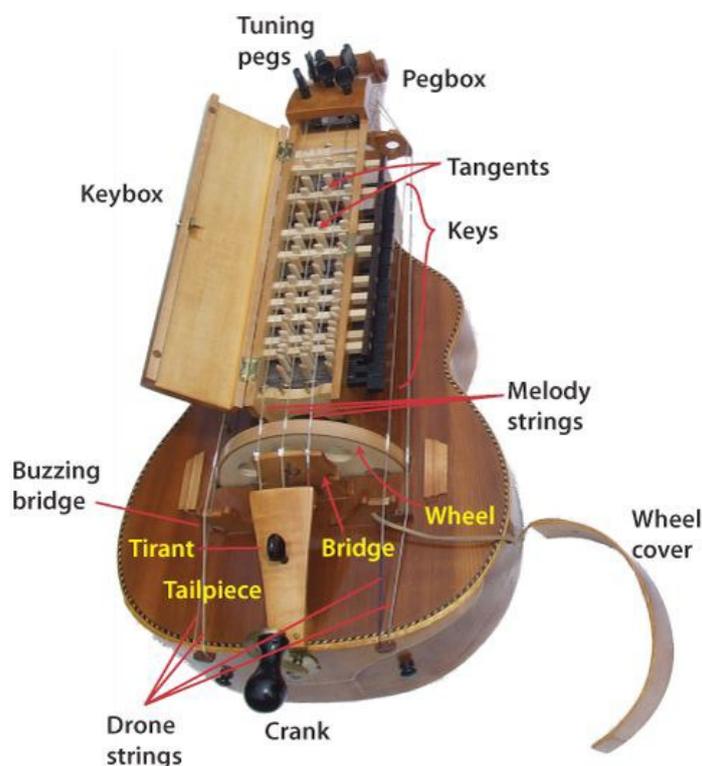


A Hurdy Gurdy Introduction

Paul Sherwood, June 2018

This short document has been written to help those unfamiliar with this fascinating and occasionally frustrating instrument make their first sounds. It is not meant to replace more thorough documents, or the help of an experienced teacher, but to help you out if you have an instrument in your hands without a player to show you the ropes. It is intended for French-type instruments.

1) Parts of the instrument and how it works



The sound is generated by the friction between the wheel surface (which is smooth but coated with rosin) and the strings which have a little cotton wool wrapped around them at the point they touch the wheel. On most instruments you can choose which strings make contact with the wheel, the drone strings can usually be moved from one notch to another on the bridges on which they rest, and the melody strings can be lifted and hooked onto supports at the end of the keybox nearest the wheel, that keep them from resting on the wheel.

The *trompette* string (the leftmost string in the picture) rests not on a rigid bridge (like the others) but on a small, loose, carved piece of wood marked as the buzzing bridge above (aka *chien* or dog) which creates a buzzing sound if the string vibrates strongly enough. The *tirant* peg causes a thin thread to pull on the *trompette* string and the tension in this thread controls whether the buzz happens for a gentle string vibration, or only starts when the wheel is turned quickly. The careful setting of the *tirant* peg is essential to make the *trompette* work properly.

All the strings are tuned from the peg box end, traditionally the pegs are similar to violin pegs, working by friction. Many modern instruments have geared tuners similar to those used on banjos.

Usually an instrument will come with a few bits-and-bobs, it is good to check the following list before you take the instrument away from its lender or seller.

- a) a supply of cotton wool, some types work better than others so don't assume you can just nip down to the chemist
- b) a block of rosin (as used on a fiddle or cello bow) or a bottle of "liquid rosin" - which is solid rosin dissolved in a solvent.
- c) a strap which will reach around your waist to secure the instrument
- d) if your tuning pegs are of the friction type, a tool to help turn them (they can be stiff) usually called a *tourne-à-gauche*.

It is also a good idea to ask the instrument seller or owner what pitch the strings are meant to be tuned to, and ideally get it close to being in tune before you take it away.

2) First Sounds

Always remember – don't touch the surface of the wheel! But if you do see Appendix 1.

It is best to start with just one melody string in contact with the wheel. That will make adjustment and tuning easier for the beginner.

When seated, place the instrument on your lap, the crank on the right hand side, and secure with a strap around your waist so the instrument does not move too freely. The ends of the strap attach to pegs on the instrument – there should be one behind the pegbox, and one close to the crank (if there are two, use the nearer or upper one). The front surface of the instrument (soundboard) should slope downwards away from you, the keys return to their "resting" position by gravity and this won't work if the instrument is flat on your lap. Some instruments work well at a shallow angle (e.g. 45 degrees to horizontal) in some cases, particularly guitar bodied models it will be more comfortable if the sound board is almost vertical.

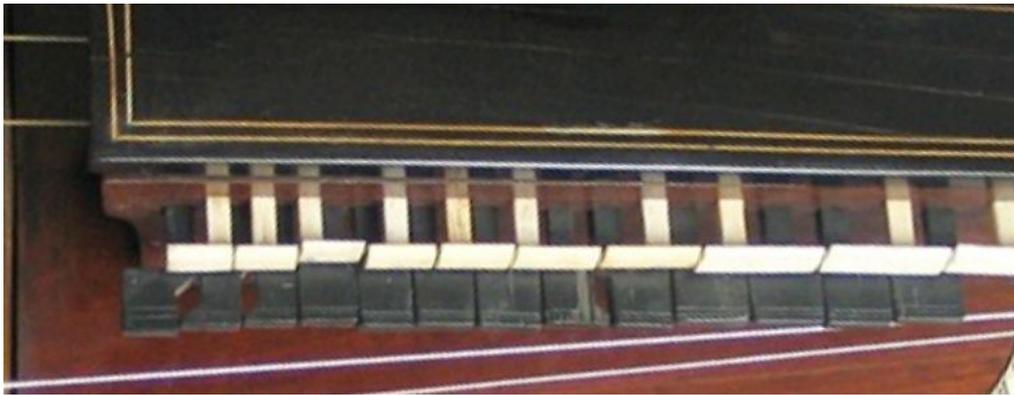
With one string engaged, turn the handle clockwise as viewed from the right, the wheel will rub the string and produce a tone.

There are a number of ways an instrument can be strung but the most likely chanter string notes will be D or G. The octave will depend on the choice of string, many instruments have 2 strings an octave apart. Hopefully the string is close to being in tune. See Appendix 2 for more information on strings and tuning.

If the instrument is in playing condition you should get a clear note. If not see Appendix 1 for the basics of string adjustment.

You can check the pitch of the open string using a chromatic tuner (a free tuner app on a smartphone such as DaTuner Lite will often work well). The string is tuned using the one of the tuning pegs, usually one close to the keybox lid on the same side as the string. Usually turning anticlockwise makes the string sharper, but you will soon find out if this is the case.

You should be able to play a scale using the main row of keys, this will be the row furthest from you. On most traditional instruments they are black as below.



If your chanter string is playing a G open note, these keys will play a C major scale with the first key being A. If your chanter string plays a D open note, the scale will be G major starting with D (open), E, F#, G etc.

The row of keys nearest you (traditionally white as in the picture) play the semitones between these main scale notes.

Once this is working you can add the drone strings, one at a time. When you are experienced, you won't need a tuner because you can listen to the sound of the drone string and the melody string together and tune to get a pleasing sound, but to begin with, you can lift the melody string off the wheel (onto its rest) and tune the drone string with the tuner.

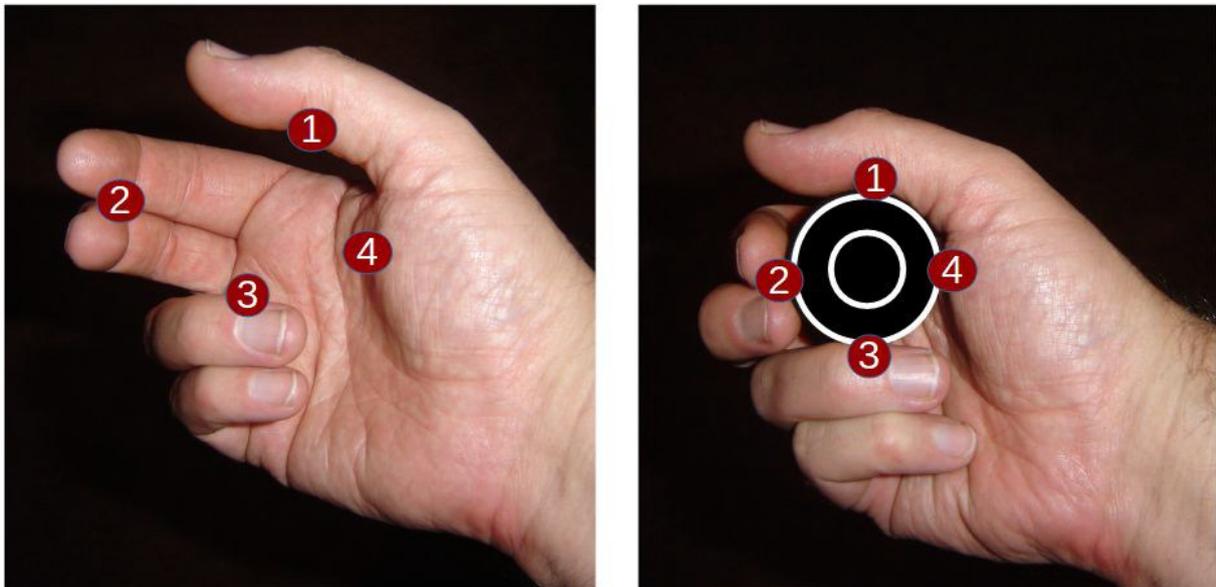
Start with the *trompette*. If the chanter string is a G the *trompette* string will usually have a pitch of C or (less often) G. For a chanter string tuned to D, the mostly likely *trompette* pitch is D also. You may need to adjust the tirant peg so that for slow turning of the wheel you get a clean sound, and when the wheel turns fast, it starts to buzz. It is best to start with a clean sound (less tension in the tirant thread) and to tune it like this. Be careful as the tirant thread can break if overtightened. The *trompette* string will be straight when the tirant thread is slack, and will have a kink in it when the tirant is tightened to produce a buzz. The kink should just be a few mm away from straight, the angles can be seen on the instrument below. The tirant is to the right of the chien, The picture also shows at the left the peg which can be used to take the *trompette* string off the wheel.



Similarly the drones can be added one at a time. A gurdy with G chanter strings will usually have drones in C and G, the higher drone is usually an octave below the *trompette* string. A gurdy with a D chanter will usually have drones in D (one and two octaves below the melody and *trompette*). However it is important to understand how your instrument is strung, the drone strings are quite strong and heavy and over-tightening may damage the instrument.

4) First steps with the right hand

Although this short guide is not meant to replace a method or a teacher, it may be helpful to start out holding the handle or knob in a manner that will make playing easier later on. The idea is to develop a relaxed (not clenched or tight) grip, with the hand in a natural position (wrist not bent). A good hold can be produced by forming your hand into an “imitation gun” shape familiar from childhood cowboy games, and then closing the fingers and thumb to form a cavity or cage in which the knob will sit, this cage has a square shape because it is enclosed on four sides by the thumb (on top, labelled (1) in the pictures), by the 1st and 2nd fingers at the front (2), by the upper surface of the ring finger (3) and by the part of the palm of your hand which forms a fleshy base of the thumb (4).



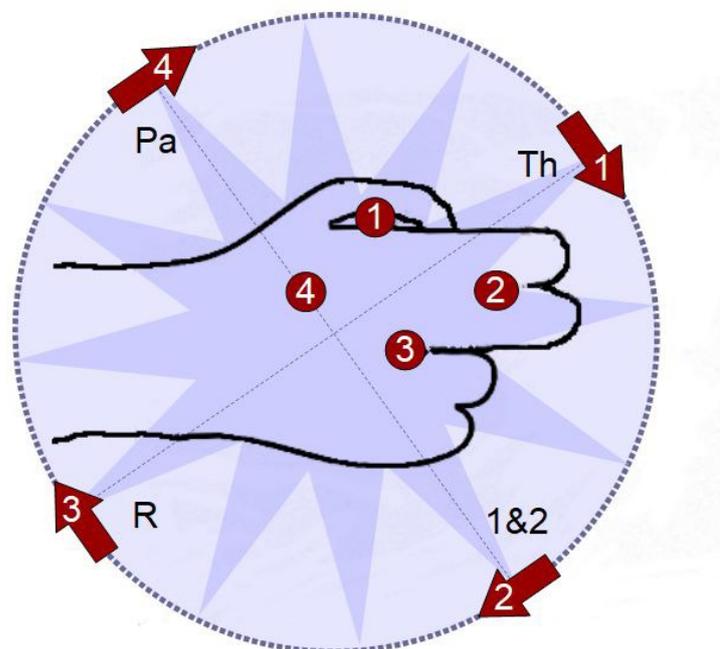
Forming a cage to hold the knob

This square shaped hold is a good starting point and guide for the “*coup de quatre*” technique, in which four distinct buzzes are played with the *trompette* string for each turn of the wheel. Once you have mastered this, you will be able to play accompaniments for most folk melodies. It can take a while (don’t worry if you struggle at first) but we will finish this introduction with a few pointers to help you get started.

As you observe expert players you will find great variation of *trompette* technique, there really isn’t one “correct” way to do it. What follows is a suggestion which reflects what many teachers will say, if you start out this way it won’t be difficult to take on board help from most experts.

The four buzzes or *coups* are made by giving the wheel distinct accelerations at four points of the rotation, which should be evenly spaced around the circle that the knob traces out. If you think of the four parts of your hand which form the cage as described above, each part will give a distinct push to speed the rotation, assisted by the muscles of your arm and wrist. These pushes or impacts can be made a little more distinct if your grip is slightly loose, so your hand moves a little before making full contact with the knob.

The wheel should be turning clockwise (when viewed from the player's right). The first push comes from the thumb and it should happen as the hand starts to move downwards. The thumb can flex a little to help make the buzz sharper. The following diagram shows the angle of the impact, viewed from the right looking towards the instrument.



Position of the *coups* on the circle, viewed from the player's right side and the parts of the hand.

Th = Thumb, 1&2 = 1st and 2nd fingers R = ring finger, Pa = Palm (base of the thumb)

Skip the second *coup* for now.

The third buzz is played at the opposite point of the rotation to the first, as the hand is starting to come up, the top surface of the 3rd (ring) finger will push the knob up towards.

Practice getting these two buzzes working evenly, with a steady rotation speed (not too fast). If you set the metronome to about 80 bpm and turn at 40 turns per minute, you should be able to do a buzz for every click. Remember the importance of the *tirant* peg adjustment. For a steady rotation of the wheel (not attempting any buzzes), the buzz should be close to sounding, so that the acceleration you need to get a buzz is not too sharp. Spend some time getting longer, louder buzzes and in contrast, shorter, sharper distinct buzzes. You will need to change both the *tirant* and the way you play.

Once this is easy to do and you have some silence between the 2 *coups* you are playing, you can start work on the 2nd and 4th *coups*. Take them one at a time, keep playing the 1 and 3 *coups* at a gentle speed but try and put a buzz into one of the gaps. 1-2-3---1 is an easier pattern than 1---3-4-1, because you have more control in your fingers than in the palm of your hand. For the 2nd *coup* it is OK for the 1st and 2nd fingers to flex a bit to provide a sharper tug on the wheel (although it is perfectly possible to play without doing this). Most players find the 4th *coup* to be the hardest, as the impetus has to come from your arm muscles. Think about giving someone standing close to you a sharp punch! as you approach the top of the wheel rotation. I think the key is to keep the speed fairly slow, so you can be deliberate in your movements and build control, then gradually speed up and things are working well at a slow speed. Once 1-2-3---1 and 1---3-4-1 are working it won't be too hard to play all 4. To repeat the proviso given at the beginning, this is by no means the only valid way to play the *coup-de-quatre*, just a suggestion that reflects what I have found to work and to be common practice.

Appendix 1) Basics of instrument adjustment

The hurdy-gurdy is a temperamental instrument (some more so than others) and it is often necessary to fiddle with the instrument. Even a quality instrument can sound awful if poorly set up. Assuming that the wheel is round and true, has a smooth surface, and the correct strings are fitted the main factors controlling the volume and tone of the note are as follows (not in any order)

1. The amount and quality of the cotton wool covering the string at its contact with the wheel.
2. The amount and quality of the rosin on the surface of the wheel
3. The pressure with which the string presses onto the wheel

The cotton wool and string pressure can be adjusted for each string but obviously the amount of rosin has to work for all of them. A lot of trial and error can be involved.

It is beyond the scope of this little introduction to tell you how to correct a poor setup, but if you are having problems the following may be helpful. If performed with care they won't irreversibly change the instrument so don't worry too much, but it is better to speak to the owner first.

Have a look at this video on changing the cotton from Neil Brook

https://www.youtube.com/watch?v=ycAerLYYy_Q

You will get an idea what a well-cottoned string should look like, and how to change the cotton. Remember not to touch the wheel surface.

There should be a thin coating of cotton on the melody strings (very light on a high D chanter) and the *trompette* string, the drones usually work well with a heavier binding, they don't need new cotton so often and it is usually best to leave them alone to start with.

If the string makes a feeble sound when properly cottoned, it could be due to insufficient rosin on the wheel, or it could be due to poor string pressure. String pressure does change when an instrument environment changes (temperature, humidity) and the effectiveness of the rosin is also affected by similar factors.

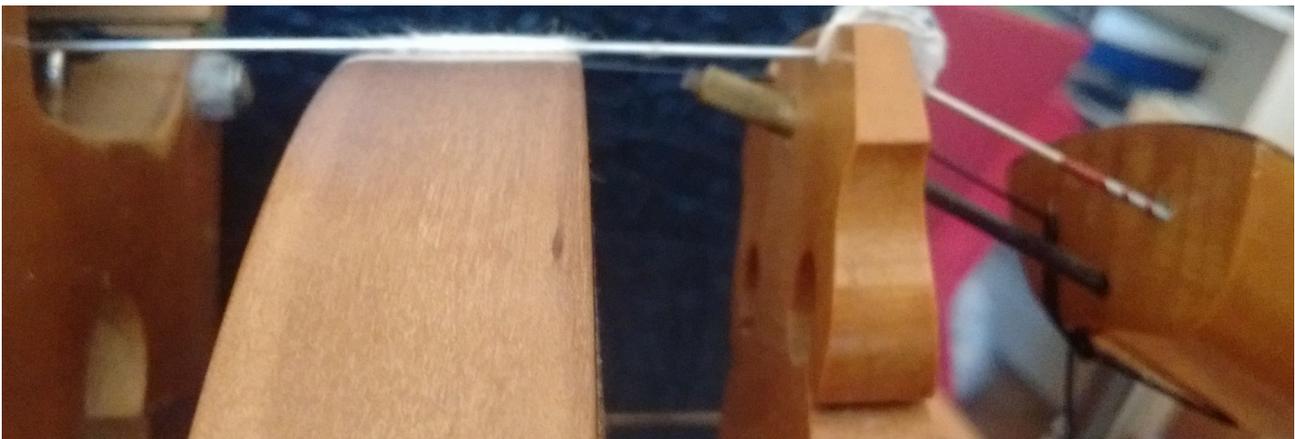
To add rosin to wheel the I prefer to have just one melody string in contact (so I can hear the volume and tone change), turn the wheel gently while holding a block of rosin in gentle contact with the wheel (you don't really need to press). You want to rosin the full width of the wheel, you may need to move the rosin block side-to-side to ensure this.

To much rosin will make a loud, scratchy tone, particularly nasty when the wheel is moving very slowly. To remove rosin remove all strings from the wheel, take a clean (non-greasy, lint free) cotton cloth and pressing onto the wheel with a finger, turn the wheel fast. The friction should heat the cloth at the point of contact and the rosin (and any grease if present) will gradually transfer to the cloth. Change the bit of cloth in contact from time to time, and keep checking by putting the string back, until the sound has softened. Then you may need to re-rosin.

If you have touched the wheel the tone will be uneven as the resulting grease-spot will not play properly. To fix this follow the rosin removal and application procedures above. There should be no permanent effect.

String pressure is adjusted (for the melody strings) by raising or lowering the string at the bridge. Some bridges have adjusting screws built in, most more traditional designs don't so the adjustment is done by adding or removing bits of paper (shims) from under the string at the point it crosses the bridge. Pressure should not be excessive, and the effect will depend a lot on the string, rosin etc. The starting point for adjustment should be that the string, without cotton on, should make a very gentle contact with the wheel. You should barely be able to see a bend in the string as it crosses the wheel. Adding cotton thickens the string and it will usually start to play gently. If contact is too light you may find the sound has a tendency to flip from the main tone to a harmonic. To increase the pressure remove some of the shim paper and try again. It will be easier to start with if you slacken the string to do this, although with practice and care you often don't need to. If there are no shims or screws to adjust the bridge, the next step to increase the pressure is to cut the slot in the top of the bridge a bit deeper using a knife or needle file, obviously this is irreversible and if you over-do it you will need lots of shims to make up, it is better to get expert advice at this point.

The picture shows the angle made at the wheel for a Corelli Crystal string viola D string used as a D chanter. You can see the paper shims, and the slight angle where the string comes off the wheel towards the bridge, this is typical for a chanter in D.



If the open strings are playing well and in tune, but the keys give out of tune notes, you will need to adjust the tangents, there is one for each note on each melody string and depending on their type you may simply be able to twist them with your fingers, or you may need to loosen a screw. It is probably better to speak to the owner or seller before attempting adjustment.

Appendix 2) Hurdy-gurdy stringing

A G/C instrument will *usually* have strings from the following list. They won't always all be present and sometimes players will have fitted different strings to suit the music they play. Usually just one of the bass drone options will be present. The pitches are given in "scientific pitch notation" in which middle C is C₄

String	Pitch	Stringing suggestion	Comments
g' melody	G ₄	Plain gut, 0.94-0.97mm	Traditionally 2 of these are used, now often one is substituted with a g melody
c' <i>trompette</i>	C ₄	Plain gut 0.94-1.04 mm	tune to d' to play in G
g melody	G ₃	Viola g string (e.g. Corelli Crystal)	Not present if two strings are unison g
g <i>mouche</i>	G ₃	Plain gut 1.08 -1.20mm	Rarely used
c Tenor drone	C ₃	'cello g Savaez KFA 500 (light) KFA 530 (med) EMS 1.23mm silver wound NRI metal wound on gut ED 1.62-2.29	Don't use when playing in G
G bass drone	G ₂	'cello C NRI metal wound on gut ED 3.05-4.32	Don't use when playing in C
C bass drone	C ₂	'cello C KFA 1850 (strong) EMS 1.65mm silver wound NRI metal wound on gut ED 3.05-4.32	Don't use when playing in G

A D/G instrument will *usually* have strings from the following list. Usually just one of the bass drone options will be present.

String	Pitch	Stringing suggestion	Comments
d'' melody	D ₅	Plain gut 0.70 - 0.74 mm, badminton racket Yonex BG 65	D/G instruments usually have octave d'' and d' melody strings.
d' melody	D ₄	Plain gut, 0.97 - 1.04 mm or viola d string (e.g. Corelli Crystal)	
d' <i>trompette</i>	C ₄	Plain gut 0.94 - 1.00 mm	
a <i>mouche</i>	A ₃	Plain gut 1.08 mm	Rarely used
d Tenor drone	D ₃	'cello g KFA 484 (light) KFA 500 (med) KFA 530 (strong) NRI metal wound on gut ED 1.62-2.29	
G bass drone	G ₂	'cello C	Less commonly present

D bass drone	D ₂	'cello C KFA 1474 (med) or KFA 1850 (strong) NRI metal wound on gut ED 3.05-4.32	
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Notes

Savarez KFA suggestions are from Neil Brook's website.

NRI = Northern Renaissance Instruments, sadly not trading but they provided 4 strengths of hurdy-gurdy strings, defined by diameter of an equivalent weight gut string (ED).

Appendix 3) Further Information

1. The best book on maintenance is tri-lingual:
Die Drehleier, Feinabstimmung und Wartung. / La Vielle, Reglage et Entretien. / The Hurdy-Gurdy, Adjustment and Maintenance
Destrem, Philippe / Heidemann, Volker
ISBN 10: 392724015X ISBN 13: 9783927240155
2. Neil Brook has produced a Hurdy-Gurdy Tutor DVD in both D/G and G/C versions, and a maintenance DVD. There is a lot to be said to being able to watch and hear what is being described. For a small fee paid to Neil his videos are available on a private YouTube channels – see here <http://www.hurdy-gurdy.org.uk/gctutoryoutube.html>
3. Doreen and Michael Muskett have produced “The Hurdy-Gurdy Method”, ISBN 10: 1908904984 I think is the only printed hurdy-gurdy method in English and it contains much helpful advice. The fingering and examples are chosen to be applicable to G/C instruments, D/G players will have to transpose or otherwise adapt. Personally, however, I would not recommend new players to follow the approach described for the *coup de quatre*. The first *coup* as described in the Method resembles the 4th *coup* described above, the second corresponds to what I suggest for the 1st, and so on around the circle. Without question, the Muskett approach is capable of yielding good results but I don’t recommend it for beginners for two reasons. Firstly, most teachers today follow the approach that I have described and as a result, if you find yourself in a group workshop your hand will be at the same place as most of the other players, making it less likely that you will be told you are playing incorrectly. Secondly, the easiest *coup* to play for most people is the one I have described as the 1st, and musically it usually makes to start the bar with a strong emphasis, I think this makes the first steps easier.. the other *coups* require work and they should not be neglected, of course!