Helmholtz resonator, the frequency of which depends on the opening area and the volume of enclosed air; but he misunderstands other details. The frequency of the air resonance also depends on the flexibility of the belly, back and sides (the compliance of which acts as if there was additional hole area) and not on the thickness of the edges, as stated. He does not mention the length of the soundhole edges, the impedance of which affects the height and width of the resonance curve, so that long thin soundholes and perforated lute roses give less support for the most resonant notes, but some support for more notes, when compared to open round holes with the same hole area. As for the positioning of soundholes, the reason for their not being very close to the edge of the soundboard is more aesthetic than acoustic. Their contribution to isochroncity (equalising the time for a vibration to traverse the width and length of the violin's soundboard, and so reducing absorption of vibrating energy) is missed. Also missed is the association between soundholes and cross-bars bracketing them in plucked instruments and some early bowed ones.

Soundpost by D. D. Boyden
History is not mentioned; the first description was by Mersenne in 1635, and the first appearance of the term was 40 years earlier in Shakespeare's Romeo and Juliet. Soundpost ends early in the lives of old violins seem to have been rounded, while current ones are cut flush with the belly and back across the whole end. I very much doubt whether there is evidence to support the traditional view (repeated here) that the most important function of the soundpost is 'to relieve the heavy downwards pressure of the strings and bridge on the belly'. The currently popular designs of violins (Cremona) and viols (John Rose) were originally developed with archings intended to withstand that pressure without a soundpost. Immobilisation of one of the bridge feet is rightly mentioned as one function of the soundpost, but what is missed is that it enhances the loudness of the strings on the other end of the bridge; i.e., immobilising the treble foot by a soundpost enhances bass response and immobilising the bass foot by a Lass bar enhances treble response. (These observations are based on simple experiments that require confidence that tuning up without a soundpost is safe).

Stop by P. Williams
The use of the term for the distance from the bridge to the upper end of the belly by the violin world is omitted. String stop, which is the distance from bridge to nut, is also omitted.

Stradivari, Antonio by C. Beare
The effect of the varnish on the sound is grossly exaggerated and the much greater effect of the ground is not mentioned.

String by P. Williams
Only with metal strings does high inharmonicity sound bell-like; gut strings just sound dead. I doubt whether the drop in pitch as a harpsichord string sounds is the result of the loss of inharmonic overtones — this should then be worse on a piano, and it isn't — I suggest that it is loss of tension as the string is stretched less by reduced vibration amplitude. When discussing the interaction of the string with the soundboard, the characteristics of the bridge inbetween are omitted. Though the drawplate was available in Europe by the 10th century, drawn iron wire (as opposed to wrought iron wire) was not available until late in the 14th century, when water power was harnessed for the drawing. Recent work indicating that iron wire used for harpsichords was strengthened by phosphorus with carbon absent is not included. Piccinini (1623) did not mention silver strings for his chitarrone, but did for his pandora. Playford was selling
overspun strings on gut and silk long before Sainte-Colombe mentioned them. Much more about modern strings for guitars and violins could have been mentioned.

**Sympathetic Strings** by D. D. Boyden

Their apparent invention around 1600 in England is not mentioned. Tuning in unison with the bowed strings is mentioned, but for a quarter of a millennium after 1620, no metal string could tune as high as gut, so either this tuning wasn’t accurately followed or the sympathetic string tuned with the highest non-sympathetic string was gut as well. That unison tuning has been far from universal, and tuning in a diatonic scale probably has been at least as common. Not mentioned is the sympathetic effect of strings on the instrument that could be played on but are not at the time, as was exploited extensively by the lyra viol.

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**FoMRHI Comm. 978**

**Review of:** *Larigot no.7,* March, 1990.

Another good issue, mainly on brass. The first article, by Michel Smiga, is on how to make your own double reeds. It is doubtless useful on the technique of making the reeds, but as there is no information at all on the dimensions of historical reeds, it’s not going to be a lot of use unless you already have Paul White’s article, from AM1SI, on bassoon reeds, or Geoffrey Burgess’s, from our Q, on oboe reeds, to neither of which is there any reference here. Without these essential articles, you may wind up knowing how to make a reed, but without any clue on what sort of reed you should be making.

This is followed by extracts from the Couesnon catalogue of 1912 for cornets, with the price list (!), and with the fascinating pages of illustrations of all the bits that go into making the cornets, all the bows, stays, plates to which the stays are soldered, and so forth.

This is followed by a further article by Bruno Kampmann on valve systems, covering, with good illustrations, both photographic and drawn, a variety of compensating systems.

There is a brief description of an exhibition in Lille, by J.J. Revillion.

This is followed by an interview with a craftsman maker and repairer of brass instruments, Monsieur Mazerau, by Patrick Delile.

The final article, by Guy Laurent, is on French silver marks on instruments (*poinçons* in French, *hall-marks* in English).

As always, there is page of small advertisements, instruments for sale and wanted.

Articles are always short, often useful, and, when the original material is line drawings or engravings, well illustrated. Photographs come out a bit too dark to be really useful, as one would expect with a photocopied journal.

Their address is 93 rue de la Chapelle, Apt. 166F, 75018 Paris. Subscription is 130 French francs, plus 50F for airmail abroad, and back issues are 40F each or 100F for each year-set of three. They cover all wind instruments, but with a slight bias towards brass.

This sumptuous catalogue, describing and illustrating all the surviving instruments from the Pietà, was prepared for an exhibition connected with the 250th anniversary of the death of the Ospedale della Pietà's most famous music master and composer, Antonio Vivaldi. It is an example of what such a catalogue should be, and it puts to shame the catalogue produced for the Galpin Society's 40th Anniversary a few years ago. Marco Tiella has told me that it had to be prepared in a hurry, and if he could do so superb a job on this, with so much technical detail, there is no reason why other temporary exhibition catalogues should not be equally detailed.

This collection is, or certainly seems likely to be, the largest collection in the world of baroque and early classical string instruments, most of them still in original condition, with untouched necks and untampered-with interiors. I do not know when the Ospedale della Pietà ceased to function as a music academy, but it would appear that the instruments have not been used since the late 18th century, and they clearly ceased to be used before the ravages of the Vuillaume school and others did their best to destroy much of our musical heritage in the interests of the modern orchestra. The only instruments which have been modernised are the two Goffriller cellos, which were "restored" (ie modernised) in 1966. What we have here is the prime evidence of how our early string instruments were when they were made.

For each of the instruments, all known catalogue numbers and previous descriptions are given (they have been catalogued at different times by different people, each producing their own system and description), followed by a photograph of each one as they were in the Museo Correr in the early years of this century.

Then follow good colour photographs, front back and side, with a line drawing showing the precise angle of the fingerboard in relation to the belly, and a black-and-white photograph of the instrument as it was restored for the exhibition (the restoration consisted mainly of fitting four strings and a bridge so that a violin looks more like a violin for the general public), plus detail photographs of one of the f-holes, the neck/body joint, and the profile of the scroll. Full measurements are given, along with a detailed description.

Where there is a label (some are, as always, anonymous), there is a photo of the label taken through the f-hole, both by normal and by ultraviolet light. The labelled instruments are Benedetto Auesan, Verona, 1704; Francesco Ruggieri, 1690; Petrus Guarnerius, 1751; Mathias Hornsteiner, 1795; Andrea Guarneri, 1654; Jacob Pez, 1787; Jacobus Stainer, 1674; Mattio Goffriller, 1706 (cello); Pietro Caspan, 1665 (bass). Most of the labels seem to be thought to be false, the exceptions being the Auesan, the Pez, the Goffriller, and the Caspan.

The string instruments are followed by the four Andrea Coin horns of 1770. These are curious instruments with a fixed mouthpiece and no tuning slide, but with crooks which will fit into the mouthpiece, something that I'd never seen before seeing these instruments. It means that the crooks are cylindrical in bore, wide enough at the beginning to accept a mouthpiece, with a sharp contraction to get down to a size which will fit into the mouthpiece socket at the top of the mouthpiece. There is also a similar horn, but without crooks, by Anton Kerner of 1765.

These are followed by photographs of a vanished viola and square piano.

Then comes the meat of the catalogue, the really detailed study which we have come to expect from Marco Tiella. First there is a dendrochronological study of each instrument. Then a photogrammetric study of the anonymous viola and moiré-topographic photos of five of the violins (one of them front and
back) and the viola. There are end-views of several of the instruments, showing the tail-button and the end of the tailpiece, and drawings, front and profile, of most of the tailpieces. There are detailed measurements of all the fingerboards, and endoscopic photographs of the neck-block of four of the violins, showing the nail heads which secure the neck to the block. There are X-radiographs of three of the neck-blocks and drawings of all of them, showing how each neck is joined to the body. There are detailed drawings of the neck/body joint and a great many more very precise measurements. Each bass-bar is drawn, and measurements are given of each. There are ultraviolet light photographs of four of the violins and holograph photographs of six of them. There are resonance graphs of the body cavities for all of them; none were in a condition which would allow them to be strung up and played. Finally there is an English and a German translation of the introductory material, of the schema of the catalogue, and of the project for conserving these instruments properly, for many are in a parlous condition due not only to their age but to the appetites of insects. One of the sections above consists of a gas-chromatographic analysis of the insecticidal powders found inside the instruments!

I am not at all clear how one can get hold of copies of this catalogue; the name that I've given as a publisher does not seem wholly promising as a source. Some of the obvious sources may be worth trying, and if all else fails, Marco Tiella is one of our members, though as he lives in Rovereto, quite some way from Venice, he may not find any easier than the rest of us to get hold of copies in any quantity. Nevertheless, if you are working on early violins, I'd say that this catalogue was a must, especially if your Italian is better than mine. This is unrivalled source material, for this is not just how violins might have been before the 19th century restorers got at them, but as they were. Maybe not as they were in Vivaldi's time (there is no way of telling whether they were already in the Ospedale in his time; the earliest records seem to be mid-19th century).

Finally, there are still more instruments from this source, which were not included in this exhibition. There are a few more violins, which were too valuable and/or too fragile to include. There is a considerable number of wind instruments, most of which I have already described in these pages (Comms 658 and 673), which were transferred to the Conservatory Benedetto Marcello and which are still there. At least let us record our gratitude that these instruments were released from their storage area on the top floor of one of the buildings around the Piazza San Marco and have not only been put on show but have been examined in such detail and so well published. Let us now hope that they will be properly conserved so that they may survive as source material for those instrument makers of the future who are trying to recreate the sound of music as it was known to Vivaldi and his contemporaries.
Aulos 'Haka' descant and treble recorders

The plastic recorder has been with us for a long time, and has undergone many changes and improvements since the days of the heavy Bakelite instruments produced by Schott, Dolmetsch and others, which are now almost collectors' items in their own right. The range of instruments now available varies from the luridly coloured toys sold in some chain-stores to well designed recorders of a very high quality, the best of which are often superior in every way to some wooden instruments costing very much more. While for a serious player there is no substitute for a fine wooden recorder, a good plastic one can be a very useful practice instrument, and for beginners and schools it is essential.

During the 1970s the range of Aulos plastic recorders achieved extraordinary world-wide success: a success not altogether deserved as the extremely popular and ubiquitous descant model was made at a pitch significantly higher than A440Hz, while later models were inclined to be on the flat side. An unfortunate schoolteacher might be confronted with a pitch discrepancy of nearly a semitone between two Aulos descants. The introduction of the Yamaha 300 Series - elegantly proportioned, in tune, tonally balanced and available from soprano to bass - seemed to represent a 'ne plus ultra' in plastic recorders and a timely challenge to Aulos. If the Aulos 'Haka' models are intended as a response to this challenge, it is a response which succeeds admirably, for to judge by the two examples provided for review, these are certainly the best plastic recorders I have played.

Appropriating the name of an illustrious maker from the past can, of course, imply anything from a carefully reconstructed copy of an instrument, as authentic as possible in every detail, to a mere marketing device, resulting in such absurdities as a 'Stradivarius' trumpet. No information is given as to which recorder(s) by Haka provided the model for the new Aulos productions, which certainly cannot be considered authentic copies. That apart, they seem to embody some of the expressive qualities which are associated with original baroque recorders. The treble responds well to even bread pressure within each register, producing firm tone, not loud but well focussed, and standard English fingering produces excellent intonation in terms of the equal tempered scale. The low semitones produced by the double holes, a weak point on many an expensive recorder, are particularly good, and the high C sharp is also better than average. There is a good response to rapid articulation, but any tendency to harshness in the action of the tongue produces a fairly strong 'chiff' which can be attractive in the right place, but might be a source of irritation to some players. The descant has similar qualities apart from the 'chiff', and is if anything a little more expressive and flexible, and a real pleasure to play. A particularly welcome feature of both recorders is that they are much less prone to clogging than is usual with plastic instruments. The beak and rings are made from shiny white plastic while the main body of the instrument is finished in a dark matt brown to simulate wood. Some might consider this vulgar, but I find it rather appealing, and there is less tendency than usual for the recorder to become sticky under the fingers.

As conventional modern recorders these instruments have much to recommend them. It is disappointing, however, that no one has yet produced a plastic recorder more closely modelled on a baroque original. An inexpensive plastic baroque recorder at A415, preferably with the option of single holes and original fingering, would be a very worthwhile instrument. To judge from their superb flute after Stanesby, Aulos would doubtless be capable of producing such a recorder.

Alan Davis
REVIEWS OF MUSICAL INSTRUMENTS

I was disturbed to read the reviews of musical instruments, Comms. 966 and 967. At first I thought my unease was bred by what I read in the reviews; yet on the face of it much of what they said seemed sensible and factually accurate. I could see at once that it was absurd for one reviewer to expound upon an instrument that he was unable to play, and not right for another to report on alterations which he had made to an instrument—not his property—without consulting the maker. But it soon dawned on me that my dismay had a more serious origin than these incidental details could account for.

It seemed to me on reflection that even the most thoroughly researched and erudite review of a musical instrument, by a figure of unimpeachable reliability and eminence, would have to face certain ethical and practical questions, rather different from those which confront a reviewer of books, or opera performances, or dessert recipes. I tried to put myself in the instrument-reviewer's shoes, to see if I could think of an answer to any of them.

- If a "copy" of an instrument of the past represents its maker's best efforts at interpreting the original or originals, what tools can be used for measuring the maker's degree of success? How might a factor like workmanship, or one like design, be judged by someone who might not recognize and have extensive practical acquaintance of all the techniques that have, or could have, or ought to have, been applied, both in the original and in the copy? And what about the functionality of an instrument, which can only really be judged with respect to the way it performs a very specific job, the definition of which will vary from one individual musician to the next? What data can describe for the reader the reviewer's concept of the "original": the measurements available to the maker? Readings from a tuning machine (set to what tuning-system?), oscilloscope, monochord, and/or other devices? The opinion of one or more professional players and/or instrument-makers of the characteristics of that original, or of others more or less like it? Side-by-side comparison of original and copy using only the reviewer's senses? And what if the design is a composite of more than one original? Is it enough to compare a copy labelled with the name of an old maker with any single original instrument by that maker, even one in mint condition?

- What kind of personality, what professional field, what skills
and experience might qualify an individual to take the unusual step of making general judgments in print on the quality of a musical instrument? Given (at least for the traverso) the wide variety in types of instrument and in playing technique (not to mention experience and knowledge of original instruments) even among advanced players, and the degree to which personal taste and temporary mood are additional factors, what value might those judgements—even coming from an "authoritative" source—have for others whose approach and conclusions might be very different?

For whose particular benefit would an instrument review be intended? Might it relieve those with a casual interest of the chore of trying the instrument for themselves? Or help those really in the market to make up their minds? Or ought it just provide the maker with free publicity? Might an ingenuous reviewer fulfil this function unwittingly? Just from a functional aspect, how would an instrument review compare with, for example, a book review, or a review of a performance, and how would the reviewers' rights and responsibilities compare?

How might the price of the instrument factor into the assessment? Should an expensive instrument be held to higher standards than a cheap one? Ought instruments to be compared only with others like them in price, or are price and quality ideally and/or practically unrelated issues? May cheap copies only be made after undistinguished originals, or can expensive copies of them be allowable too? Are defective copies of good originals necessarily made that way because of the lack of discernment of the maker, or could it be, willy-nilly, to keep them within a given price range? Is the price of an instrument generally related to its quality as cause, or as effect?

Makers such as Friedrich von Huene, Masahiro Arita, Guido Klemisch, Claire Soubeyran, Henri Gohin and others have been employed under contracts to design instruments for mass-production, and Mr. Toyama employs 12 musicians in his research and development section (while another 200 work in production and marketing). Is offering Mr. Toyama information for which he is accustomed to paying (actually neither review provided any) in the interests of these makers and the value placed on their expertise? In the interests of the membership of FoMRHI? In the interests of Mr. Toyama? Do all or any of these overlap, and if so, would that make it all right to take action that might harm a minority of or within them?

Is there any danger of a reviewer unintentionally giving offence to the maker of an instrument under review (by, for instance, making a mistaken statement of fact, or an erroneous or inappropriate judgement)? If a maker felt he or she had been wronged
in a review in the Q., who would be responsible for the publication's content, and where would the injured party apply for redress? To the reviewer? To Jeremy? To the Fellows of FoMRHI?

- Will all members of FoMRHI now be expected (allowed? encouraged?) to provide free examples of their work to Jeremy for peer review? Or will those who are members be excluded in favour of those, like Mr. Toyama, who are not? Will harpsichord makers in Australia be required to ship an instrument (or three) to Oxford for the privilege, publicity and exposure a review will bestow, and to get free advice on how to improve their work?

- Is it really the purpose of FoMRHI, or the intention of its Hon. Sec., to encourage its members to pass judgement on the work of fellow instrument-makers? Would any individual member of FoMRHI have written a Comm. on another maker's work spontaneously, without prompting from Jeremy? Jeremy's dealings with Mr. Toyama have been made unilaterally, but apparently on behalf of FoMRHI: what plans are there to dispose of the donated instruments after all the reviews are written? Will they be kept for Jeremy's personal use? Will the Music Faculty in the University of Oxford take advantage of them? Will they be returned (with whatever modifications the reviewers have seen fit to make) to their makers?

I find it very difficult to untangle this web of arduous moral and practical difficulties and look at them one at a time, much less figure out solutions—but they surely must at least have been considered in the mind of anyone bold enough to propose the introduction of instrument reviews for an audience which contains as many learned and distinguished makers as FoMRHI.

But in view of the fact that many of the problems which are raised even by the bare concept of a musical instrument review are to my mind by their very nature insoluble, I fear the appearance of the reviews in Q.59 can only be viewed as hasty and imprudent.
FoMRHI HEALTH WARNING – THIS COMM BREAKS ALL OUR RULES – IF YOU DON'T LIKE IT, DON'T READ IT:

Further to a Comm from Ardal Powell in this Q — Are Reviews Justified?

A Comm has arrived this morning from Ardal Powell which has annoyed me so much that I am breaking our agreed rules and practices, and I am commenting on it here and now instead of waiting for three months. But do read his Comm first, please, and then turn to this Comm.

In the course of his Comm, Ardal impugns my honesty, probity, etc, but that I propose to ignore and to treat with the contempt that I believe it deserves; if you disagree, anyone is free to ask for my resignation.

He asks also what has happened to the instruments. The answer is the normal one for review material; they are the reviewers’ perks for taking the trouble to review them. One traverso was left in hand, and that has been given to the Bate Collection (it is already out on loan to a student). This is, I think, the first time that the Bate has received anything from FoMRHI in return for the considerable amount of time, paid for by the University, which is spent on FoMRHI matters, not to speak of typewriter/printer ribbons, etc, etc.

History first:

I saw Aulos’s advertisement for the ‘Stanesby’ (and other flutes) in Early Music, and thought that this would be of interest to many of us, so I wrote to them to ask if they would like to send a ‘Stanesby’ for review; I did not mention the ‘Grensers’ to them because they were not at a ‘baroque’ pitch. They did so, with a very friendly response, and they included the ‘Haka’ recorders.

This is precisely what I quite often do when I see a book advertised which I think would be of interest to some or many of us. Sometimes books come unrequested; sometimes I ask for them; sometimes a member suggests that I should ask for them. This is what every journal does. Sometimes records come, too. I don’t often ask for records, but if members wish me to do so, there’s no reason why we should not do so, and, if anyone feels that we should review recordings, let me know, and I’ll start asking.

I have never suggested before that we should review instruments — No, I’m wrong. I think that it has been suggested before, a long time ago, but I don’t think very seriously, and I don’t think anything was done about it. If you remember, there were occasional articles in Early Music along the lines of a Which? report (for the benefit of foreigners, Which? is a magazine which surveys the field for anything from washing machines to cars and reports on Best Buys and why some products should be avoided, etc). I did a brass one and also a percussion one, if I remember rightly. Anyway, we’ve not done it in FoMRHIQ, partly for the reasons that Ardal mentions (who wants to ship a harpsichord from Australia for us to review it, and who could afford to give one away?).

This case was different; flutes are relatively cheap to ship, and mass-produced plastic instruments are usually cheap enough that the firm could afford to give us one. It was different, too, because it is a new departure, a mass-produced instrument, probably at an affordable price (rumour has it, around £250, but I’ve not been able to confirm this), just what we all, I thought, wanted to get our potential customers started. What many of us have said that we wanted for strings, anyway, so why not for wind?

So much for historical background and my reasons for doing what I did.

Now for what has really annoyed me in Ardal’s Comm:

He attacks, implicitly and without actually saying so, the whole principle of peer review. It has been the custom, for several thousand years, that when you publish a book, stage a
play, etc, etc, you invite the comments of your peers. In Plato's time, this was not formalised. It just happened. More recently, probably due to the invention of the law of libel, the custom arose that you invited the critics to read, attend, whatever. Papers, journals, etc, might request books, tickets, etc. If the book or tickets were sent, this constituted an invitation to review in law.

If, as author, publisher, playwright, etc, you were worried about the reception of your work, you didn’t send out such invitations, and you weren’t reviewed. Most of us, I write now as an author and a professional musician, were content to be judged by our peers, reckoning that the publicity gained would probably be worth the risk, and anyway being content to stand by our work.

We have all suffered unfair reviews (or so we thought). Some of us, certainly including myself, have a reputation as savage reviewers of work that we do not think up to standard, and certainly we thus lay ourselves open to revenge reviews. I have had at least one such of one of my books (comparing the review in question with others of the same book, and knowing that the reviewer had indeed something to avenge). Nevertheless, this is all part of the game. And also somewhat irrelevant to the matter at issue.

What Ardal is saying, or rather implying, is either that all reviews should cease, or else that instrument makers are in a privileged position; that authors, composers, musicians, you name it, may, must, or should, stand to be judged by their peers, reckoning that the publicity gained would probably be worth the risk, and anyway being content to stand by our work.

So much for general remark — now to one particular remark in his Comm:

At the foot of his first page, he asks "What kind of personality, what professional field, what skills and experience might qualify an individual to take the unusual step of making general judgements in print on the quality of a musical instrument?" I have seldom read so intemperate a response, even by an author, etc, who has been unmercifully savaged in a review. The answer, Ardal, is anybody who has looked at an instrument (which covers my remarks on it), an experienced maker and teacher of makers (which covers Lewis’s), an expert player (which covers both Alan Davis’s remarks herewith on the recorders, and Lewis’s on the traverso). And at that he’s a damn sight luckier than some concert promoters who may find the daily paper’s sports correspondent reviewing their concert.

Now to a request for comment from you:

Do you agree with Ardal? If so, please say so. If a majority of you do agree with Ardal, there will be no more reviews in FoMRHIQ. Not just no more reviews of instruments, but no more reviews of anything. Perhaps even the end of FoMRHI. For this is a matter of over-riding policy. There cannot be in any open society, still less one like ours which was founded precisely for discussion and comment, apartheid between subjects. Either everything that we do, write, play, or make is open for comment and discussion, or it isn’t.

I hope that Eph will also comment in this area, whether or not he wishes to discuss Ardal’s Comm, at least on the policy on whether we review or not, and indeed on whether we comment on each other’s work or not, and above all on whether we continue or not. We have all been free to comment on each other’s Comms. If on Comms, why not on instruments? And if not on instruments, why on Comms?

So the question really comes down to this:

Should FoMRHI continue or not?
1990 FoMRHI List of Members — 1st Supplement as at 9th July 1990

LONDON AREA TELEPHONE NUMBERS

Robin Almond, 081-  
Anthony Baines, 081-  
Philip Bate, 071-  
Peter Bavington, 071-  
Peter Berg, 071-  
Tony Bingham, 071-  
Maria Boxall, 081-  
Geoffrey Bridges, 081-  
Bridgewood & Neitzert, 071-  
David Chatterton, 081-  
Martin Clayton, 081-  
Andrew Crawford, 081-  
Mathew Dart, 071-  
John Edwards, 081-  
Stephen Fogg, 081-  
Alan Higgitt, 071-  
Harvey Hope, 081-  
Lewis Jones, 081-  
John Leach, 071-  
Barry Lloyd, 071-  
London Coll.Furn., 071-  
Francesca McManus, 081-  
David Miles, 081-  
Jonathan Morgan, 081-  
John Morley, 081-  
Michael Morrow, 071-  
Howard Nelson, 081-  
Christopher Nobbs, 071-  
Joseph O’Kelly, 071-  
Guy Oldham, 081-  
Mark Ransom, 071-  
John Rawson, 071-  
Huw Saunders, 081-  
Harry Shorto, 071-  
Robert Spencer, 081-  
Melanie Spriggs, 081-  
Raymond Taylor, 081-  
D.R. Thomas, 081-  
Francis Tomes, 081-  
Mimi Waitzman, 081-  
William Waterhouse, 081-  
Elizabeth Wells, 071-  
Graham Wells, 071-  
Lorraine Wood, 081-  
Vernon Wood, 081-  

OTHER CHANGES

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

Christopher Allworth, 36 Milsom Avenue, Halifax, Nova Scotia, Canada B3N 2B9 (med/ren str instrs; M,P).
Boris Axelrod, POBox 627, Tiberias 14106, Israel (vln, M; soundpaint, res).
Ralph Bryant, Haus Rüti, Hädeliistr.3, CH-8712 Stäfa, Switzerland (tpt, crnm; P).
* Philip Kwok-wing Chiu, 3/15 Morrow Ave, Bucklands Beach, Auckland, New Zealand.
David Z.Crookes, 94 Lansdowne Road, Belfast, BT15 4AB, UK; 0232-772074 (rebec, gemshrm, M; all instrs, W).
* Michael J.Daniels, 9 Mile End Road, Norwich NR4 7QY, UK; 0603-52236.
Jim Downie, Gourdas, Fyvie, Turriff, Aberdeen AB5 8RY, UK; 0651-6503 (str instrs; M,R,P,T).
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Warwick Edwards, 22 Falkland Street, Glasgow G12 9PR, UK; 041-334 9229.
Rob Gilliam-Turner, % McGuffey Art Center, 201 Second St NW, Charlottesville, VA 22901, USA; (804) 295-4268 (recrdr, trav, M,P).
Haags Gemeentemuseum, Stadhouderslaan 41, NL-2517 UV [Postbus 72, NL-2501 CB] 's-Gravenhage, Netherlands; 070/514181.
F John Hanchet, Beckumsfeld 4, D-4300 Essen 15, West Germany; 0201/463901 (early ww, esp shawms, crnhms, recrdr, fag; M,P).
Jonathan M.Harding, 47A Queens Road, High Wycombe, Bucks HP13 6AQ, UK (lute, vih; M).
Otto Harrassowitz, Taunusstraße 5, POBox 2929, D-6200 Wiesbaden, West Germany (books; D).
Martyn Hodgson, 39 Becketts Park Crescent, Headingly, Leeds LS6 3PH, UK; Leeds 751137 (ren/bar pickled instrs; M,R,P).
* Hubert Keller, Kurt-Schumacher-Str.212, D-4220 Bad Sooden-Allendorf, (West) Germany.
Jitze Kopinga, Churchillway 41, NL 6707 JB Wageningen, Netherlands (fidl, lute, bagpp, dulemr; M,P).
* Simon Lambert, 43 Pyrland Road, London N5 2JA, UK; 071-354 9019.
Brian Lemin, 5 Rialto Ct, Traralgon, Vic 3844, Australia (recrdr, lute, gmba, psaltry; M).
Lawrence Lundy, 505 Elmside Blvd, Madison, WI 53704, USA; (608) 244-0477 (perc, P; lute, M,F).

D.B.D. Mann, 67 Ulster Avenue, Shoeburyness, Essex SS3 9HL, UK (ww; M).

Kimber Rhoads, Rt 3 Box 51, Cedar Creek, MO 65627 (recrdr; M).

RILM Abstracts, City University of New York, 33 West 42nd Street, New York, NY 10036, USA; (212) 642-2709.

John Rutzen, Sunshine Cottage, Kirkton Road, Rattray, Blairgowrie, Perthshire PH10 7DZ, UK; 0250-3831 (trav, harp, pipes; M).

John Storr, Brookside, Runston, Chichester, W.Sussex PO20 6NR, UK; Chichester 789605 (hpschd etc, spnet, clavchd; M).


* Marsha Taylor, 27520 W.Ingram Isl.Rd, Monroe, OR 97456, USA.

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Museum: Bad Säckingen: Trompeter (Edward Tarr)

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The quality of a performance is usually judged by its power to move a listener emotionally. In pre-classical music, vocal music was felt to be the most moving, with the power of both words and music cooperating for greater effect than each alone. Concerning the words, at least as powerful as their meaning and poetry, was the style of their delivery.

The vocal style favoured in the Renaissance and early baroque was an imitation of the declamatory rhetorical manner of an orator in public speaking. With its considerably exaggerated gestures, enunciation, verbal phrasing and dynamics, that style was seen as the most effective socially-acceptable way of publicly expressing emotion and inducing emotional response. Part of this style was the illustration of appropriate individual words by an imitation of the non-verbal expression of strong emotion that was normally too embarrassing to show in public or to observe for any length of time.

This rhetorical style faced growing competition during the the baroque from a different style which overcame the embarrassment of extended intimacy by imitation of the show of emotion using a stylized display of vocal dexterity. This style was a component of Italian opera and grew in importance within that medium as well as growing in general popularity as that medium grew. In this style the words were of secondary importance and clarity in their delivery (which was characteristic of the rhetorical style, and required strong consonants) was abandoned.

At all times, instrumental style of performance imitated whatever vocal style was in vogue.

Throughout most of the history of our culture, quality in all arts and crafts was enhanced by appropriate decoration. Primary functions of decoration were to fill space in balanced and interesting ways (e.g., concerning musical gracing, Robinson wrote 'note that the longer the time is of a single stroke, that the more neede it hath of a relish... but in a quicke time a little touch or jerke will serve') and to provide emphasis or focus (e.g., Robinson similarly wrote 'a strong relish for loudnesse or a milde relish for passionate attencion'). When such decoration was applied according to the taste of the time, it usually enhanced the emotional impact. If omitted, at best this reflected a cold stark puritanical concept of enforced simplicity, and at worst this reflected a poverty of means, skills or taste. If the decoration showed superior imagination or skill, this induced particular admiration for the craftsman or artist.

Melismatic musical decoration (i.e., more than one note for a syllable) was then added to music to give emphasis and emotional effect to words, to enrich and add movement to the structure of the music, and to display the imagination and skill of the performer. In performing these functions, it can't help but compete with the verbal clarity required for rhetorical power of the words.

This competition is minimal with gracing, where all of the melisma is slurred on vowels, with no additional articulation that competes with the consonants, which occurs with division. The sequence of notes in graces were quite stereotyped and thus easy to reproduce, so Renaissance writers rarely felt that it was necessary to describe them, except perhaps for the newest least-familiar ones.

When the Camerata signalled the beginning of the Italian baroque by rejecting decorative musical practices that interfered with the power of the words, they retained gracing as a necessary device for providing emphasis. They also retained cadential division because what was happening with the music and the words was already quite clear by the time the cadence occurred. What they rejected was the non-cadential division that had become very pervasive in late 16th century Italy as a vehicle for vocal display. This
division obscured the words (as well as the music) without effectively expressing strong emotion. By rejecting extensive flamboyant division, the Italian baroque started off (from the point of view of decoration) as a return to normal Renaissance practices. But as that period continued, a new flamboyant style developed. It incorporated elements of gracing and division in its imitation of the slurred and articulated noises of the expression of strong emotion, and it became the famous Italian baroque style. This contrasted with the French style, which still was basically the old rhetorical Renaissance style.

A big rich tone was an essential contributor to the emotional impact of the Italian style (e.g. the voice of a castrato), and this criterion is the main aspect of that style that survives today. Weak-toned voices and instruments were much more acceptable when the rhetorical style was in vogue. Rhetorical articulation was much more important. Just being audible for some of the music was often good enough (see Comm 773 046 p33 paragraph 2). Decoration helped when there was an audibility problem (Robinson wrote 'a relish will help, both to grace it, and also it helps to continue the sound of a note his full time'). Instruments used only in domestic environments often had design features that inhibited projection of tone. The vihuela soundboard is an example, with inset tiles and a high rose leaving most of its length unbarred. Another is the viola d'amore soundboard, which usually had the sympathetic strings attached to a pin-bridge glued on to it. The preference for old Italian soundboards on French baroque lutes (albeit rebarred) also exhibits a lack of concern for maximum resonance. It is quite likely that many voices and instruments whose projection is considered inadequate today would have been considered quite satisfactory for rhetorical performance.

**FoMRHI Comm. 984**

**Identifying woodworm**

Further to Jeremy Montagu's plea and Michaela Freemanova's response can I just draw peoples attention to the information provided by the Building Research Station on the identification of beetles.

They publish "Building Research Station Digest, No 307 - Identifying damage by wood-boring insects" 9pp A4 size, available from BRE at Publications Sales Office, Princes Risborough Laboratory, Princes Risborough, Buckinghamshire HP 17 9PX, (price not stated, but I think fairly modest).

It covers the different kinds of boring beetles, how to identify them, and what damage they do. It describes their lifestyles, and has photos of their holes etc. It does not say what sort of insecticides to use for eradication.
OLD WOOD

Every once in a while a harpsichord maker finds some old wood. A barn built in the eighteenth century is torn down, and if you can get the old rotten nails out of the spruce posts, you can make soundboards from eighteenth-century wood. Old harpsichords sound wonderful (?), so harpsichords made from old wood ought to sound wonderful. The mystique is powerful! "The soundboard wood should be at least 150 years old to have the proper resonance," to quote from a recent advertisement.

Well, now. That sure puts all of us out of the running unless we can lay our hands on such. I've listened to instruments made from such old wood newly made into soundboards, and evidently my ears are deficient, because I can't find the mysterious wonderfulness in them that their makers claim for them.

I do find that wood has to be out of the tree for a while before you use it for soundboards. Kiln-drying isn't enough. And, of course, kiln-drying wood down to the dryness recommended in the handbooks can very well destroy tonewood—the wood must be brought down slowly, and I don't like it dryer than 12 to 15 percent out of the kiln. We have a problem of distances here in the States, and truckers don't like to carry a lot of water—they get paid by the board foot.

The problem is that freshly cut wood, no matter how dry it is, comes and goes with changes in humidity, and it takes at least three or four years out of the tree for tone wood to settle down, and eight or ten years is still better. There is, in this aging process, an absolute loss of dimension. Wood that is eight or ten years out of the tree will still expand and contract with humidity change, but much less so than when it was younger, and after twenty years or so I believe it almost stops responding to ordinary short-term changes. (Our climate in the States here is probably the worst in the world for swelling or splitting soundboards.)

So 'old' wood, yes. Much easier to predict how the soundboard will react with humidity changes, fewer split soundboards, fewer soundboards climbing into the 4' strings.

In eighteenth-century France, the builders worshipped old wood. They patched together scraps from old Flemish instruments, and called the patchwork a 'Ruckers'. But the old wood they worshipped was old soundboard wood—wood that had been singing for a century or so. I don't find any record of their tearing down fifteenth-century barns and worshipping that.

Yes, there are stories of old organ-makers taking old pews in partial payment for a new organ. For organ pipes it is terribly important that the wood be aged well enough to have stopped its coming and going. Modern organ makers have their wood yards full of wood drying in the snow and sun and rain for five or six or a dozen years. The slabs are then taken indoors and roughed out to thickness, and allowed to cure further and to bring the water content down. Dom Bedos talks about curing wood under water, six months under water being worth several years in the drying yard.
But a harpsichord soundboard made from 'old' wood, or new wood, or
wood that has been properly aged to bring it to dimensional stability,
sounds like a new harpsichord (an ugly sound). It sounds much better
after it has been played for several months, and still better after a
year. There is a subtle improvement in the quality of the sound through­
out the life of the instrument (which can be centuries), although (I
believe) there is eventually a loss of vitality and drive in the sound
that ought not necessarily to be admired. A truly beautiful woman is
beautiful at any age, but not more beautiful at 60 than she was at 30.

Old piano soundboards are readily available, and this is certainly wood
that has been singing. But old piano soundboards that have 'lost their
bearings' are tired—I haven't been able to get a decent sound out of
such wood. The modern piano seems to overstress its soundboard, and there
is an eventual loss in the quality of the sound.

I'm happy to be working with Sitka and Swiss pine that is ten or twelve
years out of the tree. I would hate to be working (as I once did) with
wood that was only a year or two out of the tree. But some of those
soundboards that I made from wood too young for dimensional stability
make a remarkably good sound now (if they have survived the splits and
swelling intact).

I have some recorders that weren't much to hear when I bought them (years
ago when recorders didn't sound as well as they do now). They sound much
better now, and I must ask Alec Loretto if this is possibly because the
bore has become less cylindrical than it was.

I don't have any 'scientific' explanation for the fact that a soundboard
must be taught to sing, for the fact that it sounds so much better after
it has been played for several months. The difference in sound can't be
picked up by the crude instruments that acoustical scientists use, and I
have read 'scientific' treatises that deny that the phenomenon exists.

I remember my disappointment when I finally had to admit that wood a
century or more old didn't sound any better in an instrument than wood
much younger, and that the old wood needed to be taught to sing just like
the young wood. If old wood were the 'secret of it all', just think how
easy it would be to become a 'great' instrument maker! Buy up old wood,
and you'd have it made.

Alas, like all the other 'secrets of it all', this one also fails. We
are back to the proposition that making an instrument is a subtle balance
between a host of factors, some of them almost below the level of con­
sciousness. The maker who brings enough of the elements of his craft to
the critical balance, who 'gets enough things right', will succeed. Get­
ting only a few things right makes everything wrong.

There is, of course, another aspect to the 'old wood' question--the in­
creasing difficulty in finding wood from old forests, where the tree
was forced to thrust upward into the light, and side branches (which
make knots) are killed off early enough. And growth is slow enough to
make a fairly even pattern of late wood rings. There is truth to the
old adage: "Unless the tree had a hard time growing, it is hard to teach
it to sing." The eastern spruce forests are all gone from the U.S., and
the last tone wood mill making white spruce soundboards is closed down.
Virgin forest Sitka from Washington and Oregon is pithy compared with
the Alaskan spruce the Japanese ship to Japan by the boatload. Good
'Swiss pine' is hard to find, but I have had half a dozen cubic meters
of beautiful spruce from Roumania.

Good tone wood can be found, but you have to be able to recognize it.
By eye you can see thequartering and the grain pattern. With a hammer
you can ring the plank. The piano industry uses a lot of spruce flitched
at the mill, and some of this is excellent for harpsichords. But because
of the way a piano soundboard is constructed, they can make an acceptable
piano from wood that would not work very well for a harpsichord, or at
least for a French Double (the ribbing on some Italians and seventeenth-
century French instruments makes the quality of the tone wood much less
critical).

But, of course, what you do with good wood is as important as the wood
itself. Much more important than counting annular rings to the inch is
the ring of the flitch, and laying up flitches by eye is not always a
sure guide. Putting horny flitches next to soft ones will make the
sound confused and lacking in focus, and a 'hard' soundboard will re­
qure different thinning from a soft one.

Some years ago I showed an instrument to a famous harpsichord builder
whom I admired. "Well, of course, you were very lucky to get a soundboard
like that. Easy to make outstanding instruments if you are lucky with
your soundboards." I was astonished; I hadn't known that 'luck' had
anything to do with that soundboard.

I remembered crawling around in the muck of a timber yard on a cold
November day chalking planks to be pulled out of the piles, then ringing
them with the hammer, flitching the planks and laying the flitches up
for three years. I remembered that I had laid up the soundboard, and then
found I had misjudged a flitch in the treble. And after the instrument
was playing I went back in and cleaned up the 'crack' along the 4'
hitchpin rail and along the bentside in the tenor. I guess my 'luck'
was in not knowing that I was supposed to be lucky--something my master
hadn't told me.
THE ARCHETYPAL HARPSICHORD

In the history of harpsichords the Ruckers' family figures prominently. Desired by many at the time, their instruments possessed a structure that was both simple and rational, and the sound was thought to be quite superlative. Because of this, harpsichord construction after this strongly exhibits the influence of the Ruckers design, and it appears that the pre-Ruckers tradition was driven into a corner.

However, there are still instruments which have features or details derived from the pre-Ruckers tradition here and there, and even into the 18th century it is noteworthy that there are instruments that show little Ruckers influence. I suggest that the term Archetypal Harpsichord be used for those traditional instruments that developed from the archetype.

Until now these important instruments have often been regarded as only a "Median-type" of the Old Italian and New Flemish Styles. I would like to put them in their proper place, and offer a reevaluation.

I, The Flemish Harpsichord — What Ruckers Bequeathed

In the history of harpsichords the name Ruckers looms remarkably large. The instruments they crafted, coming to the fore with the rise of the bourgeoisie, are often depicted in the portraiture of the period. Made of poplar, their construction was of a simple and rational fashion. Their elegant decoration also lent itself well to their beautiful tone color. Hans Ruckers, founder of the clan, joined the St.Luke guild in 1579 and for generations the Ruckers family made a huge number of harpsichords and virginals.

Harpsichords made by the Ruckers clan are known as Flemish from the place in which they were made. In the middle of 17th century the Ruckers original underwent a Ravalement, or a reconstruction, which led to the Flemish French Style. This further led to the peak of the development of the French Style in Versailles. Beyond this, the circle of Ruckers' influence spread even further. Almost all 18th century harpsichords show the influence of Ruckers or Flemish French Style.

How can we classify the Ruckers' Flemish style? Using the several characteristics below I will note the contrasts between Flemish and other styles.

a. Material — Use of Poplar

The poplar that Ruckers used in the construction of their instruments is very versatile. In the low Countries it is often found as a material for household goods. Poplar, which shares many traits of the lime that was used by Taskin, is easy to work but looks rough and is not very beautiful. Therefore it is not as suited for the thin case construction or natural wood finish. Walnut, oak, and especially Italian cypress are finer and more beautiful materials. This difference in material leads to difference of structure, decoration and so on.

b. Structure — Simple and Easy Construction

The structure of Ruckers' instruments is very reasonable. First the side panels and wrestplank are put together to form a frame and the liners and the braces are set within it. After the soundboard is placed, the final step is to attach the bottom from below. In this method the time for assembly is short but thin structure is not possible.

This contrasts sharply with the Italian method. First the bellyrail, the
liners by the knees, and the wrestplank on the blocks are attached to the finished bottom, then reinforced by the buttresses and the corner blocks. The side panels are glued and nailed around this. Next the soundboard is set, scroll boards are attached to both sides of the protruding keyboard, and then moldings are added as reinforcement. In addition the outercase has to be made around the instrument.

c. Woodworking — Simplicity and the Omission of Moldings

The side panels, bottom, lid, keyboard, and braces of the Ruckers' are all made from about 13-14 mm thick planks of poplar. The bentside has far fewer curve than one would think. Intricate woodjoints are not found, but rather simple wooden pegs are used frequently. The wrestplank is axe-split from an oak log, and its back surface is not often planed. In general the Ruckers' woodworking is not very beautiful but rather coarse and quickly done.

In Italian style, because of its natural finish, careful and precise work, avoiding scratches and stain, is required. And the molding used often proved troublesome in its application to the instrument.

d. The Bridge — Simple Section

The design of the bridge is classified in two main styles. The Italian and German types use molding, but the Ruckers model is a very simple scalene shape.

e. The Plucking Line — Parallel

Whether the plucking line is set on parallel to the front edge or diagonal is decided at the first stage of planning the instrument. It would affect the sound and the entire style of instrument. If the plucking line is set diagonally the wrestplank width is saved, and the curve of the bentside and bridge are also diminished. However, if one doesn't put the keyboard and the jackslide on a diagonal, it makes things much easier. Ruckers employed parallel plucking line.

Even though the simplicity of the parallel plucking line is quite apparent, one can see the diagonal one used frequently in Italian and German style. It may derive from the verginal which was more popular in early times.

f. The Jackslide — The Two-Piece Slides and the Use of Leather

The Ruckers' jackslide consists of a two layer arrangement with a movable upper and a fixed lower. The guide holes of the harpsichord's lower and both of virginal's are cut in thin leather. It is easy to make and reduces mechanical noise.

One piece jackslide, called boxslide, work better for short jacks which can be seen in Italian models.

g. Decoration — The Inner-Outer is Abandoned, The Use of Paint and Paper

In its early period of development the harpsichord had a protruding keyboard. Because of that both sides of the keyboard of false inner-outer instruments were always decorated with scroll plates. Many surviving instruments have decorative remnants of inner-outer construction such as those mentioned above.

The Ruckers' harpsichord and virginal have keyboards built-in and do not protrude. They covered all surfaces of the instrument with decorative motifs. The outer surface was often painted in a marble pattern, and the inner surface decorated with block printed paper. Examples of extremely overdone decoration can be found but generally a simple yet sumptuous design was the rule.
h. The Rose --- Die-Cast Metal

In general, the soundboard of the harpsichord has an elaborately carved rose in geometric patterns like the lute. However, Ruckers used a coarse lead die-cast rose design of an angel playing the harp and their initials.

i. The Bentside --- C-Bent

Through the history of harpsichord, instruments with S-shape bentside were made frequently. Ruckers, however, made only a C-shape bentside and a separated tail style.

j. Scaling --- Long Scaling

The scaling, as it determines the sound and the character of the instrument, is the most important aspect of its construction. It is known that Ruckers adopted a 355mm scaling using iron string. However, because of problems with pitch and the material of the string, more cannot be said about it here.

Let me point out one remarkable thing here. The methods that the Ruckers' family introduced all pointed the way towards easier manufacture. It is clear that they undertook mass production. They have made an enormous number of instruments, consequently they contributed much to the development of keyboard music.

II. The Archetypal Harpsichord --- The Archetype and its Tradition

The "Ruckers Revolution" brought great change on the history of harpsichord making through "mass production". But the tradition of harpsichord making before Ruckers was succeeded in various countries, though influenced more or less by Ruckers' model, and it still played a major role on the development of keyboard music.

Characteristics of an Non-Ruckers style are well known to appear on Italian instruments, but we can find them also on the harpsichords and virginals of other regions. Generally, those are said to be "somewhat Italian yet more so" or "median type between Italian and Flemish". But they certainly are derived from the archetype, and characteristics of the Archetypal Harpsichord. The Archetypal Harpsichords are instruments which preserve the characteristics of the Archetype, in opposition to the great pressure of Ruckers.

Before Ruckers joined the St. Luke's Guild, some other significant people joined the guild and made instruments, a few of which remain (Pre-Ruckers Flemish), and show some traits of the Archetypal instruments. I'd also like to show what Ruckers succeeded from their forerunners.

Following are some examples of the Archetypal instruments and their noteworthy traits.

a. The Polygonal Virginal of Joos Karest
   [Joos Karest, 1548, Antwerpen? / Brussels Conservatoire]

Karest was born sometime before 1500 in Cologne to Haas van Guelen, and joined the St. Luke's Guild in 1523. At first glance his varnished polygonal virginal resembles Italian models, but the fact that the keyboard does not protrude immediately takes one's eye. It has two geometrically patterned roses, one is of a round shape and the other is odd shape. The moldings around the edges are thick, and the side panels are joined in dovetail joints. The
lower jackguide is quite broad and it forms a second soundboard.

An instrument that closely resembles this has been found in a painting, "Girl at the virginal" by Catherina Van Hemessen, 1545, Antwerp. One can clearly identify the dolphin patterns on the instrument in the painting. "Portrait of the Von Bilhem Family" by Frans Florinz de Vriend, 1565, Antwerp, shows a virginal decorated outside with garlands of flowers and small birds, and the thick moldings are painted in a dark color. The highest note is a 2 without g sharp, and this range of C/E to a 2 is very characteristic of northern European instruments at that period. The left end of the jackrail is supported by an arm which extends from the left end of the keyboard. This feature remains as one of traits of English Virginals.

b. The Claviorganum of Lodewijk Theeuwes
   (Lodewijk Theeuwes, 1579, London / Victoria and Albert Museum)

Theeuwes joined the St. Luke's Guild in 1579 and then moved to London. This harpsichord has three sets of strings. Like a virginal, it has square holes on the soundboard which work as upper jack guide, although to operate the register the lower guides are moved. Nuts are set on the soundboard, and there are square spaces on both sides of the keyboard, all these features remind one of a virginal. The bridges seem to have molding in the photograph.

c. The Double Virginal of Marten van der Biest
   (Marten van der Biest, 1580, Antwerpen / Germanisches Nationale Museum)

Biest, as a member of St. Luke's from 1557, was a witness at the wedding of Hans Ruckers (I). The compass C-c 3 seems to have been enlarged from the original plan of C/E-c 3. This spinet-type rectangular (mother and child) virginal is almost identical to Ruckers', except that the geometrical rose is startling. It must be mentioned that all of "What Ruckers Bequeathed", I wrote in the previous chapter, were not invented by Ruckers but regulated and fixed by them.

d. The Italian Harpsichord
   (Hieronymus Bononiensis, 1521, Rome / Victoria and Albert Museum)

This harpsichord, made by Hieronymus in 1521 in Rome, already has Italian traits which continued over two centuries. Its dating, 1521, is the oldest one among extant harpsichords. However it cannot be decided that the Italian Harpsichord is the origin of all harpsichords. What position does the Italian harpsichord occupy? I think the Italian harpsichord is one variation of the Archetype which was purified by using Italian cypress, an excellent material.

Hieronymus' instrument has a parallel plucking line, which is not typically Italian. Since the instrument has major reconstruction work done on it in the past, and has a relatively smooth curve to the bentside, I wonder whether it is original or not.

e. The Early German Harpsichord
   (Hans Muller, 1537, Liepzig / Roma Raccolata Statale di Strumenti Musicali)

Since the prevalent instrument in Northern Europe at this time was the virginal, a harpsichord is truly novel. At first glance it reminds us of Italian Style but it seems to have much in common with Karest's virginal. Its outer surface shows complex grain of ringed porous wood that reminds one of Ruckers' Ashgrain paper. The mechanism is a very uncommon one with two string sets and three registers; the parallel one serves as a Nasal stop(!), the other two being diagonal. The lower jackguide is movable (like Theeuwes). It also has a movable keyboard so as to shift the pitch.
f. The English Virginal
   (Stephen Keene, 1668, London / Russell Collection, Edinburgh)

At a glance it is no different from the Ruckers' spinet-type virginal. However, the details show many Non-Ruckers traits: four wood-carved geometrical roses, a jackrail support arm extended from the left side of keyboard, a black keyboard, and a shorter string scale. The case is made from oak and the outer face is quite plain, yet the inner face is sumptuously decorated with pressed gold leaf. Having a molding replete with studs like Italian ones, it gives the appearance of a false inner-outer. The lid swells like a coffin.

g. The Early English Harpsichord
   (Charles Haward, 1683, London / Hovingham Hall, Yorkshire)

It has four geometrical roses and an S-shaped bentside. It has two diagonal plucking lines and once had a parallel Nasal stop like Muller's. Having no upper brace it is supported by broad diagonal lower braces.

h. The Early French Harpsichord
   (Jean-Antoine Vaudry, 1681, Paris / Victoria and Albert Museum)

It has a screw-leg stand, chinoiserie decoration, G/H-c³ compass, and black naturals double manual with coupler. Its proportion looks as if a small size Taskin model, but it shows many Non-Ruckers traits. The bridge with molding, and the geometrical rose stand out. The nameboard top is cut down; it is thought to be a rest for the score. Using walnut and Lebanon cedar, the side panels are thinner than Ruckers but are not joined around the bottom in the Italian fashion. Having no upper brace it is supported by broad diagonal lower braces. The ribs of the soundboard are complex, not neatly arranged as those of Ruckers' instruments.

17th century French instruments have been greatly destroyed and those remaining are few but it is true that many great makers were in production. Among those, Vincent Tibaut's harpsichords are very similar to Vaudry's. I have unfortunately no information of the production of the Denis family of Paris, but there is great interest in their instruments because of the place and time of their production. Martin Le Roy's beautiful 1685 Italian-like proportion instrument with a stand of double-screw-legs was destroyed by the bombing in the World War II. Michel Richard's 1690 bentside spinet with compass G/H-c³, S-bentside, has scrolls on the both side panels of the keyboard as remnants of false inner-outer. Gilbert Desruisseaux 1670 double manual harpsichord has the same compass as Richards', S-bentside, remnants scrolls, cut down nameboard, screw-legs, and besides these unique reverse curved nuts like Italian ones.

i. The 18c. English Harpsichord
   (Thomas Hitchcock, early 18c, London / Victoria and Albert Museum)

This early 18c. English harpsichord made of walnut has a S-bentside and broad diagonal lower braces in its inner structure like Haward's. As well as these Archetypal traits it has skunk-tail sharps and nasal stop which are 18c. English traits.

In 18th century England, where the Industrial Revolution arrived first, the Hitchcock family and the Haward's manufactured bentside spinets. Harpsichords were precision-manufactured by the Kirckman and Shudi-Broadwood families until the early 19th century. These form a peculiar style reflecting the special circumstance of the popularization of music in Great Britain.

Because there lies so long a time between the "Ruckers Revolution" and the late English style, it is difficult to say clearly which characteristics are the affect of Ruckers or not.
j. The German Harpsichord
[Christian Zell, 1728, Hamburg / Museum fur Kunst und Gewerbe]

This German harpsichord has many Archetypal traits in almost all respects as written in chapter one. However it has a very different feel from the "purified Italian Style". Working in Hamburg, Zell, the Hass and Fleischer families all produced Archetypal instruments with S-bentsides.

The one manual harpsichord of Christian Vater in Hanover in 1738 has S-bentside, screw legs, brass scaling, and broad lower braces without upper braces. (The visual impression of this harpsichord is very similar that of Desruisseaux for me. I can't explain the reason here exactly but it really impressed me with the great flow of the Archetypal harpsichord.)

Michael Mietcke of Berlin attracts our attention by the relation to J.S. Bach. His two harpsichords in Charlottenburg are said to be similar in structure to Zell's. These were rebuilt in the period of Quantz and C.P.E.Bach simultaneously but curiously they have scalings set exactly a third apart.

A harpsichord attributed to Gottfried Silbermann and ones by Karl August Grabner of Dresden have a C bentside, no upper brace inner structure, a diagonal plucking line, molding on the bridge, a geometrical rose, and other Archetypal traits.

Table 1 is made for a comparative study. It is simplified for convenience sake, so there are some obscurity and may be objective opinions.

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</table>

Table 1. The Archetypal Traites ○ and the Ruckers' Traites △
The Classification and The Genealogy of Harpsichord

If we think of harpsichords as being divided into two groups, Archetypal and the style of Ruckers' new tradition, their classification and genealogy becomes reasonable and easy to understand. I should like to propose a genealogy here. (Table 2)

The top of the chart represents the hypothetical Archetypal. And we can now also understand the great role of Ruckers family in the history of harpsichord.

Table 2. Genealogy of Harpsichord

---

SEIZO YOKOTA
HARPSICHORD MAKER
JAPAN
On three well-proportioned alto recorders

"Wer aber sagt, eine Flöte sey eine Flöte, für den ist dieses nicht geschrieben"

(Johann Georg Tromlitz 1783)

In 1981 Frans Brüggen gave an insight into his recorder collection when publishing eighteen workshop drawings (drawn and measured by Fred Morgan). These sheets seem to be a storehouse for all who try to comprehend the principles of design and construction used in the eighteenth century by important makers of recorders (1). Reflecting the great number of data Fred Morgan has given I always wonder: What are the dominating points of view when proportioning recorders? Herbert Heyde says: "Die Verfahrensweisen beim Konstruieren und Proportionieren waren recht verschieden, wobei die Gestaltungskünste mancher Meister erstaunlich sind"(2). Analysing the structure of three famous recorders we can demonstrate essential principles.

A. Thomas Stanesby sen. took the contemporary linear measure as a basis (inch=25.378 mm). The sounding length of his recorder is exactly 18 inches (456.8 mm). That can be reduced to 54 moduli per 1/3 inch, which are proportioned as follows:

\[
\begin{align*}
\text{centre : (head + foot)} : \text{sounding length} \\
25 : (16 + 13) : 54 \text{ moduli} \\
100 : (64 + 52) : 216 \text{ lines}
\end{align*}
\]

Stanesby made his instrument (drawing sheet VIII) with stupendous accuracy: there are no tolerances at all! The position of the central point of the six finger holes is exactly 8 inches i.e. 4/9 sounding length; the position of the first finger hole is exactly 5/8 sounding length. Dividing the total length according to the golden section, you will find the main subdivision. The elected quantity of lines is ideal for proportional thinking:

\[216 = (2+2+2)^3\]

There is a lot of proportions in it. The proportion we have detected is of no stringency. Is experimental knowledge preponderant here? Or can we suppose a specific intention in the fact that Stanesby has preferred two square numbers and a cube for the sounding length?

<table>
<thead>
<tr>
<th>measurements according to Morgan (in mm)</th>
<th>the result of the analysis</th>
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<tbody>
<tr>
<td>sounding length 456.2</td>
<td>456.8 216 18 1 1/2</td>
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<tr>
<td>head(blockline) 135.2</td>
<td>135 64 5 1/3</td>
</tr>
<tr>
<td>centre</td>
<td>211 100 8 1/3</td>
</tr>
<tr>
<td>foot</td>
<td>109.97 52 4 1/3</td>
</tr>
<tr>
<td>first hole</td>
<td>285.5 135 11 1/4</td>
</tr>
<tr>
<td>central point</td>
<td>203.02 96 8 2/3 4/9 SL</td>
</tr>
</tbody>
</table>

\[2 5 13\]
B. Independent of Stanesby, Peter Bressan goes his own way. He prefers a different method of proportioning his luxurious recorder (drawing sheet X) which is most interesting:

\[
\text{centre : (head + foot) : sounding length} = 13 : 15 : 28
\]

This kind of division was first displayed when exploring the well-known "Flûte traversière de J.J.Quantz" Berlin 5076 (3). In either case it made use of the fact that in the equilateral triangle a simple proportion is cryptic: height:side = 13:15

\[
\frac{f}{h} = \frac{13}{15} = \frac{26}{30} = \frac{13}{15/2} = \frac{13}{7.5}
\]

The maker of the "Quantzflöte" thus fixed the position of the first finger hole; Bressan, however, determined the length of the centre and of the foot and the head at the same time in this way. In either case the proportion 16:19 is of some importance (see the illustration).

It is noteworthy that baroque makers of woodwinds disposed their instruments in accordance with the equilateral triangle; beyond that, in 1775, the famous August Grenser deduced each length that is part of the sounding length of a traverso immediately from the pentagram (3).

The procedure Bressan has chosen is rather simple, though it seems difficult at first:

A line segment, consisting of 105 units, is to be divided according to the proportion 16:19:35, resp. 48:57:105. Considering this line to be a side of an equilateral triangle, the height of the triangle will be 91 units. Adding the height to the side, the sum of 196 units is divided according to the proportion of 13 : 15 : 28 (see above).

Footnotes:
4. The New Grove London 1984 1269 (Maurice Byrne)
That means:

- **height** : side : (height + side)
  - 13 : 15 : 28
  - 91 : 105 : 196
  - 91 : (57 + 48) : 196

- centre : (head + foot) : sounding length

Bressan took the height as the centre of his recorder and the side for the sum of head and foot. He thus deduced all the parts from the equilateral triangle.

We can say that the sequence of numbers formed by the 7 dominates the procedure. The 28 was thought to be a numerus perfectus. The sounding length is to be interpreted as the square number of the duplicated 7:

\[
196 = (7 + 7)^2
\]

The procedure Bressan preferred convincingly shows a maker of woodwinds well versed in proportional thinking who employed arithmetical and geometrical methods at the same time.

The next problem is how to interpret the 196 moduli! Is the sounding length of 450.5 mm, as Fred Morgan stated, really identical with 17 3/4 inches (450.6 mm)? The structure of this recorder argues against this presumption!

By birth Peter Bressan is the Burgundian Pierre Jaillard from Bourg-en-Bresse (4). I assume with good reason that he used the Burgundian foot-rule: Pied de Bourgogne = 351.2 mm

- pouce = 27.6 mm
- ligne = 2.3 mm

Indeed the sounding length is exactly 196 lignes (Burgundian)! It is open to question whether Bressan always used the Burgundian yardstick.

### Measurements according to Morgan (in mm)

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<tr>
<th></th>
<th>mm</th>
<th>ligne</th>
<th>pouce</th>
<th>moduli</th>
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<td>450.5</td>
<td>196</td>
<td>16</td>
<td>196</td>
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<tr>
<td>centre</td>
<td>209.2</td>
<td>91</td>
<td>7 7/12</td>
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<tr>
<td>head + foot</td>
<td>241.5</td>
<td>105</td>
<td>8 3/4</td>
<td>105</td>
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<td>foot</td>
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<td>4 3/4</td>
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<td>modulus</td>
<td>2.3</td>
<td>1</td>
<td>1/12</td>
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C. Johann Heitz, "Königlicher Hof- und Kunstdrechsler" at Berlin amongst other things made luxurious recorders too. His instrument is as long as the recorder made by Bressan. His principle of proportioning, however, is rather different, but always related to the 13 (drawing sheet IX):

- head = 4/13 SL
- foot = 3/13 SL
- centre = 6/13 SL
- 1 hole = 8/13 SL

The linear measure Heitz used is to be found rather quickly. We suppose that Heitz coming from Herrenhof (Sachsen-Gotha) brought his home foot-rule to Berlin (Fuß = 287,62 mm). Proceeding from the presumption that Heitz selected a multiple of 13 for the sounding length of his recorder we suggest the square number of the 13:

\[ 169 = 13^2 \]

measurements according to Morgan (in mm):

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<td>207,6</td>
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<td>foot</td>
<td>104,8</td>
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\[ \begin{align*} 
\text{mm} & \quad \text{modulus= 1 4/9" or 1/9"} \\
450,4 & \quad 13 \\
138,0 & \quad 4 \\
207,6 & \quad 6 \\
104,8 & \quad 3 \\
\end{align*} \]

Zoll

13 \quad 18 7/9
4 \quad 5 7/9
6 \quad 8 2/3
3 \quad 4 1/3

Please remember the elementary proportions Heitz made use of!

- foot : centre = 1 : 2
- head : centre = 2 : 3
- foot : head = 3 : 4

If that is so the Pythagorean Tetraktys 1-2-3-4 seems to be the standard of proportioning this recorder!

To summarize it briefly:

As to the knowledge of instrument-making modern research has pointed out important results by analysing authentic baroque instruments. In our case a number of different ways of proportioning an alto recorder is manifest. I think we have exposed three ingenious methods:

- Stanesby based his considerations on the cube 216, which set free two square numbers.
- Bressan on the other hand proceeded more geometrico and has chosen the equilateral triangle for an archetype in connection with the numerus perfectus 28 (so did the maker of the "Cuantz-flöte").
- Heitz however was pleased with the simplicity of the Pythagorean Tetraktys that was cleverly brought in relation to the 13.
At last I want to lay down a survey of the proportions which are to be found out throughout the variety of the recorders of the Brüggen Collection. To illustrate the matter I list up a table of figures made up in times gone by.

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These sequences were steadily used by the flute-makers of baroque times for the main proportions.

A Head : (Centre + foot) : total length
B head : (centre + foot) : sounding length
C centre : (head + foot) : sounding length

(The Roman figures indicate the number of the drawing sheet)

2 : 3 : 5 Denner(A VI) Haka(A XV) Stanesby jun.(A XVI)
      Gahn(A XII) Wyne(A XII)
3 : 5 : 8 Bressan(A X) "Quantzflöte"
8 : 13 : 21 Steenbergen(A VII)
55 : 89 : 144 Dupuis(A III)
4 : 5 & 9 Bressan(C V) Denner(C VI) Gahn(C XII) "Quantzflöte"
5 : 6 : 11 Haka(C XV) Steenbergen(C XIV)
6 : 7 : 13 Heitz(C IX)
13 : 20 : 33 Steenbergen(A XIV)
7 : 8 : 15 Stanesby jun.(C XVI)
8 : 9 : 17 Steenbergen(C VII)
10 : 11 : 21 Stanesby jun.(C I)
12 : 13 : 25 Dupuis(C III)

right triangle
("Pythagoräisches Tripel")
9 : 16 : 25 = 3^2 : 4^2 : 5^2

"Pythagoräische Tetraktys"
1 - 2 - 3 - 4

equilateral triangle
13 : 15 : 28

golden section
Bressan(A X)

Stanesby jun.(A I)

Hotteterre(A II) Stanesby jun.(A I)

Stanesby jun.(A IV)

Stanesby jun.(A V + A IV)

Stanesby sen.(A VIII)

other proportions:
3 : 7 : 10 Bressan(B IV + V) Haka(B XV) Steenbergen(B VII + XIV)

Stanesby jun.(B XVI)

Stanesby jun.(B XII)

Stanesby sen.(B VIII)

Stanesby sen.(C VIII)

Denner(B VI) Gahn(B XII) Steenbergen(C XIV)
foot : head
3 : 4 Denner(VI) Heitz(IX) Stanesby jun.(XVI)
7 : 13 Steenbergen(VII) (XIV f:H = f:c = 7:13)
16 : 19 Bressan(V+X) "Quantzflöte"
13 : 16 Stanesby sen.(VIII)
9 : 11 Haka(XV)
23 : 26 Hotteterre

some specific figures:
196 = (7+7)^2 = 14^2 Bressan(X)
159 = = 13^2 Heitz(IX)
225 = = 15^2 Steenbergen(VII)
256 = = 16^2 Heitz(IX) Steenbergen(VII)
216 = (2+2+2)^3 Stanesby sen.(VIII)
336 = 3*7*16 Stanesby jun.(I) "Quantzflöte"
198 = 2*9*11 Haka(XII)

When reading this article some people are likely to be a little sceptic. They might wonder if flute-making in the 18th century was really so complicated and affected. But what did Albrecht Dürer do in 1504 when he intended to paint Adam and Eve?

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After having finished another problem arises. Bruce Haynes said: "Of all the woodwinds, recorders are the least flexible in pitch and therefore the most useful as historical pitch indicators" (Nr. 53_28).

As to the pitch what are the consequences of making a woodwind according to preconceived geometrical figures? How about the pitch? When constructing a recorder nobody knows for sure what the forthcoming result concerning the pitch is likely to be. Was the maker of a recorder interested in accommodating the sounding length to a pitch predetermined when the starting length was previously fixed by an ideal square number or a cube or an equilateral triangle or the pentagram? What was the first intention: pitch or measure? Stanesby's recorder for instance measures 1 1/2 foot in length, isn't it a sort of pitch-pipe?