

## THE MUSICAL THREAD.

The deeper aspects of music first began to interest me when I read a passage in a book by Umberto Eco. He referred to Pythagoras and his mathematical formulae for the basic musical scale. It was something I'd never heard of or considered, as I am completely self-taught.

Although my father was a banjo teacher and quite a good guitarist, he never actually taught me anything. I'd watched him play stringed instruments of one shape or another from as early as I can remember, I assume he felt that that was enough. I have to admit, in retrospect, it was. I knew the mechanics of plucking a string, and the positions of both of my hands were perfect by default. I needed no lessons and, even as a fourteen year old, having seen something played just once on the guitar, I could play it.

Being a professional musician now for over thirty years and classically self-trained, I knew there was so much that I should know but didn't. Executing a Bach prelude was mechanical. But I knew that by knowing something of Bach the musician would give me more than just a small insight into the man himself, it helped me think his music out, as well as play it.

But I also knew, after a few days of reading up on Pythagoras, that it was time for me to learn more of the history of music.

I first researched and wrote a piece on the development of the Modes. This was really for teaching purposes, and for me to work out some sort of recipe for my cakes, that is the way I teach, the way that I convey different styles of music to my pupils. It took me a while but I arrived at my own recipe, and again, I got there in my own self taught way.

I have always enjoyed teaching and I think this comes from the fact that I am, in fact, still learning. Don't for one minute think that I'm a fireside strummer. I gave my first proper classical guitar recital at the age of seventeen, and in my late twenties, and early

thirties spent time as a session guitarist for the BBC. That calibre of work doesn't get offered to you without being one of the top guitarists around.

So I dug deep, and as I dug deeper into Pythagoras and the music of his time, and gradually worked my way forward in time, I realised that I had never seen the whole story put together, anywhere, certainly not in a way that the man in the street could understand. And I'm not talking about a study into the percentage of a single cent to find out why Pythagoras' system didn't work mathematically, or 'The Life and Times of such and such a composer', but a story line that can be followed, with just a small amount of my own logical opinion and reflection thrown in, and some historical observations to lend credence to a few considered possibilities along the way. This, then, is my aim, and, well, in my own self-taught way, here I go.

I have to admit that the wonderful world of the Internet has opened itself up to me for my research and cross-referencing, so it just goes to show that even an old fogey like myself can learn a few new tricks.

My first 'self-taught' lesson was this; Concentrate solely on the issue in question, and that is music. I tried to go further back into the history of Man, trying to find the first musical threads, but it left too much to conjecture, and religion kept rearing its head. Interesting and fascinating it may be, but for the subject at hand, that of music, I will only observe its spiritual influence.

So I shall begin the story in this present day, and from where man has been physically able to return. He has returned to the tombs of Northern Iraq and Egypt, and the riverbank digs of China, and the caves of Europe and the Andes, and he has held the proof in his hands, and in some cases, he has played the proof.

My first job was to set out a framework, something that we can relate to. This way there will be an overall picture to comment, and consider on as we wander through the millennia.

Our first tangible proof of man getting organised comes from between 35,000 to 18,000 BC. The proof of this is in the cave paintings found in the Dordogne region of France, and the Pyrenees region of Spain.

The first proof of any type of music that we have is from 50,000 BC, and it is in the shape of a fragment of a flute. It dates from Neanderthal times and was found in Slovenia. Until this flute was discovered, the oldest known flutes were Sumerian (which was in old Iraq) and Egyptian. The 50,000-year-old tag is an average date. It has actually been dated from somewhere between 43,000 and 82,000 BC.

This flute itself is a fragment of a much longer flute, and the first question that jumps to mind is whether the holes in this short length of bone are man made, or are they teeth marks from a carnivore that inhabited the same cave as the humans.

But here are two points. The dating of even 50,000 years old puts it before modern man and into the days of the Neanderthal man. Plus, on this particular piece of 'bone' there are two holes and two half holes at each end, which suggest two more complete holes making a total of four, and they appear to be, and this important, perfectly reamed holes. A carnivore tooth hole would either be a narrow and flat oval, or would have cornered angles, think of the shape of your own teeth. No, these holes appear to be reamed and smoothed out. So I think this is a safe starting point.

No one can question the feasibility that an old animal bone, which had been licked clean, both inside and out by a predator (this bone was the femur of a young bear), could have produced musical notes. Our early Man, on hearing the wind blow across the end of it and hearing the sound would have tried to copy just that sound.

Now the great danger we find ourselves in here is the fact that this is only a fragment of a supposed flute, and as I said, the holes could be accidental or created from some other source, other than man. It is common knowledge that arguments still rage over Archaeopteryx, the 150 million year old fossilised bird. Close

inspection of photographs show that some of the feathers may have been added on to the negatives by hand, and there are some anomalies between photographs that come from different sources. Both items, the flute and the fossil of the bird, are from so far back in the past that conclusive proof seems impossible to pin down.

The Slovenian flute seems quite convincing, but we are still left needing the final, conclusive proof as to whether the holes are on purpose or accidental.

But having looked over the facts above, we have something else, and something that I think is more convincing.

In 1996 the tusk of a Mastodon was discovered in the Neander Valley in Germany, it dated at 50,000 BC, and it has 16 aligned holes drilled into it.

It has to be considered impossible to imagine that a carnivore could gnaw along a bone this long in such a perfectly straight line. I must leave the final conclusion to the reader, but I'm being swayed in the direction of the interested cave man sitting quietly in his cave blowing on this thing, with no idea in his primitive head as to where it would all lead.

We now move to the next period of provable human musical development, and this is where we begin to find something musical with which we can relate.

Around 15,000 BC the first people arrived in North America. They crossed the frozen Sea, and low land levels from Asia to the North West tip of America. We have proof from 8000 BC of these nomads settling, and hunting large animals, from there paintings.

There is no mystical reason for man moving to lower ground, and settling around rivers and valleys at this time in history. It is quite simple to understand if we tie it in with the geographical changes of that age. The earth was changing due to the recession of the polar caps, and the ending of the Ice Age, around 10,000 BC.

Water was becoming scarce so Man, as did the animals that he fed upon, sought out water, and obviously the rivers and lower lands on earth were where he settled and became organised. This

domesticity extended to his social life as well as agriculture, farming and animal husbandry.

So if we look at the development of music we see that music travelled with our early Man to his, now, comfortable homes and settlements. Be it in Peru, India, Egypt on the River Nile, or Sumeria, which nestled between the rivers Euphrates and Tigris. These two particular rivers flowed into the Persian Gulf and from looking at old maps it was indeed an Eden.

Between 9000 and 5000 BC was the Jomon period in Japan. Here we have evidence of organised villages with fishermen and hunters. So it's safe to say that things were coming together from around 9000 BC. By 8000 BC the town of Jordan had a population of about 2000 people. In America the people started to spread out over the plains and gradually adopt a more settled life. Around 6000 BC farmers are had settled in Crete and some of the islands in the Aegean Sea.

Another way of tying some of this together is that Copper was first found about 11,000 BC, and it has been found on Greek and Egyptian musical instruments from 9000 BC. This suggests that practical use of the horn and cane was now, by becoming more decorative and ornate, being used for performing more ritualistic, if not religious tasks.

Our next real evidence comes along from between 7,000 and 9,000 years BC from the Neolithic site at Jiahu in the Henen province of China. Again they are flutes, but this time they are in perfect, playable condition, so we are in a position to discern the musical notes. These are also made from bone and most of them have seven holes, and there is even a smaller hole next to the last hole to correct an off-pitch note. This tells that the players of these instruments weren't just making a noise they were listening and comparing intonation.

As these flutes have seven notes it suggests the awareness of a span of an octave by both the maker and player. The notes that these bone flutes produce have been ascertained as A, B, C, D, F#,

and A, and A, B, C, D, E, and A#, playing from highest hole to the lowest hole in both instances.

Of course things were happening elsewhere in the world. Its only fair to observe that man, in general, had a natural global inquisitiveness.

We can ascertain a few definite facts this far into our search.

The flute could only have been preceded by percussion instruments, but this cannot be substantiated, as in the case of the drum the skins would rot or in the case of stringed instruments the gut strings would rot, and the finer woodwork would decay very quickly. The existence of percussion has to be obvious, early man had to have some form of stick to paint on the cave walls with, so he was no stranger to having an implement of some kind in his hand. He would naturally have banged it in tempo, even if it were accidental.

There is evidence that stalactites and stalactites were tapped upon. Marks have been found to prove this, and the differing thickness of them would have given off different notes. Every baby has an inherent rhythmical tapping, as would our pre-historic baby. Maybe the adult's name was a grunt or a snort. In comparing his name with the grunt or snort of another he would hear the different sound, a different pitch. He would have heard animal's roars and screeches so from the very beginning of time there was 'music' to play with, and listen to, and compare. At that time he had stones and rocks and bones that may have been sharpened by accident or on purpose.

His voice would come in grunts but he would have been aware of its power and possibly, I suppose, some sort of variance of pitch.

The flutes are made of bone, horn or cane and that relates directly to the region of the earth where they were found, and the musical instruments would be related to the animals that were available to him.

We can prove that the progress of man was universal by pipes called Antaras, or Zamponas that have been found in the Andes, in Peru. These have also been dated at around 7,000 BC. The same

age for the Peruvian pipes as for the Chinese flutes, with no global communication, only natural human inquisitiveness and creativity. Now we can assume that through these first couple of thousand years man's development was solely the wind instrument, this has to be logical when we think of the availability of bone and cane. All of this, so far, seems to fit in very comfortably with the logical development of man's music, but as a guitarist and banjo player, I am very interested in the next step.

We know from the flutes that have been found that man had some idea of what sounded pleasant to him, and he seemed to have an idea of an organised musical structure. The proof is in the position of the holes on the flutes, and the intervals of the notes that he had positioned, so how did our string instrument develop?

As I write this I have found that there is a new excavation site in China, and they are claiming the oldest plucked stringed instruments. They are three Konghous dating back over 3000 years. Is that BC?

But where do the truths begin and the tourist attractions end?

I also find that the 'Lyre of Ur' dates back to 2600 to 2400 BC?

But beware of 3000 years old and 2600 BC. There is an overall difference of 2000 years between today and BC!

Now it becomes interesting. The first bow and arrow is dated at around 9000 BC and was found in Ur in Samaria. Ur was a leading city of Samaria in old Mesopotamia, that Eden that I have just mentioned, and from around 2000 BC onward the neighbouring tribe, the Amorites, gradually began wiping out the peaceful Sumerians.

We have photos of a Lyre, the Golden Lyre of UR. Look it up on the Internet. The instrument is in such perfect condition that a team of scientists and musicologists plan to build a playable replica.

The earliest mention of a Harp is 3000 BC, and it comes from, again, Mesopotamia, and at 3500 BC there is the first mention of the Lyre of Egypt.

So now we are getting somewhere, especially as the long and the short bow had been in use as weapons for 6000 years before that.

There in lies the key to the plucked string, and the obvious, notable difference between the higher notes of the short bow, and the deeper notes of the long bow.

Now we have proof that if the bow is dated at 9000 BC and our stringed instruments came along after it this all seems to fit in. The bow led to the stringed instrument. What we have to find out is this, did the bow evolve at the same time all over the world.

The oldest bows to be found (so far) are from the late Palaeolithic period and were found north of Hamburg, Germany. They date from 9000 BC. The arrows were 15-20 cm long with flat tips. Another bow found in a swamp in Denmark was 1.50 m long

After a quick round up of the facts we have these; the first pipes can be dated safely from 9000 BC, but we mustn't discount the Mastodon tusk of 50,000 BC which seems more convincing than the Slovenian pipe of the same date, to me.

The certified playable pipes from Japan, one of them made from the bone of a Crane; date back from 7000 to 9000 BC. These are not only in mint condition and complete, but we can ascertain their tunings, and they are playable enough to confirm the intonation.

And finally the stringed instrument, the Chordophone, shows up around 3500 BC.

The drum, the Membranophone, is strangely recent in its arrival considering early man must have been banging on hollow logs for thousands of years.

The earliest drum to be found was from 6000 BC, and yet again was found in Mesopotamia. The oldest cylindrical drum is from 3000 BC and was excavated from an Egyptian tomb. The Indian drum can be ascertained from 5000 BC, and there is evidence that the American Indians used drums about the same time.

So yet again we have the coincidental evolution and a logical progression of our basic musical instruments. And not to leave out the South American relations, there are also cave drawings in Peru from about this time depicting drummers.

The drum seems to have evolved primarily as a religious instrument, although in India, the touching of animal skin was prohibited by religion, so although drummers were looked down upon they obviously necessary.

So our proof for the drum seems to centre on the same time as our stringed instruments, around 4000 BC.

My interest now lies in what I can find about the tuning of the stringed instruments and their place in society. We now know that the first stringed instrument was a form of the Harp and then, for ease of mobility, the natural progression was to the Lyres, the Chordophones.

The very idea that more than one string at a time is available to the player means that he must have experimented with polyphony, be it a drone string or a two-note chord. The oldest Lyre-Harp was found in Ur in Sumeria, and dates from 2800 BC and the oldest reference the Harp comes from Mesopotamia and Egypt dated at 3000 BC.

The gap in between the bow and the Harp being some 6000 years can be assumed as a form of gestation period. Man must have played around with his bow, and somebody somewhere must have tried to put another string on his bow, even if it was as a joke, but the final results lie in what we have before us from the year 3000 BC, the musical Harp and Lyre.

Now I went on to find out more about the life, and musical times of our stringed ancestors.

It was around 3500 BC that the wheel was invented, and around 3300 BC a form of writing known as Cuneiform was developing. This was all happening in Sumer in southern Mesopotamia. The area was fertile and the people developed a tight community spirit, and they were obviously highly intelligent and inquisitive.

In Europe, copper had been worked in the Balkans, this was around 4000BC, and around 3000 BC temples and stone circles were being built in Europe. Man was getting organised.

By 3000 BC, in the Americas, corn had been around for a thousand years, Llamas were used as pack animals in Peru, and pottery was in use in Ecuador. Hunters known as the Cochise were living in the South West part of North America. And in 3100 BC the civilisation along the Nile had grown and developed as the great Upper and Lower Egypt. We can assume that along with their advanced engineering skills, the tombs and the pyramids paralleled their social life, which would have included music and dance, as is proven in their wall paintings.

Now comes a sudden rush of musical instruments. It is obvious to all that the development of Man was manifold. His agricultural skills and communication skills matched the development of all of his senses. Hearing and appreciation of tonal music grew with him. From single grunts to phrases that would have led to rhythms and short recognisable melodies, maybe in a name form or a signal from one man to the other, or one tribe to another.

Along with the use of metals, and a growing knowledge of tuning, came a form of Horn that was used in China around 2000 BC, the same in Egypt around 1500 BC, and in Scandinavia around 1000 BC. Things were really racing along now.

One obvious consideration now has to be the Trade Routes.

One of the oldest is the Silk Route, which was mapped out as early as 140 BC. This journey could sometimes take years. It ran from China through India, Mesopotamia, Egypt and as far as Northern Africa. So it is no wonder that the music and different forms of musical instruments would travel with the caravans.

The Silk Route is thought to be one of the oldest routes but like everything else that we have looked at, man was developing, world wide, at the same pace. If a King was to remain rich his county would have to have an income, so he would encourage trading with other countries, with whatever his country had to offer, be it silk, rice, animal skins or trinkets. There were other overland routes throughout Europe and throughout the Arab countries. And of course the trade routes by sea were just as important. These would

take the Arab traders, and of course their music, along the Mediterranean coast to Morocco and down as far as Senegambia, and south past Persia and into the Indian Ocean and on to Zanzibar. It is no wonder that at the turn of the 20thc there were musical instruments in Arabia that were identical to those in Sumatra, India, Morocco and West Africa.

But we must go back for a few pieces of final proof, the proof that we are searching for, to position our stringed instrument in its place in history.

The oldest piece of music ever found (so far) is written using in a phonetic style, it comprises of named notes and it's dated at around 2600 BC. And need I say? Was found in Sumer, in Sumeria, Sumer in Sumeria was the lower Eastern section of Mesopotamia, lying near the river Tigris as it runs in the Persian Gulf. Looking at the area you can see that to the right is northern India to the left is, the now, Holy land and Egypt, and just to the north lays the Caspian Sea and the lower steppes of the Ukraine, and as I have previously noted, the end of the soon to be utilised Silk Route running from China. Sumeria, the centre of the world!

The oldest musical notation is in Cuneiform and is made up of two ascending, consecutive heptatonic scales, and was meant to be played on a four string lute tuned in ascending fifths; C, D, G, A. And using frets, dated 2000-1700 BC.

And now to our oldest group on record, written, not aural. It is in the form of a cylindrical stamp that was found in Choghamish, near Dezful City, Persia, and it depicts a harpist and a drummer, and it is dated at 5000 BC

So our irrefutable evidence so far is this,

First flutes, possibly 50,000 BC from Slovenia.

First authenticated, and playable flutes are from Peru and China 7000-9000 BC.

First Bows (and arrows) appeared around 9000 BC, China and India.

First Harp and Drummer, Samaria, Mesopotamia, 5000 BC.

First Harp wall drawings, Egyptian 2800 BC.

The first preserved Guitar-like instrument belonged to Har-Mose, and is dated at 1500 BC. It was fretted, had three strings, and when it was found, the original plectrum was still hanging from the headstock on a piece of string!

Of course the important phrasing that is bandied around here is 'guitar-like', but we do have authentic Lyres going back to 3600 BC.

All of these date-spans are huge. They look small on paper, but the actual time that elapsed between the first bow and our first stringed instrument is something like 5000 years. But as I have said, Man was developing in all areas at the same rate. He was first a semi-civilised social person, then he became a farmer, and from then on he graduated to a form of self-education.

Here is a basic 'rule of thumb' that I came across, and I think if we stick to it we can now work our way forwards.

5000 BC saw crude musical instruments.

By 4000 BC there were Harps and Flutes in Egypt.

3500 BC saw the arrival of the Lyre and Double Clarinet. The clarinet-type instrument also seems logical because the reed of the woodwind instrument is exactly that, a reed. And again, the accidental equation falls into place along with the development of the bamboo flute.

Around 2000 BC we saw the arrival of Percussion instruments, and around 800 BC we have the earliest known piece of written music in the form of a Hymn, written in Cuneiform on a tablet found in Samaria

The first organised music was the Modes, for more information on them I refer you to my article on the subject at this website, safe to say that we can only deduce the music of the age by the instruments that we have discovered. The flutes give us some indication of scales that were used, in old Persia they were partial to a scale of, D, E, F#, G, A, B. which is identical to scales of that

time found in Japan and Greece. So yet again it proves that we were all developing at the same rate, give or take a semi-tone.

But the intervals don't matter at the moment, I'm happy that they were playing melodies and were aware of intonation.

There still crops up the odd artefact that throws things off tilt a bit, like the 5000 BC stamp from Persia that depicts a Harpist and a Drummer, or an ancient, the oldest so far, piece of music from the Syrian city of Ugarit. It has a melody and harmony, and is made from a diatonic scale, and is dated at 1500 BC.

Remember that when we see the word 'diatonic' in reference to a scale the suggestion is merely that there are a couple of semi-tone intervals somewhere. Firstly, the position of the semi-tones could be anywhere, and secondly, the distance between the actual intervals within the scale could, literally, be anything. When we go back this far in time it's a good idea to forget the regular spacing of the notes on our Guitar, Banjo or in fact Lute.

The first time the Modes were organised and regulated was by Pythagoras, this is where my interest began, remember?

This was around 450 BC. He proved a standard of intonation by using mathematics. This would later be corrected to give us something more logical and aurally acceptable.

In the beginning there were four Modes. Two gave a major sound and two a minor sound. I don't think that was on purpose, I think it just sounded nice. After all, the importance of the third interval had not been recognised yet, and with the semi-tone displacement within the modes, the third intervals were not in the right place to differentiate between a minor chord and a major chord. No, they just sounded nice, plus, the considered religious and medical values of music made the melodic aspect somewhat secondary, or to be accurate, thirdly!

We can now safely wander through the first few hundred years of the 20<sup>th</sup> century. We had stringed instruments all over the world by now, from the Balalaika of the Russia's, the Oud of the Arabs, the

Kithara and Bouzouki of Greece, the Sitar and the Bin (some say the oldest of instruments of Asia) of India, and the beautiful Chinese Pipa with its short neck and its 26 bamboo frets glued to the table of the instrument.

Stringed instruments had been carried by the first traders along their routes, from the great Silk Route from China to North Africa and by the Arabs along the Mediterranean coast to Morocco, and then down to the West Coast of Africa, giving the African man the original Banjo, and various new percussion instruments.

Of course England had a part to play in all of this development with the Holy Crusaders (1096-1270) bringing back stringed instruments like the Lute. It is considered that the Guitar was not the descendant of the Lute but the Lute was definitely a predecessor.

A good remark and logical observation has been made that as the Moors brought the Arab Lute with them when they invaded Spain, it could hardly have been the favourite instrument of the conquered country. Remember the word Lute is a mispronunciation of the Arabic word for the instrument, al Oud.

Of course the strings were mainly gut (twisted and dried sheep intestines) but by the 13th century there were wire strings. This would help the problem of volume, but I'm sure they would have pulled the instruments of the day to bits with the added string tension.

The favourite direct ancestor of the guitar has to be the Cittern. One was recently up for auction at Christies, and it was in fact called, even in its day, an 'English Guitar', and was dated at c1760. It went, by the way, for \$3000.

Looking at the pictures of Citterns I can see why people are so convinced about its position in the growth of the classical guitar, as we know it.

Of course I feel that the correct path to take when resolving the conundrum, that is the metamorphosis to the six-stringed instrument we call the guitar, is to look at the stringing itself.

By the Baroque period we still hadn't got away from the, at least, multi-coursed instrument, the doubled strings. The doubled strings sometimes tuned in unison or in octaves, the Mexican version of this could well be the predecessor of our modern day 12-string guitar.

It wasn't until after 1750 that we ended up with what we know today as the 'six stringed guitar'.

Over the thousands of years we have always had strings, frets, some were tied across the neck, and some were glued onto the body, and we still had a sound hole, but my final quest was for the very first six-string guitar, and I think I've found it!

It sits in a room in Stockholm at the Musikhistoriska Museet and the label on it reads, 'Gio, Battista fabricatore An 1791 in S.M. del Ajuto, Napoli'. It sits there with measuring rules next to it for comparing dimensions, and seems so fragile that it cannot be touched, but there it is.

The stringed instruments of the years preceding this guitar would more than likely have been more for decorative purposes than for the ardent, diligent musician, hence, practically none have survived down the years. The plain ones constructed for the studious musician, the instruments of sturdiness and high quality, would obviously not have been as popular with players and audiences alike, so they were never produced in such numbers as to have survived and to be in evidence today.

And finally to Antonio Torres who, around 1850 standardised the dimensions of our present day Spanish guitar. He positioned the internal fan struts to enhance the tonal quality of the instrument, and was the first guitar maker to use geared machine heads. In fact in 1856 he was winning international awards for his efforts.

Our written music has followed us successfully. From about 1150 we committed our compositions to paper in a form of tablature, and by 1550, when the diatonic Ionian mode had prevailed the other eleven inharmonious modes, we could write our music down for the Lutenists of the day, and the Guitarists of today.

Of course there were still hic-cups with the tuning of the instrument but it was all sorted out by the time John Dowland came along, around 1563 -1626. By 1887 Washburn were making Parlour guitars and very soon Martin and Gibson would follow. The classical guitar was the most important, but by 1915 the Dreadnought and Jumbos of today were being played by rhythm guitarists in the jazz bands, and competing quite strongly with the Banjo. But the Banjo would hold its own for many years by virtue of its sheer volume.

And so here we are. The Thirties gave us Charlie Christian, and Gibson were making wonderful electric jazz guitars but we needed the Gibson Les Paul to totally combat feedback.

Nowadays we have all sorts of weird and wonderful shapes, but think back, there were some pretty weird and wonderful shapes around in 4000 BC. We've got the cave drawings and clay tablets to prove it!

And if you want, there's always the wonderful Internet to surf and find the actual pictures.

When teaching I always refer to the guitar as 'a block of wood with six strings, it's up to you to get a tune out of it!'

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