

Melody of the *Beautiful flute 5-Sun-Life*, by Nancy Rumbel

Roberto Velázquez Cabrera
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Figure 1. *Beautiful flute 5-Sun-Life*. Registration No. P.F. 2040-1.

On Thursday May 29, 2014, I had the pleasure of attending the concert [New Mexico Age Fest in Metropoliano Theatre](#), at the invitation of [Nancy Rumbel](#). She was winner of “GRAMMY Award winning recording artist, composer, performer and teacher”. Since 1985, she is one of the best known international performer of the double ocarina.

For over a decade, we met electronically, but it's the first time I heard live her beautiful, deep and sweets ocarina, oboe and English horn, playing with great skill and masterly sounds a duet with guitarist [Eric Tingstad](#), for 28 years.

I had the opportunity, the honor and pleasure of meeting Nancy in person, before and after the concert (Fig. 2) and chat with her live and all day Saturday 31, from a vegetarian breakfast, and then at home. I could show her my collection of experimental models of resonators of wind and listen and record other sweet melodies of her fine double wooden ocarinas that were made by [Alan Albright](#), also known for some time, and others of their builders. She took many pictures and videos of my experimental models of mexican resonators. It felt very excited to meet them and touch them because they are not well known, even in our country.



Figure 2. With Nancy at the backstage of the Metropolitan Theater.
Photo: Martin Casillas Fernández del Valle.

Taking advantage of her great musical experience as a composer and performer of ocarinas, I asked if she could play the [Beautiful flute 5-Sun-Life](#) (Fig. 1), for the first time to record some of its melodies by a professional well recognized internationally. She did it with style and ease, without prior practice. The resulting sounds are beautiful, with a little timber and reed type and style of the region of Central Asia or North Africa. The spectral frequencies of a short melody, which can be heard on [mp3](#), are shown in Figure 3, without filtering. Variations of the fundamental frequency (F0) or musical tone in yellow, with the amount of harmonics generated in red and maroon are observed.

Being able to listen and record the beautiful sounds of the flute played by Nancy, with her special style was magical. She was able to revive mexican melodious sounds from a millennium, at least. Unfortunately, for 5 centuries, [mexican sounds were banned and abandoned](#). Recently, [they were officially rejected for publication on paper](#).

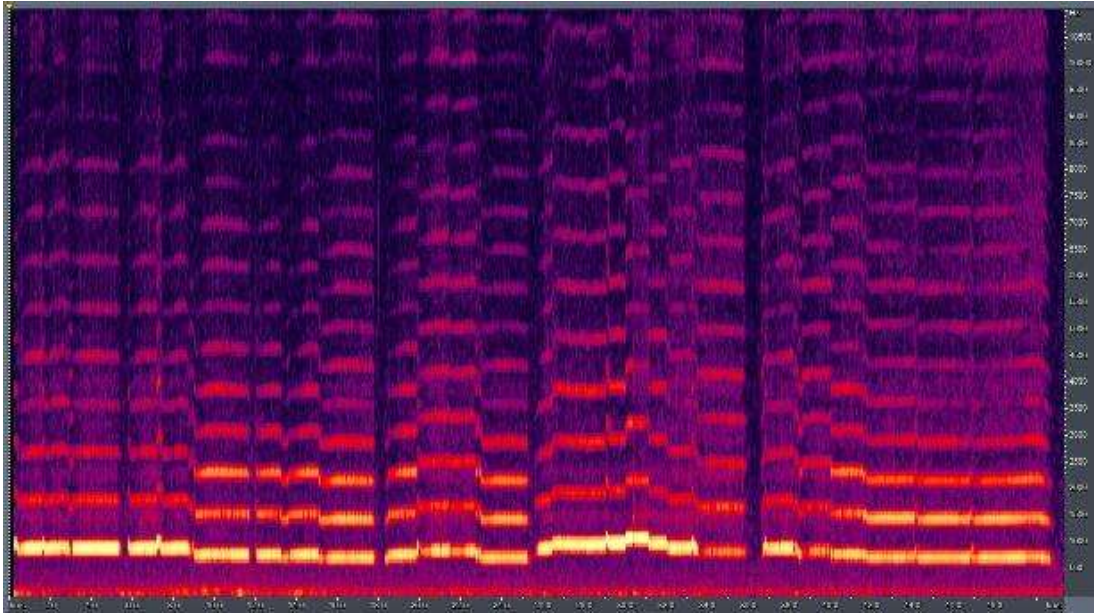


Figure 3. Spectrogram of a tune from the *Beautiful flute 5-Sol-Life*, by Nancy Rumbel.

Since 2009, I had analyzed the [sounds of the flute](#). Blowing it hard, six basic sounds are generated with an F0 of approximately 700, 755, 830, 900, 980 and 1070 Hz. [F0 graph](#) is similar to that of actual tempered scale with A4 = 440 Hz. If the axis scale is logarithmic frequencies to apply the inverse transformation to the audible perception of humans, the steps of the spectral frequencies fretwork of [basic sounds are the same profile and resemble pyramids of some important sites as Teotihuacan](#), when viewed from the front. [Distances and F0 were fitted well to generate a decreasing second degree function](#), with the method of least squares, the type $Y = ax^2 + bx + c$, where $Y = F0$ generated (in Hz) and $x =$ distance to the tonal holes (in cm). The resulting fitting parameters were the constant. $37.7 a = b = -667$ and $c = 2901$. Stairs can also be generated in the space of frequencies, the famous call [Xicalcolihqui or stepped fret](#), which appears in monuments as those of Mitla, and similar to those of Tajín and Tula, if the end touching the ladder ascending series of notes is repeated immediately as shown in color. Had already been performed and recorded a [short melody](#), but does not compare to that of Nancy. Had also used the [large amount of harmonics generated sound across the audible range](#), to more than 20 kHz.

Javier Hinojosa (deceased), former professor of Early Music and Paleography of the National Conservatory of Music of México, after seeing the flute and hear [their sounds](#) said:

"The flute is a priceless treasure. It is not a toy. You are very lucky to have that flute. Sounds are very delicate, sweet and velvety. They were probably for intimate ceremonies, probably duels or love, or sleep in baby's crib. The little noise you hear when the flute blows hard could be intentional or desired. Much importance not has small variations of the notes, as the tuning systems have changed and a good flute player can produce different sounds and changing the way blowing intensity. When I told him that investigators commented that the flute could not be old, in spite of the

scientific evidence and techniques that was confirmed, he said". Temporality does it matter if it is very beautiful"

Her sister, Maria de la Luz Hinojosa, also a music teacher, helped with her educated ear and electric piano (tuned with LA4 = 440 Hz), to determine the variations in height (pitch) of the notes produced when the flute is blown smooth and strong, and found that when sounds are passed to a bit of *piano* to *forte*, go up to about a semitone. [Generated notes were written on lined paper.](#)

Nancy joined us for lunch at home with my wife. We were able to enjoy her finesse, simplicity and kindness. We gave two of his published discs, to remember and to enjoy her performances. They were two extraordinary days, with useful experiences and pleasant retreats, not very common in our country, like another world. I have known very few professionals who deeply appreciate the mexican sound technology, as Nancy.

She also appreciates the sounds of the birds, which troubles even survive in the wild that has been devastated. She said that at 4 am on Friday 30, went to hear the beautiful sounds that still sing at dawn, in Toluca National Park.

To our guest, the meeting was also important at home and friendly as electronically sent several comments like these:

Dear Roberto!

What a magical day! I felt like I left the planet and went into whistle world with a Master!

It was such a pleasure getting to know you, learn so much more about your amazing work and spending time with you and Carmen at your wonderful home. The meal was so delicious and I loved hearing Carmen playing the piano - especially the Mexican waltzes.

A day like today was beyond special. There are no words to thank you enough-inspiring, emotional, insightful and so very powerful. Fun and waaaaay too! Wow! I am so very happy.

I just Looked at a few of the photos and wanted to send you a quick one! Once I get to my computer I will send you more.

That I hope I will be able to figure out some ways to help you and your amazing work.

Thank you so much for the wonderful gift of the (Mayan) bird whistle¹ and Gulf Coast single man!² I am so honored to have

¹ It is a replica of a Mayan bird-shaped whistle rescued by Luis Alberto Matos in Rancho Ina, Xcaret, Quintana Roo (C91-E100).

one of your instruments. I am beyond thrilled. Please tell your friends how happy I am to have found a reproduction in exactly the right key to - amazing!

I still cannot believe that I played on an original aerophone! That was so generous of you to let me play it. I am deeply honored you allowed me that privilege. I cannot tell you how many times when i am in a museum that I have wanted to blow on the instruments! If only I could get my hands and lips on them! Hahaha!

I was able to hear the audio samples of recorded that you and your ancient aerophone they turned out quite well! I should have taken those gloves off though, as I would have been able to feel the holes of the instrument much better - next time!

I want to edit some of the extremely short video that I took of you - I Should Have really done more. Someday I would like to do a film about you with my son! Let me know if you are interested! I think that I was soooo extremely overwhelmed with the entire experience of what I was seeing, hearing and learning that I was in an ethereal shock :)

We are enjoying beautiful weather here in Seattle and the birds in my yard are quite happy. I have taken the wonderful whistle that you gave to me and talked with them! I bet they will wonder who I am!

This beautiful corn ocarina that you made :) * Is this a reproduction or original Roberto? It involved so much detail and I do not remember what you said about it!

With so much Gratitude,

Nancy

* This model was built as a corn cob to show that animated mexican beings, who were highly revered in the remote past and are surviving with difficulties, can sing well done with our ancient clay, in this case, the very thin type "Oaxaca" was used (Fig. 4). It also goes to show that based on the extraordinary mexican sound designs can recreate or revive a unique and extraordinary production technology industry lost and forgotten.

² The [beautiful model](#) already traveled and went to live with Nancy to Seattle. It is a globular double flute or resonator of Mario and Gregorio Cortez brothers from Texcoco, who are the best known builders of the mexican clay singer. The original "double flute anthropomorphic" was published by Samuel Marti in his book *Instrumentos musicales precortesianos*. 1968. P. 184. Collection of *Stavnhagen*.



Fig.4. "Ocarina"³ shaped corn cob and 6 pitch holes. Photo: Nancy Rumbel. It was decorated with Mexican POLITEC acrylic paint⁴.

Nancy marveled, because she could know models of extraordinary resonators of Ancient Mexico as: [flutes with groove and continuous sounds glissando type](#), which were drawn by the genius of Leonardo da Vinci, but not incorporated into western music; other extraordinary, who also photographed and played not exist in other regions of the world, as [the mexican noise generators](#), which have not even been incorporated into existing systems of classification of musical instruments or acoustic devises; [those with membrane to produce sounds or nasal timber](#); or can generate [infrasonic beats with special effects in the brain](#); [maya trumpets](#) that disappeared with them, and; many other with beautiful and special sounds, like [the beautiful clay frogs of Yaxchilan](#).

This letter was submitted as other justification example of [citizen requests](#) raised since 2001, to "establish effective policies and programs for research, rescue and promote the rich mexican culture and technologies, such as the sonorous one", but unfortunately continues. It prefers to invest in fields and programs in which they cannot even compete successfully internationally, as when imported technology is used or to competitors more developed (as in soccer) and not on what there is not much competition abroad, as mexican sound technology that is singular.

³ They say the ocarina was invented (it was adapted to Western music) by Giuseppe Donati in Budrio, Italy, in 1870. Millennia before, globular resonators already existed and were used in our continent. The history of the ocarina is included in the site of its current best builder [Fabio Menaglio](#).

⁴ Very few know that acrylic paint, which since the middle of last century, is the best available in the world for his artistic versatility, and was invented at the National Polytechnic Institute, at the initiative of painter José Gutiérrez (deceased) who also industrialized it with as POLITEC. It was widely used by the best Mexican muralists, as David Alfaro Siqueiros, and from abroad who lived and worked in Mexico and loved the Mexican culture, as Arnold Belkin. The discovery was announced in several publications: José Gutiérrez, *From the fresco to plastics*, The National Gallery of Canada, Ottawa, 1956. José Gutiérrez and Nicholas Roukes, *Painting with acrilics*, Watson Guptil, New York, 1960. José Gutiérrez. *Del fresco a los materiales plásticos*. IPN y Editorial DOMES, México, 1986.

This letter of Nancy, also served to complement the studies of the PF flute 2040-1. The M.Sc. Angel Ramirez Luna, Laboratory Technician in Charge [Thermoluminescence](#) (TL) of the Institute of Geophysics of the UNAM — who had already taken the test of TL Flute PF 2040-1 with the [opinion of AUTHENTIC](#), of August 24, 2012 — is helping to make [other non-destructive tests of authenticity](#), by Dr. José Luis Rubalcaba Sil of [Laboratory Van de Graaff Accelerator](#), Institute of Physics UNAM same. Hopefully soon these additional tests can be performed, so that the results can be known in the [IV Latin American Congress of Archaeometry](#).

In 2010, already had obtained the [material characterization of the flute](#), with scientific techniques of electronic microscopy, at the Center for Nanoscience Micro and Nanotechnology (CNMN), IPN.

It is important to check with additional scientific evidence formal and official authentication of the flute. If it is recognized that old, would defeat current beliefs about the European origin of the current scales of melodic music. Demonstrate that centuries earlier, in Ancient Mexico were those musical tastes and technological knowledge necessary to generate them. If recent, indicate that it existed after, but no artisans are known that can generate similar flutes, or found other archaeological or ethnological flute, of similar type, quality and beauty.

Nancy was very interested in studies on rhythms of the first recordings found and suggested that the investigators, as Edward S. Curtis, who recorded 10000 wax cylinders of 80 *The American Indian tribes*. Already I made two exercises of some audio tracks that were found openly [Recordings of Edward S. Curtis](#) and [Rhythms of War Dance Song](#).

Feedbacks in English

[Alan Albright](#) sent the following e_mail:

¡Gracias, Maestro!

Great to see you and Nancy collaborating!

For many years I had the pleasure to meet electronically Ian Mursell of [Mexicolore**](#). On 2010 we had the wonderful experience to meet him at home. He also could know and take pictures of my experimental models of the extraordinary resonators of Ancient Mexico and gave me a sound recorder! He published in his web site the first paper in English on the singular [Death Whistle](#).



Ian Mursell and Graciela Sanchez

He sent the following e_mail:

Dear Roberto and Nancy,

To my shame I have only just found time to read – both in your original Spanish and in your excellent English version! - the little article you wrote on the couple of days you spent together at the end of May. It makes moving reading, and I only wish I could have been there at the same time to share the – clearly wonderful – experience you had. 'Magical' is not a word to use lightly, but it seems most appropriate for this occasion! The brief time I spent with Roberto and Carmen back in 2010 was equally magical.

I can only hope we might have the opportunity, before too long, to meet together to learn, laugh, play and have fun together.

Reading your article, Roberto, inspires me to prepare more resources for the Mexicolore website incorporating some of the ideas and materials of which you are a master. I look forward very much to collaborating with you both in the future. Now that finally this heavy teaching term is coming to a close (mid-July) I will have more time to put thoughts and ideas together, which I will, with your permission, share with you...

A big hug to you both! MANY thanks for sharing!

Every good wish,

Ian

Ian Mursell

Mexicolore, London

** Mexicolore ('Mexico - the Lore of the Land') was set up in 1980 by Graciela Sánchez, for many years a professional dancer with the world famous Ballet Folklórico de México company, and Ian Mursell, an audio-visual consultant and development education specialist...Between them they have created a unique team which has worked for over 30 years in partnership with the Museum of Mankind, the British Museum, the Royal Academy of Arts, the BBC, over 2,000 primary schools the length and breadth of England, and a wealth of institutions, groups and individuals seeking to learn from Mexico's culture and people. If you would like to call on their expertise, please phone Mexicolore on +44 (0)20 7622 9577.