the emissions and absorptions of human waves concerns the fact that living tissues of every type and species, emit and absorb electromagnetic radiation at very precise frequencies and wavelengths, such as, for example, for mitogenic radiation, and here we are speaking of musical scales in respect to biological spectra. This radiation thus corresponds to 42 octaves higher than an F equal to 341 Hz with 200 nanometers.

But coming back to our human DNA, which is the key substance for all of the vital processes of a cell, we can say that it has a wavelength of between 263 and 269 nanometers and, more specifically, the "average frequency of this band" corresponds to a wavelength of 265 nanometers, which is the precise value of the 42nd octave above the frequency of 256.64 cycles per second.

In this manner, we can affirm, until there is some contrary proof, that the first vital step of all of molecular biology is tuned to a middle C, which corresponds precisely to the fateful number of 256, equal to a semitone in nuclear physics.

False notes represent diseases

This result is equal in both the helix, or DNA (alpha), and the ribonucleic protein, RNA. All of this brings us to think about the musicality of the genesis and the course of life, and that the "singer," in all of his expression, has a natural tuning with his DNA, an inseparable part of himself, which, combining itself with all of the other cellular aggregates in the physiological state, have their engraved mark: 256. If perchance these data were modified, we would find ourselves confronted with a part of pathological processes, both acute and invasive, where the decadence of the cells would be such that their components would go crazy, each playing their own false notes, which represent diseases of every type.

In that case, only an induced cellular reeducation, not musical, but chemical, through the input of new DNA and RNA and through the electrolytic environment, could bring back the lost harmony and repair the broken "tuning-fork" to hear it again with the physiological state at the sound of 256.

Let's give an example: Conducting a magnetic resonance or computer tomography, we would see that the subjects who showed alarming results, and must be completely demented because they had the cerebral cortex reduced to the minimum; however, strangely, they could recite verses by memory or make extraordinary calculations, thus demonstrating that they have a very lively psychic life.

For a second group of patients, who apparently had a complete brain, the responses with our equipment showed a completely destroyed mental life. What does all of this mean?

It can be explained with a simile: that of a sailboat. That is, that the report between the brain, or hull, and the neurons, the neuroglia (the peripheral nervous system), are the sails, which can be enormous, even with multiple sections, but the speed at which the boat travels depends only on the wind that blows in its sails, and this is the mystery of life.

In fact, the cerebral nervous cell doesn't regenerate itself: We have it from birth until the end, but we can intervene in this as part of the larger nervous system, taking from it irritating elements that stimulate the wind that pushes our boat in a negative manner, trying not to put stress on its sail and trying to keep the DNA equal to the 256 tuning alive; in this way, we can better understand the two examples that I cited earlier. The first group of patients subjected to our investigations, despite having a cortex reduced to the minimum, responded psychologically better than the second group, with the wider cortex, but with mental activity almost completely destroyed, because the first had an optimal pack or spare reserve of DNA, and of all the other chemical elements of a healthy cell, while the second had a scary impoverishment of those vital resources, despite having a beautiful boat, that didn't, however, move on the water.

The number of cerebral cells isn't important if they are altered, but the type is important, the quality of their primary component for all of the vital exchanges, in order that this strange wind that we said earlier is the "mystery of life," allows us to continue to travel harmonically with our imaginary boat.

Another satisfaction, and I'll close with this, would be to see future doctors no longer using their stethoscopes, but instead the "auricular tuning-fork," and maybe carry out "musical ecographs" to check if the tuning of the various organs of their patients responds with 256, and 256, and 256! Just think of what an orchestra the hospital would be!

How tuning affects musical instruments

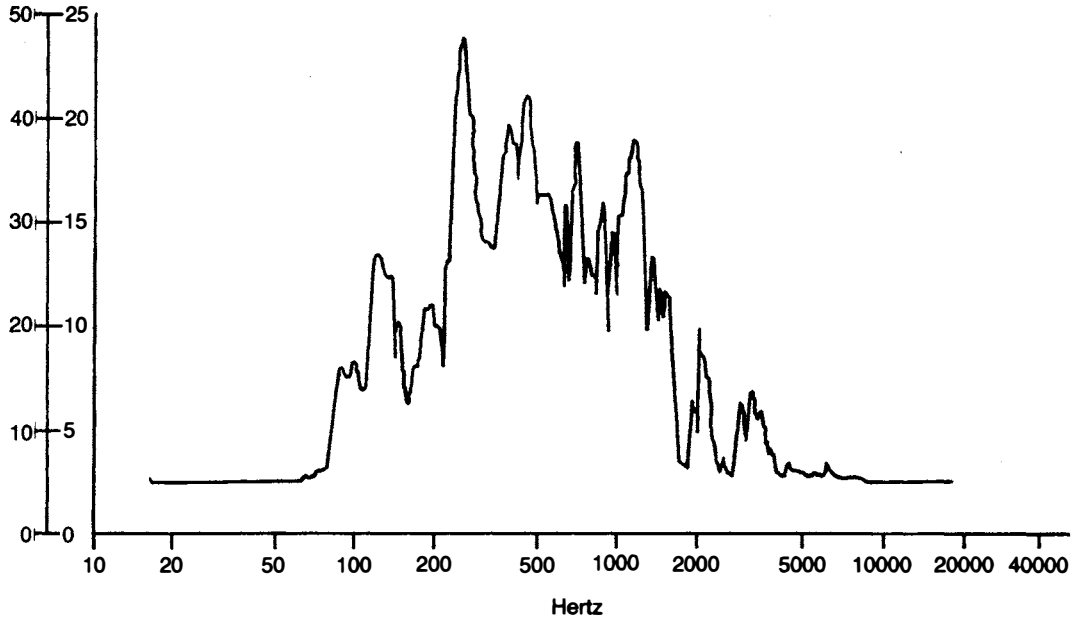
by Bruno Barosi

Prof. Bruno Barosi is a physicist with the International Institute for Violin Building (Cremona), where in 1988 an experiment on the tuning of Norbert Brainin's "Omobonus Stradivarius" violin was made, proving that it was built for a C= 256 tuning. He spoke at the Milan presentation, held at the Casa Verdi *on May 29:*

The question of high tuning is very important also for Stradivarius violins and for the performance of violin music. In the nineteenth century, the original Stradivarius violin was changed, its neck and fingerboard lengthened in order to adapt to the higher tuning. There is only one Stradivarius intrument which has remained untouched, and it is the so-called "Medici viola" kept in Florence, which we of the Cremona Violin

FIGURE 1

The spectrographic profile of the 'Omobono' Stradivarius violin



This logarithmic graph shows the point of maximum sonority of the "Omobono" Stradivarius violin, which occurs around C=256 Hertz. This figure is taken from an article by Professor Barosi in EIR, *Sept. 29, 1989, titled "The Geometric Secret of Stradivarius."*

Building School studied in order to track down the original tuning of Stradivarius string instruments, and established that it was built for a tuning between 428 and 432 Hz. If you bring the tuning of string instruments up to 440, or even 448 as it is often the case today, this means that the neck cannot be lengthened any more, because this would change the fingering, and you can only increase the pressure on the strings, leaving the total balance of the violin unaltered. However, the increased pressure on the strings does increase the curving of the violin. A Stradivarius violin weighs 237 grams. You can imagine what the effect on it is of an increased pressure on the strings, equalling up to 43 kilograms, while the pressure exercised over the bridge is between 7 or 8 kg, even 9 if tuning is very high. In this case, the structure and curving of the violin varies a few millimeters in respect to a violin tuned to A=432 Hz.

The violin is not a resonance box, it is a coupler (*accoppiatore*) between the strings and the air around it. Its performance, so powerful, so beautiful, is due to the ratio between internal volume and external surface. If this ratio varies, the violin loses its vibrating faculties.

The beauty of its sound, its timbre, depends on its first six overtones. The discovery we made with Brainin's Stradivarius in Cremona proved that such a violin does play tuned at A=440: It was a Stradivarius, and it was played by Brainin, so it did play well. But when we tuned the violin down to A= 432 Hz, which means loosening its strings, not only did the intensity of the sound increase, but also the number of even-numbered overtones.

In the second volume of the "music manual," on instruments, maybe you will see the graph of the harmonic performance of Brainin's violin during this experiment. Modern violins instead have a strident sound, and an average life of 15-20 years. Think of the average life of a Stradivarius violin: One of the latest was built in 1735, and still plays beautifully.

We applied this discovery, made in the physical-acoustical laboratory of the Violin Building School, also to voices, comparing the various vowels (a-e-i-o-u): At the frequency of A=432 (Verdi's tuning), you can observe an harmonic spectrum which is the closest to "perfection." The timbre coefficient depends on the two main overtones divided by the sum of their squares, and it equals one when two sums are equal among them. This equation is possible only with A= 432, and this goes not only for Italian vowels, because we have students at the Cremona International Violin School from all over the world. As a matter of fact, we found out that the vowels closest to the Italian are the Chinese ones.

We also made an experiment with ancient oboes, and it proved the same: tuned to A=432, the oboe is the closest instrument to the human voice. This is what I can tell you as a physicist. I can only add my compliments to soprano Antonella Banaudi, and confirm that when she sang at A= 432, one could hear both vowels and consonants much better.