

Bioresonance and Phytotherapeutic Hydrosols in Healing

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Part I – The Basis

1. Introduction

The concept of bioresonance (the sympathetic resonance of biological molecules in living systems) as an aspect of energy medicine has been elucidated in related scientific journals. However, insights into the application of this concept with respect to hydrosols (the water based fraction produced during the distillation of herbal medicinal plants) and their healing mechanisms are new and now being explored.

Bioponic Phytoceuticals is a pioneer in the discovery and development of a new natural healing modality called “bioresonant phytotherapeutic hydrosols”. This healing methodology lies somewhere between homeopathy and herbal tinctures. It utilizes the process of tuned sympathetic bioresonance which is produced in the molecular memory of condensed water molecules, entrained with the phytochemical signature of the distilled herbal plant. This establishes a bioresonant harmonic matrix within the hydrosol, which in turn provides healing through optimum bioavailability.

Hydrodistillation is the process whereby the essential molecular structure of medicinal plant material is extracted utilizing a still (flask and condenser apparatus). The plant material is heated and the resulting vaporous steam is captured, condensed and collected. Typically this process is used to produce an essential oil (that separates from the distillate as an oily fraction) as is the case with aromatic plant material. However, the carrier medium in the distillation process is water or the hydrosol (water solution), which can also be used to extract the molecular constituents of non-aromatic medicinal plants.

2. Phytotherapy

Phytotherapy specifically looks at medicinal plants, which are used as well-defined extracts for specific illnesses. The extracts from medicinal plants are considered to be effective due to a mixture of active ingredients rather than a single constituent. It is the oldest form of medicine and it is still the most commonly used type of medicine in the world today.

Many of the earliest surviving written texts, including the Egyptian Ebers Papyrus and several ancient Chinese documents, are essentially lists of herbs with their medicinal uses. The great names in the medicine of antiquity such as Hippocrates, Dioscorides, Avicenna and Galen were all herbalists. The materia medica of conventional medicine was, until as late as the 1930s, largely plant-based and botany was still part of the undergraduate curriculum in some medical schools until the mid-twentieth century.

In the 1930s the introduction of new drugs, particularly antibiotics and corticosteroids, combined with improvements in surgical techniques, heralded a new age of modern scientific medicine, and herbal medicine was largely eclipsed. It remains true nonetheless that around 25% of contemporary drugs are derived originally from plants.

The recent history of herbal medicine has reflected social trends, coupled with the increasing demand for effective treatments for common chronic disorders that are perceived as being both safe and natural. There has, in fact, been a renaissance in herbal medicine over the last 20 years demonstrated by a huge rise in demand for over-the-counter herbal products and a corresponding dramatic increase in the training and numbers of herbal practitioners. Herbal medicine is now renewing itself and gradually moving back to mainstream medicine.

3. Hydrosols

Essential oils and hydrosols used for medicinal, pharmacological, and cosmetic purposes have been dated as being used in Egypt over 6,000 years ago. Ancient Vedic Hindus vaporized floral and herbal oils to soften the skin, sooth the mind, and normalize various glandular activities. The Aztecs enjoyed saunas whose steam carried fragrant floral and herbal vapors from small pools of stone and hot water. Hippocrates described the curative effect of more than 300 plants.

When plants are distilled to release their essential oils another substance also occurs - the hydrosol. This is the water from the steam or hydrodistillation that comes into the receiver or separation funnel. Typically, in modern commercial production, the essential oils that rise to the surface are skimmed off and the hydrosol is discarded as waste or cohobated (recycled) back to the source solution . However, the hydrosol contains the water soluble or hydrophilic (water-loving) components of the plant and is a powerful therapeutic agent in its own right.

Briefly, the hydrodistillation process is as follows: The plant material (called the charge) and water are placed in a still. Heat is applied to the still or alembic. The heat and warming water gradually breaks down the cell structure that holds the medicinal constituents. The water turns to steam, carrying along with it the now-released phytochemicals, which are in a vapor form. The vapor collects on the inner surface of the condenser, which is cooled with recirculating cold water. The condensation aggregates by gravity in the condenser, then flows into the container called the receiver. This product is known as the water solution or hydrosol.

Hydrosols are naturally occurring substances with an endless variety of uses. These herbal medicinal waters are distilled from a wide range of flowers, roots, leaves, barks, resins, or from fruits (whole or rinds).

The distillation components form an azeotropic mixture with oil-rich and water-rich layers. During hydrodistillation the herbal material is exposed to temperatures close to 100°C, which can lead to changes in 'thermolabile' components. Prolonged heating in contact with water can lead to hydrolysis of esters, polymerisation of aldehydes, or decomposition of other components.

When absorbed, the hydrosols work with and stimulate the body's natural healing system. They help the body return to normalcy by supporting and acting as a natural stabilizing agent for the body's immune system. In this way, hydrosols are able to work therapeutically on the symptoms as well as the cause of the illness.

The hydrosol contains the hydrophilic compounds, primarily acids, from the plant. Noted author Jeanne Rose is quoted as saying "The best hydrosol comes from a distillation where it is the

hydrosol that is being produced rather than the essential oil...As the plants are being distilled, micro-particles of essential oil are in suspension; they give the aromatic distillate its scent and will separate out as the hydrosol cools. There is approximately .02% essential oil in a hydrosol".

Clinically, the chemical components in the hydrosol are primarily acids, which are hydrophilic (water loving). The hydrosol acts as a healing anti-inflammatory and mild, but therapeutic antiseptic. Bacteria do not live well in acidic environments, which is why acidic liquids such as vinegar make good preservatives for food items. Acidic environments are astringent and so the hydrosols are useful in skin care products as astringents constrict and contract the tissues. Hydrosols can be used externally in skin care products, internally as a douche, or taken as a tonic.

Essential oils themselves are powerful forces for health but they are extremely concentrated. In many cases the essential oil is too strong to use either internally or directly on the skin and may be considered an irritant. Hydrosols are nearly free of irritating components such as the terpene hydrocarbons, and certain hydrosols are so gentle that they are used in the eyes as treatments for allergies. They can be used extensively and without fear of over dosage.

During distillation, both the chemistry of the essential oil and the chemistry of the hydrosol are continually changing. Just as there are chemotypes of essential oils, so there are parallel chemotypes of hydrosols. The hydrosol, the essential oil and the plant extract may all have different properties. An herbal extract may have certain therapeutic properties and uses, while the hydrosol of the same herb or the essential oil of the same herb may have entirely different properties. Hydrosol therapy is just now being birthed as a complementary alternative medicinal (CAM) modality.

4. Bioresonance

It is well known that there are fields and energies attendant to the physical body. These energies range from those related to the charged electron fields of atoms and molecules comprising the material body, to the aggregate bioelectric field, which surrounds the body (often called the "aura"). Various cultures have explained these fields/energies and their movements as the Meridians of Chinese Acupuncture, the Chakras of Yoga and the bioresonance of Energy Medicine. Biophysics studies the living cell as a whole system with electrical fields that interrelate and penetrate the entire organism.

Resonance is the vibration that is specific to the frequency oscillations generated by all kinetic forms of energy. A struck guitar string, for example, will resonate at a specific frequency. The vibratory energy of that specific frequency will start in motion a nearby string that is tuned to the same frequency. Resonance, therefore, is able to communicate and transmit frequency information from one guitar string to another. The principle of sympathetic resonance states that if there are two similar objects, and one of them is vibrating, the other will begin to vibrate as well, even if they are not touching. In the same way that a sound wave can induce resonance in a crystal glass. Vibration between two objects can be seen in everyday life, from a tuning fork to an opera singer used to break a glass. In this instance the musical tone sets the glass into motion,

and that motion builds until the glass shatters. Bio-mechanical resonance is created when a small periodic stimulus of the same natural vibration period of a cell, tissue, or even a molecule, is used to produce a large amplitude vibration of the cell, tissue, or molecule.

Biophysicists view the body as an interconnected bio-energetic organism. The key to understanding bioresonance lies in understanding the fact that all vital processes in the organism are influenced and controlled by electromagnetic oscillations. These electromagnetic oscillations are superordinate to the biochemical processes and control them. Cell associations (symplasms) and organs oscillate in particular frequency ranges. An oscillation spectrum thus arises in the organism.

Disease can be considered the disturbance of biochemical sequences in biological systems, and can be regarded as a disturbance to the order of electromagnetic oscillations in the body, triggered by exogenous and endogenous influences. It is at the energetic and vibrational level that the physical processes shape the transfer of energy and the flow of bio-energetic information in the living system.

Part II – The Underlying Science

1. Quantum Theory in Biophysics

Matter is now known as a manifestation of energy. Biochemical processes in the organism have a component in the domain of the photons, that is the quanta of electromagnetic waves. All nuclear particles have the dual nature of also being waveforms. Subatomic particles, photons, protons, and electrons, etc., have the dual characteristic of existing as both particles and waveforms. Subatomic particles vibrate at different rates or frequencies based in part on changes in temperature and thermodynamics. In their waveform state, quantum particles emit a frequency vibration that extends indefinitely. In this state, subatomic particles are present in all space in what is known as superposition. In the superposition state, they are also in contact with every other subatomic particle in the universe. This interconnection provides a superhighway of information transfer between all of the building blocks of our universe, including our own body.

This interconnected web of energy acts like a holographic plate from which our physical body takes shape. Our cells are also connected to this sea of subatomic energy. It is known that cells receive, store, and emit quantum packets of light - photons (Popp). From a biological standpoint the term "bio-photon" is more appropriate. Electrons also absorb and emit photons, which is why the electron rich DNA is a storage house for biophotons. It is now thought that the unique vibratory rate of each biophoton is what activates specific gene sequencing through what is known as resonance. The vibratory energy of biophotons are able to induce responses in other biophotons - within the same cell and without to neighboring cells - in fact, throughout the entire organism.

The cell acts as the interface between the quantum superposition state and the particle state. In the superposition waveform state all of the possibilities of physical manifestation are present. It is the quantum measuring apparatus of the cell that forces the collapse of the superposition state into the particle state. DNA, RNA, ribosomes, and mitochondria are all proton, electron and photon level apparatuses. Photons have the ability to knock electrons out of their atomic and molecular orbits. They are able to direct electrons to where they are needed to run metabolic processes. Enzymes capture and transfer electrons and protons along a path to various protein molecules in order to activate each protein's specific function.

In the quantum world, all of the exponential numbers of amino acid combinations exist simultaneously. It is the interface at the enzyme level between the quantum realm and the physical that accounts for how enzymes can single out the exact targeted amino acid chain from the infinite possibilities that is needed at the precise needed moment.

Dr. Stuart Hameroff has suggested that the microtubules of the human cell, which move in mysterious, rhythmic ways - dissolving and reappearing, yet structurally active in the contractile mechanism of the cell membrane - should be considered as bio-resonators (Stephen Linsteadt, N.D. and Jorge Llamas, M.D 2002).

There are several other quantum-measuring devices within the living cell. The motion and placement of electrons and protons within DNA initiate gene expression. Another example is how single protons are battered across membranes to power the molecular turbine engines of mitochondrial respiration.

The quantum level possesses the highest level of coherence within the human organism. Sick individuals with weak immune systems or cancer have poor and chaotic coherence with disturbed biophoton cellular communication. Therefore, disease can be seen as the result of disturbances on the cellular level that act to distort the cell's quantum perspective. This causes electrons to become misplaced in protein molecules and metabolic processes become derailed as a result. Once cellular metabolism is compromised the cell becomes isolated from the regulated process of natural growth control.

2. The Biophysical Continuum

Cell and molecular biologists have made a profound discovery that is accelerating our comprehension of life at the level of whole systems. Previous images of the organism - as being built up parts - have concealed the most significant attribute of living matter; its continuity. The major structural and functional domains of the body are the connective tissues, the cells within them, and the exoskeletons, nuclei and genetic material within the cells. We now have precise and detailed pictures of the interconnectedness of these domains and the assembly is best described by a single word, continuum. Structural and functional continuity has now been confirmed and appreciated by science. Continuity in living systems is simultaneously mechanical, structural, regulatory, and energetic. A second key to the emerging concepts has come about from recognition of the crystalline properties of living tissues. Molecular arrays of crystals are the dominant structural feature of living matter.

Crystallographic techniques such as X-ray diffraction have been essential for determining the structure of nerves, muscles, cell membranes, and connective tissues. From the biophysical perspective, molecular arrays or crystals cannot be described in terms of their constituents alone. Crystals have important vibratory characteristics that arise as collective properties of the whole system. When a crystal is broken into its constituents, these unique vibratory phenomena disappear.

The human body is an electromagnetic field that can transmit and receive electromagnetic oscillations. The energy patterns of the body can also be altered whether it is favorable or unfavorable (such as illness or radiation). The human body emits different oscillations: cells, tissues and organs each have their specific oscillations. These oscillations together form the total oscillation spectrum of the body.

In sick people, the oscillation of foreign substances, like amalgam, bacteria and pesticides that are stored in the body, interfere with a person's oscillation image. Sick organs do not oscillate harmoniously. It is also possible to determine and eliminate problems with the oscillations of other substances (such as substances that the body has allergic reaction to) or to determine whether childhood illnesses that have been suppressed with antibiotics are still a serious stress for the body.

3. Molecular Bioresonance

Only when a therapeutic impulse goes into resonance with the human body in a specific way is it possible for it to have the intended healing effect. The oscillation of allergens, pesticides, etc. can also be brought into resonance.

Some chemical molecules cannot be satisfactorily described by a single configuration of bonded atoms. The theory of resonance is concerned with the representation of such molecules by a dynamic combination of several structures, rather than by any one of them alone. The molecule is then conceived as 'resonating' among the several conceivable/describable structures and is said to be a 'resonance hybrid' of them. The classic example is the benzene molecule with 6 carbon atoms linked together in a ring. This is one of the basic features of many larger molecules essential to life.

Bioresonance provides the mechanism for electron communication and interaction that is the catalyst for all biochemical processes. Resonant frequencies travel through the body along cell membranes, through bi-polar water molecule chains, along protein chains, through the electrolyte rich connective tissue reaching every nook and corner of the body. The communication pathways are the critical junctions in determining the quality of information transfer.

4. The Homeopathic Model

Electromagnetic bioinformation can be picked up and transferred by bioresonance. An example is the high potency of homeopathic medication in which no molecules remain from the original tincture. This success can only be attributed to the stored information.

The discoverer of Homeopathy, Samuel Hahnemann's two ideas of the law of similars (matching the Simillimum to the disease) and potentisation, form what could possibly have been the very first hypothesis regarding the principle of resonance.

Hahnemann's discovery potentisation (dilution and succussion) came about because of his background in chemistry. He began to experiment with the preparation of remedies and discovered that they became more effective if they were diluted and succussed (shaken). The fact that the more diluted they were, the less molecular substance remained, caused him to conclude that the succussion must transmit some form of energy of the original substance to the water/alcohol mixture in which it was diluted.

Hahnemann's conclusion that some form of energy can be transmitted from the original substance to the substrate (where no molecular substance remains) has been interpreted by Gerber (1988) as the homeopathic remedies being "subtle-energy medicines which contain the energetic frequency or 'vibrational signature' of the plant from which they have been prepared."

He believes that homeopathic remedies are able to deliver needed quantum of subtle energy to the human system through a type of resonance induction. In other words, what Hahnemann may

have been doing without realizing it was matching the frequency of the plant or mineral extract with the frequency of the illness.

Gerber is not alone in this idea of resonance theory. Rubik (1995) takes this one step further and suggests that homeopathic remedies store electromagnetic frequencies that are released in the organism where they produce resonance – the homeopathic remedy, therefore, possibly transferring information and not energy. This is not a new theory as it is widely accepted that DNA stores genetic information and that other biomolecules transfer signals within the cell. Horb (1993) supports this view when he states that “biochemical processes in the organism always have a component in the domain of the photons, that is the quanta and electromagnetic waves. It can therefore be readily explained that the organism at this level supplies us with information, which is not available to us chemically, but only by electronic means. From this point of view disease, the disturbance of biochemical sequences in biological systems, can be regarded as a disturbance to the order of electromagnetic oscillations in the body, triggered by exogenous and endogenous influences.”

Withoukias (1980) talks of an intelligent vital force animating the human organism and also suggests that this vital force may be a field similar or analogous to the electromagnetic field. He considers this electromagnetic field of the human body as its “dynamic plane” and that to directly affect this dynamic plane, a substance must be found that is similar enough to the frequency of the dynamic plane to produce resonance. He reasons that since a person’s defense mechanism can only be seen by the symptoms and signs that are produced by disease, then we must find a substance which can produce in the human organism a similar totality of symptoms and signs. “If a substance is capable of producing a similar symptom picture in a health organism, then the likelihood of its vibration rate being close to the resultant frequency of the diseased organism is good, and therefore a powerful strengthening of the defense mechanism can occur – through the principle of resonance.”

Homeopathic preparations of high potency are also of high dilution. Using both spectroscopy and signal analysis, the frequencies of the original extract are easily detected at dilutions where none of the original extracted compound is present. This cannot be explained on the basis of pure substance-related thinking, as a homeopathic high potency preparation accordingly ought not to contain anything other than water and ethyl alcohol. This is not the case as homeopathic preparations of high dilution also contain photons and phonons. Thus, in addition to mass, there is an incalculable quantity of information. In homeopathic therapy the preparation (at homeopathic high potencies only the information of the preparation) resonates with the resonators of the body.

All of the above theories of resonance and transference of information reiterate what Hahnemann postulated almost 200 years ago. However, it is his hypothesis of the subtle energy qualities of water that defines the basic principle underlying the bioresonant theory. Although the basic physical properties of water have been known by modern scientists, it is only recently that any work has been done on its subtle energy.

5. The Hydrodynamics of Water

Water is the most abundant substance on the surface of the earth, and is the main constituent of all living organisms. The human body is about 65 percent water by weight, with some tissues such as the brain and the lung containing nearly 80 percent. The water in our body is almost completely tied up with proteins, DNA and other macromolecules in a liquid crystalline matrix that enables our body to work in a remarkably coherent and coordinated way.

The water molecule consists of an oxygen atom bonded to two hydrogen atoms (H₂O). The water molecule has the shape of a tetrahedron, a three-dimensional triangle. The oxygen atom sits in the heart of the tetrahedron, the hydrogen atoms point at two of the four corners and two electron clouds point to the remaining opposite corners. The clouds of negative charge result from the atomic structures of oxygen and hydrogen and the way they combine in the water molecule.

Oxygen has eight negatively charged electrons disposed around its positively charged nucleus rather like layers of the onion, two in the inner shell and six in an outer shell. The inner shell's capacity is filled, but the outer shell can hold as many as eight. Hydrogen has only one electron, so oxygen, by combining with two hydrogen atoms, completes its outer electron shell. The hydrogen's electron is slightly more attracted to the oxygen nucleus than its own nucleus, which makes the water molecule polar, and it ends up with two clouds of slightly negative charge around the oxygen atom, and its two hydrogen atoms are left with slightly positive charges.

When water is in liquid form, its weak hydrogen bonds are about one-twentieth as strong as a covalent bond. Hydrogen bonds constantly form and break. Each hydrogen bond lasts for a fraction of a second, but the molecules continuously form new bonds with other water molecules around them. At any time a large percentage of water molecules are bonded to neighboring water molecules which gives water more structure than most other liquids. Collectively, the hydrogen bonds hold water together by the property of cohesion.

The positively charged hydrogen of each water molecule can attract the negatively charged oxygen of another, giving rise to a hydrogen bond (H-bond) between molecules. Each molecule of water can form four H-bonds, two between the hydrogen atoms and the oxygen atoms of two other molecules, and two between its oxygen atom and two hydrogen atoms of other molecules. Ice is usually composed of a lattice of water molecules arranged with perfect tetrahedral geometry. In liquid water, however, the structure can be quite random and irregular. The actual number of H-bonds per liquid water molecule ranges from three to six, with an average of about 4.5. At ordinary temperatures, liquid water consists of dynamic clusters of 50 to 100 water molecules, in which the H-bonds are constantly making and breaking (or flickering). The tetrahedral H-bonded molecule also gives water a loosely packed structure compared with that of most other liquids, such as oils or liquid nitrogen.

A. Water - the Medium of Life

The importance of water to living processes derives not only from its ability to form hydrogen bonds with other water molecules, but also especially from its capacity to interact with various

types of biological molecules. Because of its polar nature, water readily interacts with other polar and charged molecules such as acids, salts, sugars and various regions of proteins and DNA. As a result of these interactions, water can dissolve those substances, which are consequently described as hydrophilic (water loving). In contrast water does not interact well with nonpolar molecules such as fats, oil and water don't mix. Nonpolar molecules are hydrophobic (water fearing).

Hydrophobic interactions in water are very important for protein folding, because the chain folds so as to keep the hydrophobic parts inside, and expose the hydrophilic parts on the surfaces next to water. Proteins only work when they are folded properly and when there is water around, when they become 'plasticised' or flexible.

The properties of water and its interactions with proteins and DNA have been extensively studied using molecular dynamic simulations. These computer simulations follow the motions of populations of molecules according to interactions between atoms within the molecules and between molecules. Molecular dynamic simulations show that while polar molecules such as urea form hydrogen bonds with water and dissolve in it, water molecules either don't mix at all with nonpolar substances such as fat and oil, or tend to form a cage around the molecules.

These simulations also show that water is integral to the structure and function of all macromolecules. Early attempts to create molecular dynamics of models of DNA failed because repulsive forces between the negatively charged phosphate groups in the DNA backbone cause the molecule to break up after only 50 picoseconds. (The 50 picoseconds are in terms of real time as experienced by the DNA, and would have taken hours, if not days of computer time.) In the late 1980s, Levitt and Miriam Hirshberg showed that when water molecules were included, the DNA double-helical structure was stabilized by the water molecules forming hydrogen bonds with the phosphate groups. Subsequent simulations showed that water interacts with nearly every part of the DNA's double helix, including the base pairs.

B. Water as a Resonant Medium

Water emits oscillations that are measurable from zero through Megahertz. This frequency spectrum is also a physical copy of the geometrical structure of water, and changes itself in a characteristic manner. One can spectroscopically read the life processes of water. Thus differs the photon (light quantum) spectrum of poisoned water very clearly from the spectrum of living quality water.

The resonance properties of water change as soon as it comes in contact with heavy metals such as lead, cadmium, etc. Everything that water comes in contact with is remembered through the storing of these frequencies, which seem to be transferred to the water upon contact. Even after double distillation, the information left by pollutants, being the transferable electromagnetic vibrations, can be detected in the water molecules through photon spectral analysis.

The understanding of sinusoidal mathematics and the ability of waves to nest or form harmonics are paramount to a complete understanding of this. A standing waveform nesting with another wave is said to be in phase. The points of interaction are known as nodes. This can be seen in

water, which is the closest manifestation of waveform in the world of matter. The share, or phase, is called crystalline-liquid, since it possesses a very high relationship to the crystal formation process. Whereas the energetic bonds in the normal-liquid non-orderly state are very weak, the intermolecular forces in the crystalline-liquid part have considerable energies.

These intermolecular bonds are called the hydrogen bonds (or bridges). They occur in extremely polar molecules such as water. The combination of several such bonds result in an infinite number of possible shapes of the crystalline-liquid phase of water rightly called a very complex lattice system. This lattice system has as many vibrations as a harp and produces a great number of its own frequencies. It is the varying way in which water relates or bonds to itself that creates water's pleomorphic nature.

Water is integral to the liquid crystalline structure of living organisms. The liquid crystalline structure of organisms holds the key to rapid intercommunication within the organism and the perfect co-ordination of living processes.

C. Water as an Information Store

The body being 65% water and the brain consisting of 80% water suggests that water plays a larger role in the function of living systems, which is reflected in recent writings considering water the platform and director of a natural energy sphere. The ability of a cell to maintain structure is possible only when the water composing the cell parts consist of a certain relationship of frequencies that allow the cell wall to maintain a relatively static nature. It is this folded, interlaced quality that some researchers believe is paramount in the functioning of molecular memory.

The organization of protein and lipid chains in space has a mirror in the water. Water is a polar molecule (as is ethyl alcohol); it has positive and negative charges separated by a dipole length and thus an electric dipole. The electronegativity of the oxygen atom attracts the electron of the hydrogen molecule. Thus the region about the oxygen is negative compared to that around the hydrogen atoms. Thus, water molecules mutually attract one another due to their (-) and (+) regions. Individual water molecules are linked by these hydrogen bonds and form what are called clusters. Water has the capacity to align into 400-500 layers ("Cells, Gels and the Engines of Life", Gerald H. Pollack). At body temperature, there are about 300-400 water molecules cross-linked into a cluster. It is known from electronics that different patterns, which contain information, result within a cluster depending upon its structure. An example is gamma-iron used for the recording of information in digital form. Thus, depending on its structure, each molecule has an oscillatory pattern, which can be determined by spectroscopy. Both water and ethyl alcohol can be entrained to oscillatory patterns by rearranging their cluster patterns, which persist through time. This entrainment can also be determined by spectroscopy.

Sound for example cannot be weighed, but no one disputes that ultrasound has an effect on the body or that music can alter a person's mood. What matters is not how high the sound level is, but to what extent the conveyed information or the signal resonates or coincides with the resonator.

Lastly, when water is boiled or evaporates, it loses its ability to retain information. It then acquires the information in the environment in which it finds itself upon cooling. Thus, the rainy weather we receive is a means of replenishing local information stores of the environment we inhabit.

D. Quantum Water

While most physicists and biochemists are still trying to understand the interactions of water molecules in terms of classical mechanics, a number of physicists have begun to think of the quantum properties of water.

Conventionally, quantum properties are thought to belong to elementary particles of less than 10-10m, while the macroscopic world of our everyday life is 'classical', in that things in it behave according to Newton's laws of motion. Between the macroscopic classical world and the microscopic quantum world is the mesoscopic domain, where the distinction is getting increasingly blurred. Indeed, physicists are discovering quantum properties in large collections of atoms and molecules in the nano-meter to micrometer range, particularly when the molecules are packed closely together in the liquid phase.

Recently, chemists have made the surprising discovery that molecules form clusters that increase in size with dilution. These clusters measure several micrometers in diameter. The increase in size occurs nonlinearly with dilution and it depends on history, flying in the face of classical chemistry. Indeed, there is as yet no explanation for the phenomenon. It may well be another reflection of the strangeness of water that depends on its quantum properties.

In the mid-1990s, quantum physicists Del Giudice and Preparata and other colleagues in University of Milan, in Italy, argued that quantum coherent domains measuring 100nm in diameter could arise in pure water. They show how the collective vibrations of the water molecules in the coherent domain eventually become phase-locked to the fluctuations of the global electromagnetic field. In this way, long-lasting, stable oscillations could be maintained in the water.

One way in which 'memory' might be stored in water is through the excitation of long-lasting coherent oscillations specific to the substances dissolved in water. Interaction of water molecules with other molecules changes the collective structure of water, which would in turn determine the specific coherent oscillations that will develop. If these become stabilized and maintained by phase coupling between the global field and the excited molecules, then, even when the dissolved substances are diluted away, the water may still carry the coherent oscillations that can 'seed' other volumes of water on dilution.

The discovery that dissolved substances form increasingly large clusters is compatible with the existence of a coherent field in water that can transmit attractive resonance between the molecules when the oscillations are in phase, leading to clumping in dilute solutions. As the cluster of molecules increases in size, its electromagnetic signature is correspondingly amplified, reinforcing the coherent oscillations carried by the water.

6. Resonance - the Principle of Life

Resonance between oscillating particles is a primordial principle in the Cosmos. Man is able to "see" only a very small part of the entire electromagnetic spectrum as visible light. The word "resonance" comes from the Latin meaning "sounding back", "co-oscillating" and "reverberating".

In electronics, information is emitted from a transmitter to a receiver. Only if the receiver is tuned to the same frequency of the transmitter can the information be perceived. The receiver must resonate at the same frequency as the transmitter. These same phenomena occur with the interactions of molecules and photons in all matter. Thus, the phenomenon of resonance can be observed in the complete range of natural sciences and has a special significance in medicine.

Homeopathic preparations have an analogy in acoustics. If one lifts the damper off the strings on a piano and sings a note out loud, the string, which is in exact resonance with the sung note, will resonate with it. In exactly the same manner, in the human body the resonator, which is in resonance with the oscillation of an administered medicine responds. A resonator is an acoustic, mechanical, electromagnetic or biological system whose individual parts are tuned to a particular frequency and on being excited by a signal with this precise frequency starts to oscillate, i.e., resonate with the signal.

7. Signal Transport in Living Systems

Solitons are waves, which move like particles along a conductor. An example is the ocean wave, which moves through the water-air interface without dissipating much of its energy and reverberates around the globe for an extended time without losing its shape. This is in part due to the physical arrangement of the water molecules at the interface. This arrangement of water molecules is due to hydrogen bonding between the relatively (+) hydrogens and the relatively (-) oxygen atoms. Thus the normal "liquid crystal" effect of the hydrogen bonding in water is greatly accentuated and strengthened at the water-air interface. This strengthened bonding arrangement of molecules is quite linear and accounts for the high surface tension of water.

In living systems, such waves occur along protein and lipid chains, and more importantly, along the membrane bilayer architecture of cellular components. The same hydrogen bonding interactions, which occur at very small distances between molecules, are found in protein and lipid molecules between the relatively (+) hydrogens and the relatively(-) regions of the molecules. In addition to these, van der Waal's forces (which also occur at very small distances between molecules) between the various (+) and (-) regions of the molecules contribute to the overall effect of coherence. In solids, forces of coherence hold substances together. If the solid is crushed, the structure can not be restored by simply pushing the components together. The distance of the fracture point is too great and too coarse. In proteins and lipids, these compounds separate and combine many times a second with impunity. This is a natural state and phenomenon. Their coherence is due to the overall structure of the molecules in space, and the interactions of the hydrogen bonds and the van der Waal's forces, which the linear structure of the molecule imparts. This allows both fluidity and coherence without rigidity.

The protein and lipid chain systems along which solitons move are comparable to the Lecher lines known from electrical engineering, named after the Austrian physicist E. Lecher (1856-1926). They consist of two wires run parallel in such a way that a high frequency voltage wave arises along the system between the wires. The wires have a natural frequency determined by their length. A similar system exists in the protein and lipid chains. If an external signal is allowed to act on the chain conductor, whose frequency coincides with the natural resonance of the chain, a resonance is produced and the chain passes the signal on. The relatively weak forces of coherence in the protein and lipid chains can be overcome by external forces. If the signal has too great a field strength, the coherence interactions in the proteins and lipids are interrupted at one or more places, and a block arises in the transporting properties of the chain conductor. The chains regain coherence but the signal is lost. The chain conductor can only pass on a resonant signal if the signal is of a field strength to cause resonance but not cause loss of coherence.

This precise range of coincidence of signal intensity and forces of coherence in the chains is known as the "Adey" window. R. Adey in California discovered in experiments on the brain cells of chicks that they respond not only selectively to a quite specific frequency (approximately 10 Hz) but do so only at a quite specific, very weak intensity. Weak signals are received and passed on with a positive effect by such a system while the signals which are too strong are not, they block themselves. This helps us to understand that the claim of "if strong signals are not effective, weak ones certainly cannot be" is incorrect for the systems considered here. This is an exceedingly crucial point to comprehend!

Electrically charged particles must be present in the conductors for it to be possible for electromagnetic waves to be passed on. In the case of tissue paths it is the electron pairs known as "Cooper Pairs". In the complex system of conductors in the organism, signals are able to travel along as particles like the solitons described above. In the case of superconduction in the protein and lipid chains, Cooper Pairs play a role with the two electrons oscillating in relation to one another while being passed along the electron cloud of the molecular structure. Solitons behave as scalar waves along the chains. Scalar waves are electro-acoustic waves. Since the electrons oscillate in relation to each other, they behave as sound waves with compression processes.

Electrons have opposite spins in such a system and as a result, the electromagnetic fields cancel each other out. They make it possible for signals to be passed on without interference frequencies, without thermal noise, i.e., superconduction. If a signal encounters a protein or lipid chain and does not break up the forces of coherence, it is passed on with the aid of these electrons and information is passed on as phase modulation.

Signal transport in living systems thus takes place in both the nervous system and in the protein and lipid chains in the tissues through the soliton effect, the frequency of which may lie in the range of light as shown by the research of Popp. Solitons propagate more slowly than sound in tissue, and thus can be distinguished from sound conduction by measurements. The velocity of nerve conduction has long been characterized. A block in conduction may be created in various ways: through external electromagnetic fields, through addition of harmful substances in the tissue or by scarification. Thus man can not be understood only in substantive terms, but must include such physical phenomena as photons, solitons, phonons, etc.

8. Cellular Resonance

A recent study conducted by Dr. Valerie Hunt at UCLA suggests that the human energy field is a result of cellular resonant energy release. Furthermore with cellular resonance, it is documented that the absorption spectra for DNA is 42 octaves above the C tone (C=256 Hz), with all living processes functioning at 42 octaves above the C=64 and the F above C=512

Frohlich argued that as organisms are made up of strongly dipolar molecules packed rather densely together (the 'solid state' cell), electric and elastic forces will constantly interact. Metabolic pumping will excite macromolecules such as proteins and nucleic acids, as well as cellular membranes (which typically have an enormous electric field of some 107V/m across them). The excited molecules/membranes will vibrate at various characteristic frequencies resulting from the coupling of electrical displacements to mechanical deformations. This eventually builds up into collective modes (coherent excitations) of both electromechanical oscillations (phonons, or sound waves in solid medium) and electromagnetic radiations (photons) that extend over macroscopic distances within the organism and perhaps also outside the organism. The emission of electromagnetic radiation from coherent lattice vibrations in a solid-state semi-conductor has recently been experimentally observed for the first time. The possibility thus arises that organisms may actually use electromagnetic radiations to communicate between cells or between different organisms.

If that is the case, then, organisms will be extremely sensitive to weak electromagnetic fields, perhaps through specific coherent excitations, or by interfering with coherent excitations at phase transition.

Part III – Conclusion

In the hydrodistillation process the selected herbal material (charge) will begin to breakdown in the menstruum (water solvent) as temperature and/or pressure increases. Prior to the point of vaporization, cellular structure disintegrates and the molecular constituents of the plant (both hydrophilic and hydrophobic) exude into the decoction and become bonded to the bipolar water molecules.

The menstruum transitions to a gaseous state as the thermocatalytic dynamic is reached. Each gaseous water molecule will carry only as much of the dissolved molecular constituent of the charge as is possible, based on the atomic molecular weight of the solution and the gaseous lift of the steam molecule.

Whereas the hydrophobic components in excess of saturation (such as the aromatic oils) will fractionalize in the separation funnel (decantation), a measurable percentage of the volatile components will stay in solution, stable and detectable. This gives the hydrosol its evident aroma and flavor which is characteristic of the source plant material.

Because of the balance of phytochemical structure to water molecules, the molecular constituents of the charge are intrinsically balanced in the hydrosol at a ratio that disperses potentially irritating phytochemicals thus providing optimum bioavailability.

Although the concentration of phytochemicals in the hydrosol are limited by the carrying capacity of the liquid/gas phase transition, its potency is a function of molecular memory. Memory of the phytochemical substance is stored in the hydrosol through the excitation of coherent oscillations specific to the medicinal plant material used. The molecular memory of the condensed water molecules are *entrained* with the phytochemical signature of the charge. This establishes a new bioresonant harmonic matrix within the clustered lattice of the hydrosol.

Bioresonance provides the mechanism for the hydrosols interaction, and is the catalyst for all biochemical processes. Resonant frequencies of the phytochemically entrained hydrosol travel through the body along cell membranes, through bi-polar water molecule chains, along protein chains, and through the electrolyte rich connective tissue, thus reaching every part of the body.

Hence, phytotherapeutic hydrosols are activated with the phytochemical signature of the herbal medicinal plant source. Thus, the hydrosol can effect systemic healing through tuned sympathetic bioresonance based on herbal medicinal protocols whose medicas have a long history of safe and effective use in human medicine.

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