

“WHEREAS 'HOMEOPATHY' IS THE 'SEED', 'DIALECTICAL HOMEOPATHY' IS THE EMERGING 'SEEDLING'- THAT MUCH SIMILAR, THAT MUCH DIFFERENT!”

DIALECTICAL HOMOEOPATHY

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“Homeopathy, as a specialized branch of modern molecular medicine, is the therapeutic technique of removing the the molecular blocks and relieving the biological molecules from pathologic inhibitions (curentur), by selectively capping and de-activating the interactive groups of pathogenic molecules, utilizing the three-dimensional complementary configurational affinity of the molecular imprints (potencies) of same or similar molecules(similimum)”

Re-Building Homeopathy- A Historical Mission

Time has come for a meaningful dialogue regarding the scope for a scientific re-reading and revising of the fundamental principles and methods of Homeopathy. A radical re-building of the whole system on a rational and scientific foundation is essential, emancipating this powerful therapeutic art from the clutches of unscientific, metaphysical and vitalistic ideologies. Modern physical sciences and technologies have evolved into such a state of maturity that we can now at least attempt with their help to provide a scientific and satisfactory explanation to the centuries-old mysteries and riddles associated with this wonderful therapeutic system. Such a fundamental re-building shall obviously help in enthroning homeopathy on its rightful status of the most advanced branch of modern medical science, unfairly denied for more than last two hundred years.

I would like to entitle this emerging scientific version as DIALECTICAL HOMEOPATHY, since this reclaiming is essentially achieved utilizing the theoretical tools of dialectical methodology. DIALECTICAL

HOMEOPATHY is basically an innovative and positive enhancement of classical Hahnemanian Homeopathy, and as such, may be considered as its 'dialectical negation' at large. Historically, it represents a qualitatively higher stage in the natural evolutionary growth and maturation of Homeopathy. 'Dialectical' also indicates its readiness to open up to new ideas, and engage in creative dialogue with other scientific disciplines. It advocates to discard all forms of dogmatism existing in homeopathy. Whereas 'Homeopathy' is the 'seed', 'Dialectical Homeopathy' is the emerging 'seedling'- that much similar, that much different.

In this modern era of scientific enlightenment and technological advance, we can no longer hope to proceed further ahead with Homeopathy, without the help of a well proven and universally acceptable scientific methodology. We can no longer hope to depend upon certain set of somewhat mysterious quotations and philosophical speculations inherited from our great masters. It is very important that Homeopathy has to be first of all dealt with as a subject of science, not as a religion or metaphysics. Essentially, the principles of Homeopathy have yet to achieve the right to be recognized as part of modern medical science. To begin with, it has to attain acceptability among the modern scientific community, at least in terms of a rational methodology and vocabulary.

Science is not a mere heap of lifeless and dry inflexible theories and dogmas. It is a live cognitive system, undergoing an endless process of self-renewal and growth. Science never celebrates the words of masters quoted out of context. It is the the sum total of the ideas enwrapped in the expressed words that really matter. It is the readiness on its part to prove its propositions on practical level, to imbibe new ideas, and to discard obsolete ones mercilessly, that makes science distinct from other intellectual activities. That is the touch-stone of scientific method. There is no water-tight compartments in the realm of science. Our approach to human knowledge should be dialectic, not dogmatic.

Human knowledge develops and unfolds itself through a never ending dialectic process of simultaneous assimilation and negation of history. It is impossible for anybody to proceed with his intellectual quest without drawing resources from the treasures of knowledge amassed by the by-gone generations. Obviously, no genius can totally overcome the objective limitations imposed upon him by the space-time context of his life and activities. Development of human knowledge should be perceived in relation

with this objective framework of historical evolution. Man knows today much more than he knew yesterday. Certainly he would know infinitely more tomorrow, than what he knows today. The knowledge of yesterdays, however great they might have been, were much incomplete than that of today. Tomorrow, human knowledge would be definitely more expansive and more comprehensive than that of today. The basis of scientific perspective of knowledge lies in realizing this fundamental truth.

We should never forget the objective historical context of 18th century Germany, where Samuel Hahnemann lived and developed his novel therapeutic system. Two hundred and more eventful years have passed since it happened. It is not to be seen as a sin to say that his thoughts and propositions were definitely confined by the limitations imposed by the infantile level of science and technology then existed there. Even though the the essence of the therapeutic principle he developed is capable of transcending the boundaries of centuries to come, it would be unfair to try to evaluate his achievements and contributions detached from his objective time-space framework.

Human knowledge has attained an ever greater maturity of more than two centuries, compared with the conditions that existed when Hahnemann lived. It is an undisputable fact that man now knows much more about the diverse phenomena of this universe than in the era of Hahnemann. Hahnemann had developed his ideas depending upon the existing knowledge about the universe available to him. Naturally it is bound to bear the limitations imposed by the objective historical and geographical context.

Obviously, modern science and its methodology were in its infancy in those days. Had he happened to live in this world 200 years later, the towering genius of Hahnemann would have presented to humanity a therapeutic system totally different, and much more advanced and scientific than what we now call Homeopathy. He would have definitely rewritten completely what we preach and practice in the name of Homeopathy today.

All these facts underlines the crucial relevance of a complete re-reading and reclaiming of the theory and practice of Homeopathy in conformity with modern scientific and historical context. Whenever we try to learn the teachings of Hahnemann, we should be on the look out to understand what he would have said about those subjects, if he were elaborating them in the modern context. We should not take his written words as if they were

ultimates, unquestionable and beyond any scope of further revisions and improvements. We should honour the great master by following his teachings as valuable guide to tread forward, and not as lifeless dogmas. This is the essence of dialectical methodology.

The theory and practice of Homeopathy has been always a matter of endless controversy, since its inception two hundred years ago. Representatives of the so-called 'official science' were always in a state of undeclared war against it. Rather than being hailed as a possible new medical breakthrough to give better health for all, it has been ridiculed, ignored and systematically suppressed through centuries. We repeatedly hear about 'successful' attempts by its opponents, to 'disprove' it 'scientifically', and time and again declaring it a 'fraud, placebo, or pseudoscience'. In spite of all these scorns, ridicules and 'witch hunts', Homeopathy still exists and thrives all over the continents, alleviating pain and sufferings of millions. The rising acceptance of Homeopathy not only by the millions of lay public, but by the heads of states, members of royal families and many other dignitaries all over the world, has produced a state of dilemma in the world of medicine. Either all of these millions had fallen victims to a successful global scale 'medical hoax', or the 'learned scientists' striving to disprove Homeopathy, are being proved themselves wrong.

On the other side of the matter, certain unscientific and dogmatic concepts and notions still dominate the mindset of many who work in the field of Homeopathy today. Many of them proudly claim that they are strict followers of Hahnemann, and Hahnemann alone. We can meet 'Classical Homeopaths' who hesitate even to refer to any book other than those written by Dr. Hahnemann. They raise questions about the 'scientificness' of modern science, and engage in 'scholarly' discourses regarding the futility of science and scientific method! They declare themselves to be practitioners of what they call 'True Homeopathy'. They are not mere followers, but real worshippers of Samuel Hahnemann. For them, Hahnemann is omnipotent and omniscient like a God! They will not tolerate any attempt of additions or deletions to what the master has said regarding Homeopathy two hundred years back. According to them, Homeopathy is the 'ultimate' 'scientific' therapeutic system, and all other medical systems are absolutely 'unscientific'. We also meet certain clever guys who try to sell Homeopathy maximum through their own private outlets, by assigning attractive trade labels such as 'predictive', 'true', 'pure', 'classical', 'expert', 'elite' and so on. Still another set of people 'strive' in vain to make Homeopathy

‘competent’ to vie with modern medicine, by establishing commercial networks of high-tech ‘super speciality clinics’, pretending themselves to be Homeo Paediatricians, Homeo Psychologists, Homeo Gynecologists and many other specialities. They are trying to fool the public by enacting such absurd drama, whereas it is well known that, being a holistic system of therapeutics, there is very limited scope for such specialities in Homeopathy. Recently, I have even had a chance to interact with an ‘elite class’ young homeopath, declaring himself to be a follower of a new ‘predictive’ school in Homeopathy, exclaiming that the theory of ‘similia similibus curentur’ is outdated, and he no longer requires any Repertory or Materia Medica to practice his ‘scientific’ brand of Homeopathy! Making the scenario still worse and hopeless, all sorts of unscientific and unethical commercial patented formulations are flooding the market, in the guise of “Scientific Homeopathy”. The irony is that all these people of various colors and clowns are claiming themselves to be the ‘true’ disciples of a great Genius, who displayed the intellectual courage to reform and re-write his own ‘Organon of Medicine’ six times in his life time, as part of his unrelenting quest for truth and perfection. As this undeniable historical truth remains, it is a pity to note that people who claim themselves to be the ardent followers of the great Master, are shutting their doors on the face of all new knowledge and scientific enlightenment with such hideous tenacity.

The Parellel Road Pursued by Hahnemann

Samuel Hahnemann, the great founder of Homeopathy, was born on 10th April 1755 in Germany. He died on 2nd July 1843. ‘Similia Similibus Curentur’ or ‘Likes Cures Like’ is the expression of a universally applicable natural therapeutic law revealed to him as a result of his extraordinary observational skills and ardent study. Based on this fundamental law of natural curative process hitherto unknown to humanity, Hahnemann laid the foundation for a new therapeutic system called Homeopathy. A detailed theoretical frame work and practical tools for this new system of therapeutics were also developed during his later years. It is the aim of this article to re-read and re-evaluate these principles in the light of modern biochemistry and other physical sciences. Such a rational re-reading is expected to culminate in providing a scientific explanation for the fundamental principles of Homeopathy at large.

The epoch-making revelation of Hahnemann regarding the fundamental law of cure was of so much relevance and implications that it really deserved

to be recognized in the history of human knowledge along with Newton's Theory of Motion, Theory of Gravitation, or Darwin's Theory of Evolution. It was a grave unpardonable historical blunder on the part of contemporary scientific world that such a recognition did not happen. Had it been possible for them to imbibe Hahnemann's findings in its real gravity, the fate and course of modern medicine would have been entirely different.

Physical Sciences of 18th Century Germany was in its early infancy, and obviously, could not recognize the importance of the new therapeutic law discovered by Samuel Hahnemann. The toolbox of contemporary science and technology was not sufficiently equipped to address this task. Mindset of the leading personalities working in diverse disciplines of physical sciences were governed by the world outlook of mechanistic materialism. Naturally, they could not take up the task of assimilating Hahnemann's findings and propositions, which presented much more complicated theoretical and practical issues that were beyond the boundaries of their mechanistic methodologies. This situation resulted in some sort of willful neglect and apathy from the part of mainstream scientific community towards Hahnemann and his discoveries. They miserably failed to comprehend the revolutionary content and epoch-making relevance of Hahnemann's findings. Hahnemann, whose apathy towards the contemporary medical system and its professional community is well known, may also have chosen to keep himself aloof from mainstream science. His unrelenting ideological rebellion against the influence of mechanical materialism existing in the dominant medical stream may have led him inevitably into some sort of metaphysical and idealistic philosophical gleanings, which dominated the contemporary non-scientific intellectual arenas. Inevitably, Homeopathy was constrained to follow an independent parallel intellectual course, far removed from the mainstream science. Hence it is not really unexpected that Homeopathy is reveling in an atmosphere much akin to speculative theorizations, rather than an objective scientific activity. Even today, Homeopathy is not able to free itself from the clutches of the above mentioned parallel path. Still it has not come to terms with modern mainstream Science.

As a simple and effective therapeutic system, free of any fear of unwanted side effects, Homeopathy has gained acceptability to a great extent during the by gone two centuries. The principle of 'Similia Similibus Curenter' has sufficiently proved its 'right of existence' through thousands and thousands of miraculous cures by homeopaths all over the world. But

we cannot overlook the fact that we have not yet succeeded in explaining this principle scientifically enough. Modern physical sciences and molecular biology have accumulated a huge wealth of knowledge in recent years, unraveling even the minutest secrets of the phenomenon of life . But we have not yet been able to recreate the fundamental principles of Homeopathy scientifically and convincingly enough, by taking advantage of the above mentioned modern scientific achievements. Homeopathy shall be duly recognized and respected as an advanced branch of modern molecular medicine, only when such a scientific recreation of its basic premises is attained. Until then, acceptance of our claim that Homeopathy is a science will remain confined to ourselves alone.

Material Basis of Vital Processes

Modern Science has already unraveled many fundamental facts regarding the ‘chemistry of life’, crucial in exploring the secrets of the biological phenomena of life, health, illness, cure and death. To take up the task of providing scientific explanations to the theory of ‘Similia Similibus Curentur’, it is imperative that we should be well equipped with a clear understanding about these fundamental facts.

By the term ‘living organism’, we indicate a material system with a specific quantity, quality, structure and functions of its own, which is capable of self-controlled growth and reproduction of its progeny, by accepting matter and energy from its environment. The phenomenon of life exists through a continuous chain of highly complex biochemical interactions which control each other, depend up on each other and are determined by each other. A ‘living organism’ represents a much higher and advanced level of existence of the same elements of matter we meet in the inorganic world, different only in its structural organisation and functional complexity. The universal phenomenon of material motion we find as part of primary existence of matter itself, attains the wonderful qualities of life, due to this complex structural organisation. In fact, ‘life’ is the result of a continuous evolutionary process of primary matter in this universe through millions of years, attaining different levels of organisational and functional forms. Primary forces, sub-atomic particles, elementary atoms, simple chemical molecules, complex inorganic molecules, carbon containing organic molecules, biomolecules, complex bio-polymers, RNA-DNA-Protein structures, organelles, unicellular organisms, multicellular organisms, diverse species of plants and animals, and ultimately Homo

sapiens- these are the prominent milestones in the known evolutionary ladder on earth, panning through millions and millions of years. Human beings represents the highest form of this material evolutionary history on earth, as far as it is known to us. Parallel to this biological evolution, we can perceive a systematic evolution and perfection of the nervous system also. Simple forms of conditioned reflexes that existed in primitive organisms, gradually evolved into nerve cells, neural networks and ultimately into a well organised nervous system in higher animals. In higher forms of life such as humans, this nervous system has attained such a structural and functional perfection that human brain and its diverse faculties have begun playing a decisive role even in the existence and development of that species and even life on earth itself. Of course, collective labour, language and social relations also played a major role in this evolutionary process.

A living organism can exist only through a continuous interaction with its environment. There is an unceasing flow of matter and energy in both directions, between internal and external environments of the organism. Metabolism, or 'life process' is the term used to describe the sum total of this flow. The moment this bi-directional flow of matter and energy ceases, the organism can no longer exist.

Chemistry of Life

A living organism is distinguished from other non-living forms of matter by certain fundamental features such as: high level of structural organization, the ability to convert and utilize energy, continuous material exchange with environment, self regulation of chemical transformations, and, reproduction or transfer of hereditary information. A state of disease may ensue when any of the biochemical channels governing these fundamental factors of life are disturbed. Obviously, it is impossible to make a scientific study of pathology and therapeutics without an understanding of these subjects.

Complex bio-molecules which participate in the diverse chemical processes of life are broadly classified into four major groups: Proteins, Carbohydrates, Lipids and Nucleic Acids. These are polymers of simple chemical components or sub units, called monomers. The monomers of proteins are amino acids, and those of carbohydrates are monosaccharides. Lipids are polymers of fatty acids. The monomers of Nucleic acids are

known as nucleotides. These bio-molecules are considered to be the building blocks of life on earth, and are never seen in the non-living world.

Importance of Proteins and Enzymes

We cannot engage in a meaningful discourse regarding the phenomena of life and disease without a proper understanding of the protein and enzyme chemistry, and the complex dynamics of their molecular interactions. Proteins are a class of highly complex nitrogen-containing bio-molecules, functioning as the primary carriers of all the biochemical processes underlying the phenomenon of life. There exist millions of protein molecules belonging to thousands of protein types in a living organism. Each protein molecule is formed by the polymerization of monomers called amino acids, in different proportions and sequences. Each protein type has its own specific role in the biochemical interactions in an organism. Most of the amino acids necessary for the synthesis of proteins are themselves synthesized from their molecular precursors inside the body. A few types of amino acids cannot be synthesized inside the body, and have to be made available through food. These are called essential amino acids. There are specific protein molecules assigned for each biochemical process that take place in the body. Various proteins play different types of roles, like biological catalysts or enzymes, molecular receptors, transport molecules, hormones and antibodies. Some proteins function as molecular switches, systematically switching on and off of certain biochemical pathways. Proteins are synthesized from amino acids, in conformity with the nucleotide sequences of concerned genes, with the help of enzymes, which are themselves proteins. It may be said that genes are molecular moulds for synthesizing proteins. There are specific genes, bearing appropriate molecular codes of information necessary for synthesizing each type of protein molecule. Even the synthesis of these genes happens with the help of various enzymes, which are protein molecules. There is no any single bio-molecular process in the living organism, which does not require an active participation of a protein molecule of any kind.

The most important factor we have to understand while discussing proteins is the decisive role their three-dimensional spatial organisation plays in biochemical interactions. Proteins exhibit different levels of molecular organization: primary, secondary, tertiary and quaternary. It is this peculiar three dimensional structure that decides the specific biochemical role of a given protein molecule. More over, co-enzymes and co-factors such as metal ions and vitamins play an important role in keeping up this three-

dimensional structure of protein molecules intact, thereby activating them for their specific functions.

Whenever any kind of error occurs in the particular three-dimensional structure of a given protein molecule, it obviously fails to interact with other bio-molecules to accomplish the specific functions it is intended to play in the concerned biochemic processes. Such a failure leads to harmful deviations in several biochemic processes in the organism, that require the participation of this particular protein, ultimately resulting in a cascading of multitude of molecular errors. This is the fundamental molecular mechanism of pathology, which we perceive as disease of some or other category. These deviations in biochemic processes are expressed as various groups of subjective and objective symptoms of disease. The organic system exhibits a certain degree of ability and flexibility to overcome or self repair such molecular deviations and preserve the state of homeostasis required to maintain life. Anyhow, if these deviations happen in any of the vitally decisive biochemic channels, or, if these are beyond self repair, the biochemic processes ultimately stop and death happens.

Broadly speaking, the molecular errors which underlie diverse conditions of pathology belong to any of the following types:

1. Nutritional deficiencies of amino acids: Any shortage in the availability of various amino acids and their precursors may lead to non-production of proteins in the organism. In some cases, it may result in the production of defective proteins.

2. The absence or defects of appropriate genetic materials, coding the information required for the production of various protein molecules utilising amino acids, may inevitably lead to total failure of protein synthesis, or to production of defective proteins. These come under the class of genetic proteinopathies.

3. The deficiencies or errors related with the enzymes required for genetic expression in the process of protein synthesis and post-translational transitions may lead to non production of essential proteins, or may lead to production of defective proteins.

4. Any deficiencies or structural defects of co-factors and co-enzymes which help the protein molecules maintain their specific three-dimensional

structure and activate them. This may be due to the nutritional deficiencies of essential elements and vitamins, or due to some errors in their metabolic pathways.

5. The absence of congenial physiologic conditions for protein molecules to remain active. Dehydrations, deviations of pH in the internal medium, variations of temperature, harmful radiations etc. may deactivate the protein molecules.

6. The absence or structural defects of certain substrate molecules which are to interact with proteins in biochemical processes.

7. The inability of substrates to interact with protein molecules due to binding of any foreign molecules or ions on themselves.

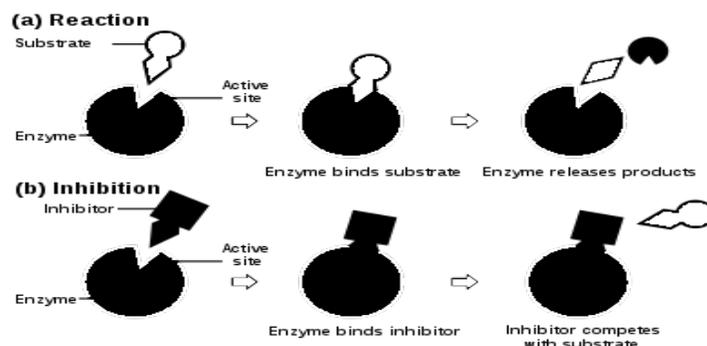
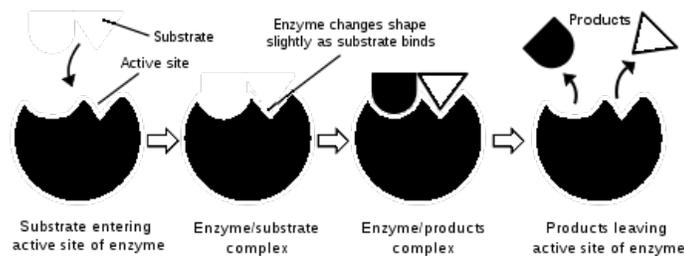
8. Molecular inhibitions of protein molecules, resulting from binding with exogenic or endogenic foreign molecules or ions, including metabolites.

It is obvious that almost all conditions of pathology we normally confront, including those resulting from genetic origin, are involved with some or other errors or absence of some protein molecules that are essential for concerned biochemical processes. Moreover, most of such molecular errors arise due to binding of some exogenic or endogenic foreign molecules or ions on the active, binding or allosteric sites of protein molecules, effecting changes in the three-dimensional configurations of protein molecules. Most of diseases originating from viral-bacterial infections, allergies, poisoning, drugs, food articles etc, belong to this category.

The most important factor we have to bear in mind when talking about kinetics of proteins in general, and enzymes in particular is their highly defined, peculiar specificity. Each type of protein molecules, or some times even some part of a single protein molecule, is designed in such a way that it can bind only with a specific class of molecules, and hence participate in a specific type of biochemical interaction only. This functional specificity is ensured through the peculiar three-dimensional configuration of the protein molecules, exhibited through their characteristic folding and spatial arrangement. Reactive chemical groups known as active sites, binding sites, and regulatory sites are distributed at specific locations on this three dimensional formations of protein molecules. These chemical groups can interact only with molecules and ions having appropriate spatial

configurations that fits to their shape. This phenomenon can be compared with the relationship existing between a lock and its appropriate key. Just as a key with an exactly fitting three dimensional shape alone can enter the key hole of a lock and open it, molecules with exactly fitting three dimensional structure alone can establish contact and indulge in chemical activities with specific protein molecules. This key-lock relationship with substrates defines all biochemical interactions involving proteins, ensuring their optimum specificity. Obviously, any deviation in the three dimensional configuration of either lock or key makes their interaction impossible.

It has been already explained that the primary basis of any state of pathology is some deviations occurring in the biochemical processes at the molecular level. Endogenic or exogenic foreign molecules or ions having any configurational similarity to certain biochemical substrates can mimic as original substrates to attach themselves on the regulatory or the active sites of proteins, effecting changes in their native 3-D configuration, thereby making them unable to discharge their specific biochemical role. This situation is called a molecular inhibition, which leads to pathological molecular errors. It is comparable with the ability of objects having some similarity in shape with that of key, to enter the key hole of a lock and obstructing its function. As a result of this inhibition, the real substrates are prevented from interacting with the appropriate protein molecules, leading to a break in the normal biochemical channels. This type of molecular errors are called competitive inhibitions. It is in this way that many types of drugs, pesticides and poisons interfere in the biochemical processes, creating pathologic situations. Such substances are known as anti-metabolites.



Homeopathy has devised its own method of closely following even the minutest deviations in the biochemical processes in the organism, through a special strategy of monitoring and recording the perceivable symptoms caused by such deviations. Obviously, each biochemical deviation resulting from such nano-level molecular inhibitions produces a specific train of subjective and objective symptoms in the organism. In other words, each specific group of symptoms exhibited by the organism indicates a particular error occurred in the molecular level. Homeopathy chases these train of symptoms to their minutest level, from periphery to interior, in order to study the exact molecular errors underlying any particular state of pathology. Not even the sophisticated tools of ultra-modern technologies can monitor those molecular errors with such perfection. Then, those pathological molecular inhibitions are removed by applying appropriate therapeutic agents, selected on the basis of 'law of similars' or 'Similia Similibus Curentur'. This fundamental strategy underlying the homeopathic system of therapeutics evidently surpasses even the most scientific methods of modern molecular medicine. It is high time that the scientific world had realized and recognized this truth, and incorporated this wonderful tool into their armamentarium.

Symptoms – Indicators of Biochemical Processes

We time and again hear our critics sarcastically declaring that homeopaths indulge in a totally unscientific way of medical practice, considering the external symptoms alone, and accuse that the basic causes of diseases are not dealt with in homeopathic treatment. 'Homeopaths treat only the symptoms, not the disease'- they say. Even now these learned friends utterly fail to understand the logic of homeopathy, and the fact that it is a highly scientific method of therapeutics. The subjective and objective symptoms presented by the organism are the only reliable indicators to help us correctly understand the minute molecular deviations underlying a state of pathology. Each group or train of symptoms represent a specific molecular error that had occurred in a particular biochemical channel. These symptoms invariably indicates the specific type and character of the endogenic or exogenic foreign molecules or ions responsible for the particular molecular inhibition. By studying the train of symptoms carefully and systematically, homeopaths are really observing these exact molecular inhibitions. This symptomatology-based analytical method of Homeopathy is far more exact and superior than the multitude of expensive complex

laboratory chemical tests and imaging technologies we consider to be scientific.

If a drug substance is introduced to a living organism, which exists in comparative state of dynamic equilibrium, constituent molecules of that substance are conveyed by the internal transport systems, and bind by their configurational affinity to any of the complex bio-molecules engaged in natural biochemical processes. As a result of such binding, the bio-molecules are subjected to deviations in their three-dimensional configurations, and becomes incapacitated to deliver their natural molecular functions. All the biochemical processes mediated or participated by those bio-molecules are affected, and dependent biological channels are subsequently blocked. Since different biological channels are interdependent, deviations in one channel naturally affect the dependent ones also. The cascading of molecular deviations influence the neuro mediator-neuro transmitter systems and endocrine systems and finally manifest in the form of a particular groups of subjective and objective symptoms. This is the real molecular kinetics of pathology.

Logic of Drug proving

Homoeopathy has its own peculiar way of experimenting and documenting the properties of medicinal substances. This is called drug proving. For this, a particular drug is introduced into a healthy organism, and, the subjective and objective symptoms and their modalities representing the diverse molecular deviations caused by the drug, are carefully observed and recorded. Each specific group of symptoms that appear as part of diverse pathological conditions are thus artificially created in healthy individuals. These symptoms are compiled as a materia medica of the substance used.

Small doses of a particular drug material are administered to a large group of apparently healthy individuals, as part of this drug proving program. The drug molecules thus entering the organism are naturally conveyed by the internal transporting system of the body into tissues and organs. These molecules may undergo some preliminary chemical changes, and subsequently get themselves bound to various biomolecules participating in the essential biochemical activities in the organism. The three dimensional structure of the individual drug molecules, and that of the concerned biomolecules are the decisive factors in this process of formation of molecular binding between them. This peculiarity is called molecular

affinity. On the surface of biomolecules belonging to protein category, with their characteristic three dimensional organization, there will be different functional groups suitable for engaging in various types of biochemical bonds. These functional groups belong mainly to two categories. Certain functional groups play a role in establishing contacts between molecules, and are called binding groups. Functional groups performing real chemical processes are known as active groups. Thereby, different binding sites and active sites exist on the complex biomolecules. We can compare these binding sites and the active sites of biomolecules to the three dimensional key-holes of ordinary mechanical locks. A key will be suitable only to the particular complementing key-hole with exact three dimensional structure that fits to the shape of the key. In the same manner, various molecules engaged in biochemical processes identifies and interacts each other with the help of peculiarities of their spacial configurations. A different key, with a three dimensional structure only partially similar to that of the original key, may enter partially in the key-hole, but it fails to open the lock, and results in mechanically obstructing the key-hole. Molecular mechanism underlying a disease process may be broadly compared to such an obstruction and inhibition of molecular locks, due to the action of some molecular keys, partially similar to but different from original ones. Due to such an inhibition, the particular bio-molecule becomes incapable of interacting with its real molecular keys, thereby hindering the concerned normal biochemical process. This situation amounts to a pathology at molecular level. We can also visualize a different scenario of molecular inhibition, where the original key itself become structurally deformed, thereby hindering its interaction with its appropriate lock. become impossible to open the lock in yet another situation. There may also be such occasions as some dirt getting collected inside the key-hole, or the keyhole or the key itself has some manufacturing defects etc. All such presumed situations are possible in the case of bio-molecules also, and may result in disease process of some sort or other

Eventhough modern biochemistry and molecular medicine has made great strides in the study of diverse molecular inhibitions related with diseases, still there are grave limitations. It is imperative that modern science should strive to find out means to define the exact bio-molecular deviations and inhibitions responsible for each and every one of the multitude of diverse symptoms and modalities expressed in particular disease conditions, in order to evolve a most scientific method of removing such inhibitions. We may hope, that such a day will not be too far, when it

could be possible for humainty to devise a perfect technology to recognize and handle each and every pathological molecular mechanisms. That should be the ultimate aim of molecular medicine of the future. Until that happen, the only reliable practical technology available for us is the Homoeopathic method of recognizing the underlying molecular processes of diseases by minutely observing the expressed symptoms, the language of nature. Here lies the paramount importance of the homoeopathic theory of similimum and drug proving.

Potentizaton

All the major controversies related with homoeopathy are essentially concerned with its theory of potentization of drugs. Homoeopathic potencies or dilutions are made by adding crude drugs with sugar of milk or a mixture of ethyl alcohol and water, and undergoing a peculiar serial mechanical process known as Trituration, Dilution and Succussion. These homoeopathic potencies are prepared mainly in three series known as Decimal, Centesimal and Millecimal. These are dilutions in the multiples of ten, hundred and million respectively. Homoeopathy claims that even objects which are comparatively inert chemically, turn into very potent medicines through this some what simple mechanical process. The scientific world not only refuses to accept this concept, but they are very much reluctant even to consider it worth discussing seriously. They always prefer to make it a mockery when talking about this concept. The biggest intellectual challenge homoeopathy face at present is to explain and demonstrate this process of potentization in such a way that modern science could understand and imbibe it easily.

There is no much scope for empty philosophical dialogue any more. We cannot any longer save ourselves hiding merely behind centuries-old hypotheical theorizations and hollow verbal exercises. We have no other go but to demonstrate and explain our fundamental principles scientifically, and answer the following questions: What really happens at material level during the process of Potentisation? What are the active principles in the potentized medicines? How these potentized medicines exactly influence the biochemical processes and relieve the pathological molecular inhibitions? Only when these fundamental questions are answered satisfactorily, will Homoeopathy be accepted and crowned as a rational and scientific system of medicine.

Several attempts had been made so far by many, to explain the phenomenon of potentiation and similimum. Almost all of those theoretical experts of Homoeopathy claim that some mysterious ‘dynamic power’ contained in the medicinal substance is liberated through the process of potentization, and that this dynamic power which remains in some sort of non-material form invigorates the vital force in the patient and effects a cure. According to them, both disease and cure takes place not in the material level, but in a mysterious dynamic level. They try to introduce a concept of a medicinal power and a vital force which are beyond any scope of analysis and explanation through the known tools and methodologies of physical sciences. They talk about a medicinal force and a vital force which exist and interact on some unknown super-material level. At least, we have to understand that it will never be possible for us to present Homoeopathy as a branch of science with the help of such supernatural and dynamic explanations, which is far from a rational and scientific world outlook.

Yet another class of ‘experts’ shock us with their ‘scientific’ explanation of homoeopathy, declaring that atomic energy is released during the process of potentization. It is really an absurdity not even a primary school student can tolerate, to hear that atomic division is possible through such a very simple mechanical process like potentisation. Further, it is very unlikely that those people who talk about atomic energy in homoeopathic medicines had ever thought about how the simple sub-atomic particles could preserve and exhibit the specific medicinal properties of highly complex drug molecules subjected to potentization.

It is only a primary knowledge of any student of physics that an object loses its gross molecular properties when it is divided into atoms, and loses even the atomic properties when atoms are divided in to sub-atomic particles. It is beyond any comprehension and common sense how the individual medicinal properties of complex drug molecules can be preserved and exhibited by simple sub-atomic particles they contain, as our ‘scientific’ interpreters of homoeopathic potentization try to ‘prove’. All the similar particles at sub-atomic level are same, whether they come from nux vomica or sulphur or gold. Such irrational ‘pseudo scientific’ arguments only help in making Homoeopathy a subject of unending mockery. We should always bear in mind the fact that such a simple mechanical process involved in homoeopathic potentiation can never effect any atomic division at all. Only division we can imagine is ionization of atoms and molecules during this mechanical process. In a knowledge-based society having clear

understanding about various forms of energy and forces, our slippery talk about mysterious 'dynamic medicinal energy' and 'dynamic vital force' has no any relevance in a scientific dialogue. Let us hope that common sense will prevail on all the concerned.

According to proven laws of physics, the number of molecules contained in one gram mol quantity of any substance is 6.0221367×10^{23} . This number is known as Avogadro's constant. Since the molecular weight of oxygen is 32, 32gms of oxygen will contain 6.0221367×10^{23} molecules of oxygen. That means, number of molecules contained in one gram of oxygen will be $(6.0221367 \times 10^{23}) / 32$. It is evident that, as the structure of individual molecules become more complex, and their molecular weight increase, the number of molecules contained in one gram of that substance gets proportionally reduced.

If the drug substances contain large complex molecules with high molecular weight, the limits of Avogadro's number will be crossed even before the process of potentisation reaches 10th dilution in the centesimal scale. If the drug molecules are simple and small in size, this may happen above 20th dilution or so. As hydrogen is the smallest molecule, with least molecular weight, it will be the last to cross the Avogadro limit during dilution process. It is evident from calculations that in a homoeopathic potency above 23C, which is very much diluted than the Avogadro limit, not even a single molecule of the original drug is likely to remain. It will contain only the molecules of water and alcohol used as the medium of potentization, along with some probable contaminants. 30C potency means the drug is diluted in a ratio of 1:10000000000000000000000000000000. In the case of 200C, this is 1: 1×10^{200} . Eventhough we name those highly diluted preparations using labels such as sulphur, mercury etc, which were used to start the process of dilution, the undeniable truth remains that they contain not a single atom of those substances. Same time, we successfully utilize those dilutions to cure diseases, according to our therapeutic law: *similia similibus curentur*. We are obliged to prove it, and provide a reasonable explanation for this mysterious riddle, if we hope homoeopathy has to be finally acceptable to the modern scientific world.

Whatever the critics of homoeopathy may say, we are fully confident of the fact that these highly diluted homoeopathic preparations exhibit medicinal properties. These preparations can be effectively used in the treatment of diseases on the basis of the principle of *Similia Similibus*

Curentur. These facts are regularly being proved in everyday experience by thousands of homoeopaths all over the world. It has been also proved in various controlled in vitro tests in the laboratories. The sarcastic comments of our opponents that 'homoeo medicines act only as placebos' may be dismissed as expressions of their arrogance resulting from 'scientific ignorance' regarding matters happening outside their realm. Actually, these off-hand sarcastic comments about homoeopathy points to certain limitations of existing scientific thought and the methodology they follow. Even in such a case, we are bound to convince the scientific community, how these highly diluted preparations preserve and exhibit the reverse therapeutic properties of original drugs, in the total absence of their molecules. We should realize that it is of no particular use, trying to evade from this obligation by labelling this phenomenon with non-specific phrases such as 'dynamic force' or the like, which even the homoeopaths fail to fully comprehend.

It is obvious that during the process of 'trituration, the complex molecules contained in the drug substances probably get liberated themselves from their inter-molecular bonds and get ionized when they are mixed with crystals of 'sugar of milk' and subjected to strong molecular friction. These ionized drug molecules thus attains a full expression of their chemical and biological properties, and become more virulent than the tightly packed original molecules. The secret of even those substances which seem to be chemically inert, turning into potent medicinal agents through the process of homoeopathic trituration may be due to the liberation and ionization of individual molecules contained in those drugs.

But, we cannot explain the medicinal properties of the highly diluted homoeopathic potencies even on the basis of ionization. There is least chances of even a single molecule of the drug substance still remaining in those preparations. More over, the medicinal properties exhibited by these high potency dilutions are exactly opposite to those of their original drug substances. Homoeopathic potencies expresses their therapeutic effect by removing disease symptoms that are similar to those produced by the original drugs when introduced into in healthy organisms for proving. It means that homoeopathic potencies act in a direction reverse to original drugs. The fact that they behave somewhat like antidotes of the original drug substances indicates that properties of drug substances are somehow transferred into the medium in their reverse order through the process of

potentization. This important observation gives us certain vital clues in solving the mystery of homoeopathy.

Homoeopathic potencies are prepared using a special medium of water and ethyl alcohol, mixed in in a particular ratio. (60 power rectified spirit-density 0.8298). This mixture contains is 87% w/w of ethiyil alcohol, and the remaining part is water. The wonder is that, it has been proven through minute chemical analysis, that even after the process of potentisation is completed, the mixture still remained simply water and alcohol in the same initial proportion. In other words, The medium used for potentization, and the product of potentization are similar in chemical structure. The grave challenge we face is, how to explain the diverse specific medicinal properties and therapeutic effects exhibited by these potentized preparations, having only a chemical structure of simple alcohol-water mixture. It is imperative that a satisfactory answer to this question should given at least to the people who do not have any doubts regarding the therapeutic capabilities of homoeopathic potencies.

The therapeutic properties of potentized homoeopathic preparations are found to be lost by the influence of physical forces such as violent motion, strong magnetic fields, powerful light, excessive heat, electricity, and other electro-magnetic radiations. Every homoeopath may have experienced this phenomenon. It means that the medicinal properties of homoeopathic potencies exist in such a particular form that it can be adversely affected by above said physical influences. It is evident from this observation that through the process of potentisation, the water-alcohol mixture attains such a physical transformation that can be reversed by certain physical influences described above. Through this pure physical transformations, without inducing any chemical changes, certain properties of the original drug substance are transferred into the alcohol-water mixture in a reverse order, giving it the therapeutic properties we experience. We have to inquire into the exact mechanism of this phenomenon, with the help of modern physical sciences.

It should be specially noted that the therapeutic properties of homoeopathic potencies are exactly opposite to the medicinal properties of original drug molecules used for potentization. Diseases with symptoms similar to those produced by drug substances during proving are cured by the potentised form of same drug. Since no chemical changes take place in the alcohol-water mixture during potentization, we can conjecture that

changes happens only at the level of the physical formations. More over, these physical transformations occurring in the nanoscopic level are liable to be reversed by the influence of above-said physical forces. As a result of this nanoscopic physical transformations happened through potentization, the alcohol-water mixture attains the capacity to interfere in the biochemical processes in the living organism, resulting in desired therapeutic effects. It can be proven by simple experiments that the rate of evaporation, solubility, surface tension, spectroscopic analysis etc., of alcohol-water mixture before and after potentization are different. It indicates that, though the chemical structure remains the same, some changes have occurred in the super-molecular level as a result of potentization. Key to the mystery of homoeopathy may be available by persuing these primary observations in scientific directions.

What is the exact character and dynamics of this physical transformations occurring in the alcohol-water mixture during potentization? How is the information regarding the medicinal properties of drug molecules encoded into these physical formations, and preserved even without the presence of a single original drug molecule? What is the exact molecular dynamics of therapeutic properties of these highly diluted preparations? How they interfere in the biochemic interactions of organism, thereby removing the specific pathologic molecular inhibitions? The future of Homoeopathy and medical sciences at large, depends on the answers we provide for these fundamental questions. With apology, the author dares to delve into the depth of these vital issues, equipped with his very limited resources.

This search inevitably leads us to the study of the wonderful physical and chemical properties water, one of the the most common and abundant mineral on earth. We may begin our discussion by looking into the wealth of information already collected by modern physical sciences on this subject.

Water- its Role in Potentization

Until recently, we knew precious little about various miraculous properties of water, though we find it in plenty around us, and utilize freely in our daily life. Even the highly equipped scientific community has begun to turn its serious attention to the study of water only in recent times. The facts being revealed in these studies are really amazing, and may help us in solving the mysteries haunting homoeopathic potentization.

Seventy percent of the surface of earth is covered with water. 45-70% of our body mass is water. This ratio changes with age, and it may be said that human body becomes more and more dry with aging. 30-40 % of this water is seen in the intra-cellular fluid, 12-16% as extra-cellular, and 5 % in blood plasma. 2% of water is in lymph, and 1-3% in different body cavities. This wide spread presence of water in the living body indicates the paramount importance of its role in various biological processes. About 2 liters of water enters our body from outside, along with food every day. A small quantity of water is produced in the body itself as a by-product of metabolism.

As far as we know, life cannot exist without water. It is considered that the phenomenon of life originated on this earth only because of the presence of water. All the biochemical processes in the organism take place with the involvement of water. In the absence of water, essential biological molecules such as proteins and DNA undergo structural changes, and become inactivated. Water is the essential condition of life. Liquid water has importance as a solvent, a solute, a reactant and a biomolecule, structuring proteins, nucleic acids and cells and controlling our consciousness. H_2O is the second most common molecule in the universe (behind hydrogen, H_2), the most abundant solid material and fundamental to star formation.

Why this simple hydrogen oxide (H_2O), which is formed by the union of two hydrogen atoms and a single oxygen atom happen to play such a crucial role in the origin and existence of life? What are the factors that make water distinct from other similar chemical compounds such as hydrogen sulphide?

The answers to this question lies in the wonderful physico-chemical properties of water, arising from its peculiar super-molecular structure. Water is a solvent with higher polarity than similar liquids. $H-O-H$ have bond angle of 105 degrees. That means, water molecule is a dipole. Because of this peculiarity, water molecules can exist like a super-molecular network by forming hydrogen bonds between themselves. A minimum number of five water molecules will be contained in this network. These formations are called pentamers. Most of the wonderful properties of water arise from this capacity of peculiar hydrogen bonding and supermolecular formations.

A lot of research work is now undertaken all over the world regarding this phenomenon. The uncommon physico-chemical properties of water are the result of this poly-molecular structure at supermolecular level. Water

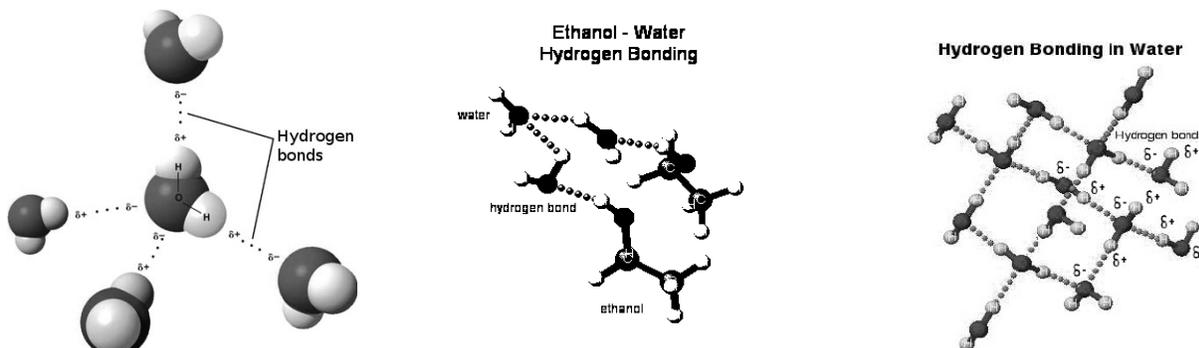
becomes the essential material for the existence of life on earth, by its diverse properties such as high polarity, anomalous expansion, anomalous boiling and melting points, high viscosity, surface tension, thermal storage capacity, high specific heat, hydration properties etc.

Water molecules (H_2O) are symmetric (point group C_{2v}) with two mirror planes of symmetry and a 2-fold rotation axis. The hydrogen atoms may possess parallel or antiparallel nuclear spin. The water molecule consists of two light atoms (H) and a relatively heavy atom (O). The approximately 16-fold difference in mass gives rise to its ease of rotation and the significant relative movements of the hydrogen nuclei, which are in constant and significant relative movement.

Although not often perceived as such, water is a very reactive molecule available at a high concentration. This reactivity, however, is greatly moderated at ambient temperatures due to the extensive hydrogen bonding. Water molecules each possess a strongly nucleophilic oxygen atom that enables many of life's reactions, as well as ionizing to produce reactive hydrogen and hydroxide ions. Reduction of the hydrogen bonding at high temperatures, or due to electromagnetic fields, results in greater reactivity of the water molecules.

As liquid water is so common-place in our everyday lives, it is often regarded as a 'typical' liquid. In reality, water is most atypical as a liquid, behaving as a quite different material at low temperatures to that when it is hot. It has often been stated that life depends on these anomalous properties of water. In particular, the high cohesion between molecules gives it a high freezing and melting point, such that we and our planet are bathed in liquid water. The large heat capacity, high thermal conductivity and high water content in organisms contribute to thermal regulation and prevent local temperature fluctuations, thus allowing us to more easily control our body temperature. The high latent heat of evaporation gives resistance to dehydration and considerable evaporative cooling. Water is an excellent solvent due to its polarity, high dielectric constant and small size, particularly for polar and ionic compounds and salts. It has unique hydration properties towards biological macromolecules (particularly proteins and nucleic acids) that determine their three-dimensional structures, and hence their functions, in solution. This hydration forms gels that can reversibly undergo the gel-sol phase transitions that underlie many cellular mechanisms. Water ionize and allows easy proton exchange between

molecules, so contributing to the richness of the ionic interactions in biology.



Hydrogen Bonding

In reality, Hydrogen Bonding is a special type of dipole force. It is a force of attraction formed between partial electro negative atom which is part of another molecule. The reason for strength is the partial positive charge attained by hydrogen. Hydrogen is capable of establishing similar bonds with the atoms of nitrogen, fluorine and oxygen. That is to say that the basis of hydrogen bonding is the attraction between one hydrogen atom which is part of a molecule which is attached to oxygen or nitrogen and oxygen or nitrogen which remains part of another molecule. This force is less powerful than the co-valent bonds which keeps the atoms inside molecule bound together. But those are these less powerful bonds responsible for the wonderful bio – chemical qualities of water.

In the ordinary liquid state, in spite of 80% of the electrons being concerned with bonding, the three atoms in water do not stay together, as the hydrogen atoms are constantly exchanging between water molecules due to protonation/deprotonation processes. Both acids and bases catalyze this exchange and even when at its slowest (at pH 7), the average time for the atoms in an H₂O molecule to stay together is only about a millisecond. As this brief period is, however, much longer than the timescales encountered during investigations into water's hydrogen bonding or hydration properties, water is usually treated as a permanent structure.

The presence of ethyl alcohol in water is considered as a factor reducing the rate of protonation/deprotonation processes, thereby enhancing the stability of hydration shells.

Hydrogen bond strength can be affected by electromagnetic and magnetic effects.

Any factors, such as polarization, that reduces the hydrogen bond length, is expected to increase its covalency. There is still some dispute over the size of this covalency, however any covalency will increase the network stability relative to purely electrostatic effects. As hydrogen bond strength depends almost linearly on its length (shorter length giving stronger hydrogen bonding), it also depends almost linearly (outside extreme values) on the temperature and pressure .

It has to be verified whether the violent succussion and rotatory motion done during potentization procedure any how plays a role in reducing the hydrogen bond lengths, thereby increasing the stability of hydration shells formed.

Hydrogen bonded chains (that is, $\text{O-H}\cdots\text{O-H}\cdots\text{O}$) are cooperative; the breakage of the first bond is the hardest, then the next one is weakened, and so on (see the cyclic water pentamer). Thus unzipping may occur with complex macromolecules held together by hydrogen bonding, for example, nucleic acids. Such cooperativity is a fundamental property of liquid water where hydrogen bonds are up to 250% stronger than the single hydrogen bond in the dimer . **A strong base at the end of a chain may strengthen the bonding further.**

Role of Ethyl Alcohol in Potentization

At this stage we have to understand a few facts about Ethyl Alcohol($\text{CH}_3\text{-CH}_2\text{-OH}$). The molecules of alcohol also have the dipole structure as water molecules. It is possible for them to establish mutual connection through hydrogen bonding. The molecular weight of alcohol molecule is 46. The molecular weight of water(H_2O) is 18. That means that the number of water molecules contained in 18 gram of water and the number of alcohol molecules contained in 46 gram of ethyl alcohol are equal. When alcohol and water are thoroughly mixed alcohol molecules network with water molecules through hydration bonds, The mobility of water molecules is restricted by the bonds established with alcohol molecules. Hence, hydration shells formed in alcohol–water mixture are comparatively more stable. The count of alcohol molecules and the count of water molecules contained in

their mixture in 73:27 ratio will be equal. (73% w/w. alcohol and 27% w/w water) This mixture is known as (40 power spirit).

Medium used for homoeopathic potentisation contains 87% w/w of alcohol and 13% w/w of water. In this ratio, the number of alcohol molecules will be about more than that of water molecules. Such a ratio will be very suitable for the production of stable hydration shells. More over, the presence of ethyl alcohol in water is considered as a factor reducing the rate of protonation/deprotonation processes, thereby enhancing the stability of hydration shells. *This may further explain the role of ethyl alcohol in preparing the medium of homoeopathic potentization.*

Role of Silica (Silicon Dioxide) in Potentization?

It should be specially noted that the vessels and utensils used for potentization are made of high quality glass or porcelain, which contains large quantities of Silica (Silicon Dioxide). Chances of silica particles liberated into the medium during the process of trituration, succussion and potentization of drugs have to be seriously considered. Studies have proved that potentized homoeopathic preparations contain trace quantities of silica. Silica is hence considered to be an unavoidable contaminant we have to cope with.

Certain recent studies regarding the properties of silica indicates that this factor has to be considered from another angle. Chances of silica particles playing a role in the molecular imprinting process during potentization cannot be ruled out at present. The peculiar molecular structure and physico chemical properties of silica proposes such a role. It has been noted that homoeopathic potencies prepared using utensils made of material other than silica glass are of low quality. Anyhow, more research is required on these lines.

Molecular Memory Of Water

‘Molecular memory of water’ is a rarely understood phenomenon, and is a subject of much controversies and speculations in the world of science. Even now, scientists differ much in their opinion regarding this phenomenon. Final outcome of these controversies will have great concern and significance in the realm of homoeopathy. Let us examine some details of the nature and essence of this controversial phenomenon.

Jacques Benveniste(1935–2004), who was a famous French immunologist, published a research paper in Nature magazine in the year 1988. This paper and the subsequent controversies which shook the world of science, were incidents which roused great interest as far as Homoeopathy was concerned. It was through this article that the idea of ‘molecular memory of water’ became a subject of discussion in the world of science. But an influential section of scientists took a stand that ideas put forward by Benveniste were nothing but nonsense. Heated controversies followed, which have not subsided yet, even after 22 years. The accusation raised by his enemies was that Benveniste could not prove his arguments in the controlled experiments overseen by experts appointed by Nature. Benveniste had later put on record that he was made a scape goat, and subjected to inhuman revenge and character assassination from the part of representatives of official science.

In his original paper, Benveniste claimed that he could observe in his experiments that human basophil degranulation can be triggered by very dilute aqueous solutions of anti- IgE antiserum. Using the molecular weight of immunoglobulins and Avogadro's number, he calculated that less than one molecule of antibody is present in the assay when anti-IgE antiserum is diluted to 1×10^{14} (corresponding to 2.2×10^{-20} M). But in the experiments he reported, he could detect significant basophil degranulation down to the 1×10^{120} dilution. Specific effects have also been triggered by highly diluted agents in other *in vitro* and *in vivo* biological systems, but he conceded that it still remained unexplained. He pointed to the possibility of biological effects in the physical absence of molecules. He argued that the entities supporting this 'metamolecular' biology can only be explored by physical investigation of agitation causing interaction between the original molecules and water, thus yielding activity capable of specifically imitating the native molecules, though any such hypothesis is unsubstantiated at present.

He suspected that the molecular memory of the antibodies which was imprinted in water during dilution is responsible for this peculiar phenomenon. But the sad part of this story is that he failed to prove his arguments in the repeated experiments which were conducted in an atmosphere of absolute hostility, under the supervision of experts who were inimical to him, whose sole aim was to disprove him.

If we carefully examine the history of Benveniste's failure, we would understand that it was not his basic propositions that failed, but the

experiments he was subjected to in order to prove his arguments. His Firstly, his argument that the drugs so diluted to the extent of making it impossible to contain a single molecule, can interfere in biological processes exactly mimicking the basic drug substance was a little exaggerated interpretation of results of his original experiments. This inaccurate interpretation of the phenomena he observed, led him to agree to subject himself to inappropriate experiments, that were obviously designed to defeat him. He failed to observe that the molecular memory of the drug substances is imprinted into water in a negative direction, in complementary configuration. Put in another way, drug molecules will be imprinted in water not as exact configurational duplicates, but as negative complements, and hence, they cannot mimic the original drug molecules in biological processes. Failure to understand this phenomenon was a great mistake, that cost heavy to him. His conclusion that the molecular imprinted water interferes in biochemical processes exactly like the original drug molecules proved to be immature. He failed to comprehend the exact mechanism of molecular imprinting in water, and design the experiments accordingly. Had he understood the real mechanism of molecular imprinting, he would have studied about the unsteady behaviour of hydration shells in water, and taken necessary precautions, before subjecting himself to a controlled experiment. He could have devised some techniques to ensure the stability of hydration shells , such as using alcohol-water mixture instead of pure water, as done in homoeopathic potentization.

We know that water is a good solvent. Let us see what happens when foreign molecules are made to dissolve in water. If a foreign molecule, ion, or colloidal particle happens to enter the matrix of 3-dimensional dynamic network of water molecules, they are entrapped inside this network. Water molecules arrange themselves around the intruder in a peculiar way by the formation of a special type of molecular interaction known as hydrogen bonding. These formations of water molecules around the foreign molecules is known as hydration shells. These hydration shells exist in a dynamic state, and are more or less unstable. The foreign molecules dissolved in water exist in a state of being entrapped inside these hydration shells. This phenomenon can be seen both in ionic solutions and colloidal solutions. Obviously, hydration shells assume an internal spacial arrangement exactly fitting to the 3-dimensional spacial configuration of the foreign molecule entrapped in them. If we could devise some technique to remove the entrapped foreign molecules from these hydration shells, without disturbing the hydrogen bonds between the constituent water molecules, these hydration shells can

still retain the molecular memory of the molecular configurations of the removed foreign molecules. This rarely studied phenomenon is known as 'molecular memory of water'. Actual mechanism and forces underlying this phenomenon has to be investigated minutely by physical scientists. Minute changes occurring in the electron clouds of atoms of water molecules during the formation of hydration shells may be one factor responsible for this phenomenon. It has been well proven that these hydration shells later show a peculiar capability to differentially recognize the original foreign molecules which were responsible for their formation. This may be due to the existence of some imprinted memory of those foreign molecules retained in the hydration shells. This imprinting of memory may be compared to formation of finger prints. As in the case of finger prints, configuration of these molecular imprints also will be a complementary negative of original molecules. These empty hydration shells, or super molecular formations of water subjected to molecular imprinting, may be called 'hydrosomes', which means, minute 'cavities of water'. Homoeopathic process of potentization is essentially a crude method of preparing hydrosomes, imprinted with various drug molecules, for utilizing as therapeutic agents. It should be specially noted that the medium used for homoeopathic potentisation is not pure water, but it is mixed with ethyl alcohol in a particular ratio. It may be inferred that the presence of comparatively heavy ethyl alcohol molecules in this mixture may be contributing to stabilize the hydrosomes, preventing their easy dissociation. The the convergent forces of rotational movements to which the mixture is subjected as part of potentization, may also be a contributing factor in stabilizing the empty hydration shells.

This peculiar configuration of hydrosomes are destroyed only when their energy level of water molecules are disturbed by the effect of heat, electricity, magnetism and other electro magnetic radiations. This phenomenon is called molecular memory of water. As stated earlier the hydration shells formed in pure water are comparatively unstable. Here lies the importance of the fact that homoeopathic potencies are made using alcohol- water mixture.

Supra-Molecular Sciences

Information we recently receive from various research institutions, regarding the wonderful supra-molecular structures of materials and their hitherto unknown peculiar properties, may greatly contribute in our efforts to unravel the secrets of homeopathic potentisation. Studies on 'water

clusters', 'crystalline structure of water', 'shape memory property', 'molecular imprinting', 'nano technology', 'clathrate formations' and other diverse phenomena are offering promising indications in this direction. We have to utilize all these new revelations in our scientific study of homoeopathy. Generally speaking, we have to deal with homoeopathic potentization, as a branch of nano technology.

Crystal Structure of Water.

We all know that water exists as ice crystals in its solid form. But it has been recently observed that water can exist even in its liquid form in crystals. In reality, water formed by melting of ice is in a state of liquid crystals. The lattice structure which is formed through hydration bonds is responsible for this phenomenon. Homoeopathy too is interested in this area of researches pertaining to this peculiar crystalline nature of water. It is believed that in the process of molecular imprinting of water using drug molecules, this crystalline structure of water plays a crucial role. It is likely that more advanced studies about dynamics of crystallization of water may help us help us to correctly explain the phenomenon of duplication of molecular imprints during homoeopathic potentization.

Clathrate Compounds

The studies about Clathrate Compounds or host-guest compounds in supra-molecular chemistry is an area in which homoeopathy has sincere interest. Clathrates are the molecular networks which are formed when gases dissolve in water under high pressure. They exist in a peculiar host-guest relationship. The studies about this phenomenon are still in their infancy. Clathrates have a crystalline nature, existing as molecular networks, formed by a process of water molecules arranging around the guest molecules. The studies about the dynamics of clathrate formation are also likely to help in explaining the phenomenon of homoeopathic potentisation. Even if the host molecules are removed from clathrates, the net work of water have been found to remain intact. More over, the existing clathrates can induce the formation of similar clathrates. It will be very useful to consider these above discoveries connecting them with the phenomenon of homeopathic potentisation.

Shape Memory Property Materials

A lot of studies has been published regarding shape memory materials. Several alloys having crystalline structure have been observed to possess shape memory property. Such materials are known as SMART materials. This phenomenon also has to be understood well while trying to explain homoeopathic potentization in a scientific language.

Molecular Imprinting

The scientific technology of molecular imprinting on polymers has already been developed. Molecular imprinted polymers are at present widely used in various areas of science and technology. But the concept and technology of molecular imprinting on water are still in their infancy. It is being proved that since water has a polymer structure, capable of forming hydrogen bonds, it can be used as a medium for molecular imprinting.

The technology of molecular imprinting on protein molecules is also being developed. It has already been acknowledged that the so-called antibodies are in reality native protein molecules which have been subjected to molecular imprinting by foreign pathologic proteins. Different types of proteins which are artificially molecular imprinted are going to evolve in near future, in the form of therapeutic agents and laboratory reagents.

Science has already recognized the fact that the much discussed pathologic molecules known as prions are nothing but disfigured molecule imprinted protein molecules. Apart from protein molecules, it is possible to do molecular imprinting on different types of polysaccharides and nucleic acids.

Miasms, considered by homoeopaths to be the cause of chronic diseases, are in reality molecular imprinted proteins, subjected to natural molecular imprinting and subsequent structural deviation. This subject will be dealt in detail elsewhere in this article while discussing 'miasms'.

It is in the phenomenon of 'molecular memory of water' itself that we naturally land on when we attempt to scientifically explain the homoeopathic potentisation of drugs. We have already seen that the alcohol-water molecules contained in the medium used for potentisation, arrange themselves around the drug molecules, and form hydration shells. The drug molecules entrapped in the hydration shells are systematically removed as a result of serial dilutions and shaking, done as part of potentisation. Empty

hydration shells or ‘hydrosomes’ remain. These ‘hydrosomes’ will be imprinted with the three-dimensional ‘finger print’ of drug molecules used for imprinting. This phenomenon is termed as ‘molecular imprinting in water’. These hydrosomes are the active principles of homoeopathic medicines, potentized above 30C.

The genius of Hahnemann invented the process of homoeopathic potentization more than two hundred years ago. During his period, physical sciences were in their infantile stage. Obviously, he was not in a position to explain the dynamics of this process in scientific terms. He tried to explain his new invention in the light of available knowledge, which was not acceptable to the leading men of science. There is no point in blaming them, for failing to understand and acknowledge the importance of his findings. Let us hope that they science will do justice to Hahnemann at least in this new era of awareness.

Potentization- Mysteries Solved?

For more than last two hundred years, “Potentization” remained a mystery, which could not be subjected to a scientific experimentation or rational explanation. Now for the first ime, we are in a position to solve this elusive phenomenon, in the light of modern scientific knowledge.

Evidently, potentization has two distinct phases, providing totally different outputs.

- A. **Phase 1:** Phase 1 involves division of drug molecules. When a medicinal substance is subjected to homoeopathic potentisation, if it is not soluble in water or alcohol, it is first mixed with sugar of milk and subjected to trituration. These are subjected to potentisation using alcohol – water mixture. If the medicinal substance is soluble in water or alcohol potentisation is done directly on it. As a result of this process these molecules contained in the medicinal substance are liberated or ionized or get split in to colloidal particles. Crude drug substance undergoes division into individual molecules and ions, due to the mechanism of violent trituration and shaking. Inter molecular bonds are broken, and the constituent molecules and ions are liberated. As a result, these ions and molecules become more virulent, capable of exhibiting their chemical potentials to its full extent, and undergo effective hydration. Individual properties of molecules come out in totality. That is why it is observed that even seemingly inert

substances become powerful drugs due to potentization. Insoluble substances become soluble in water. The difference between crude Lyco and Lyco 6x, Crude Silica and silicea 6x, crude table salt and Natrum Mur 6x etc are examples. This Phase may be called ‘liberation phase’.

- B. **Phase II:** Phase II of potentization involves hydration and molecular imprinting of individual drug molecules and ions. This phase may be called ‘imprinting phase’.

Molecules, ions and colloidal particles, liberated through the first phase undergoes process of hydration and molecular imprinting in water- ethyl alcohol mixture during this phase. Each individual molecule or ion is naturally subjected to hydration and molecular imprinting, independently of others. That is to say, potentized homoeopathic medicines consist of a mixture of independent molecular imprints of constituent molecules contained in the drug substance. This is an important point to be noted. When Nux Vomica is potentized, it is not Nux Vomica as such getting imprinted, but the individual molecules of its constituents, independently of one another. During serial dilution and shaking, done as part of potentization process, concentration of drug molecules gradually decrease in the medium, while concentration of empty hydration shells or molecular imprints increase. The memory of the three dimensional structure of each separate drug molecule will be imprinted on these empty hydration shells, in a complementary negative configuration. These complementary factors are called ‘hydrosomes’, which means ‘cavities of water’. Hydrosomes act as counteractive complementary factors (CCF) towards pathological molecules during therapeutic process, due to their configurational affinity. We can conceive these imprints as the 3-D finger-prints of drug molecules, capable of fitting exactly to the three dimensional configuration of appropriate drug molecules. We should remember that these hydration shells or molecular imprints of each constituent drug molecules act as therapeutic agents, independently of one another. We also understand that what we consider as a ‘single medicine’ in homeopathy is in reality only a mixture of hydrosomes which bear molecular imprints of different types of constituent molecules which are independent.

Potentisation is a process in which molecular imprints of drug molecules are formed and stabilized. At a particular stage of potentisation all the drug molecules are completely removed from the medium. This stage depends up

on the sizes of individual molecules. Large molecules disappear earlier, and smaller ones at higher stage. Anyhow, when the potentization crosses 23C, even the smallest drug molecules will be completely removed. We can understand this by calculating with the Avagado's number. At potentization above 23C, it will reach a state in which there is complete absence of drug molecules. When the potentization goes still higher, there will be no drug molecules for imprinting. Advisability of potentization after this stage have to be considered on the basis of studies regarding the possibility of duplication of existing molecular imprints, as in the case of duplicating of crystals. More research studies are required in this matter.

As of now, there are no helpful scientific explanations available, helpful to explain the admissibility of homoeopathic medicines above 30 C potency. May be that, even after the removal of all drug molecules from the medium, copies of existing molecular imprints are serially generated in higher and higher potencies, thereby saturating the medium with more and more molecular imprints.

Potentized homoeo medicines are available in different series like decimal, centesimal, 50 millecimal etc. There never exist any consensus among the practioners about the use of potencies, as it is the case with many other concepts of homoeopathy. When some use potencies like 30c and 200c in plenty others use Q, 3x, 1x, 6x and 12x. Yet another set of people prefer 1m, cm, dm, 0/5, 0/6 etc. While some prescribe medicine every hour, others give medicines only between the intervals of days and months only. When some practioners stick to single medicine theory, some others give more than one medicine simultaneously, alternatively or even by mixing them together.

Different masters have given different guidelines with regard to the use of homoeopathic potencies and repetition of their doses. But in reality, each practitioner has evolved his own method and way of dispensing from experience. Unless we reach a consensus up on the dynamics and mechanism of disease and cure, confusions and difference of opinion with regard to its application are bound to exist.

If it is finally accepted that molecular imprinting is the real mechanism of potentisation, we may reach a consensus that there is no likelihood of any special benefit by higher and higher potentisations above 23C. Potentisation need be continued only just beyond the limit of Avagado number. By that

time the molecular imprinted water–alcohol mixture will have attained sufficient medicinal properties, to be used on the basis of ‘similia similibus curentur’. The three-dimensional structure of drug molecules will have already got imprinted into the hydration shells or hydrosomes by that time. There is no point in continuing potentiation even after that.

It means that the medicinal property of any homoeopathic potency beyond 23 will be the same. It is a rare possibility that there could be any significant difference between various higher potencies used by us, with regard to their content or medicinal qualities. Many master prescribers have already placed on record that if the selection of drug is correct, any potency would produce the expected therapeutic result.

Though still greatly controversial, on the basis of this perception, homoeopathic potencies can broadly be divided into two groups: (1) The low potencies which contain original drug molecules (2) High potencies which do not contain drug molecules.

Low potencies contain original drug molecules acting as Competitive Molecular Factors(CMF), and can be labelled as CMF.

High potencies contain molecular imprinted Counteractive Complementary Factors(CCF) , and hence can be labelled as CCF.

Eg: Nux vom. CMF and Nux Vom. CCF. The numbers ordinarily used to indicate potencies can be here avoided.

In certain situations, where there is real scarcity of certain molecules necessary for metabolism, crude substances and low potencies or mother tinctures can be used by their supplementary or nutritional value. This belongs to Nutritional Therapy, and should not be confused with homoeopathy.

I know, these statements are not so easy to be welcomed or accepted by the mainstream homeopathic profession, conditioned for long years by dogmatic concepts and fixed mindsets on these issues. I may be running into a major controversy due to my interventions and revisionist theories. But somebody have to dare to ‘bell the cat’, and open up a discussion on these lines, at any point of time. If my assumption that the secret of potentiation lies in the phenomenon of ‘molecular imprinting’ is proved and accepted some day, there is the possibility that my suggestions shall become more

relevant. More over, instead of the existing primitive method of potentisation, modern science and nanotechnology could definitely develop a more perfect and scientific technology of molecular imprinting within near future. If it is possible to develop a more advanced and perfect technology of molecular imprinting in water, we should whole heartedly welcome such a development. Until such a perfect technology of molecular imprinting evolves, the existing system of homoeopathic potentisation with all its limitations is bound to prevail.

During the period of Samuel Hahnemann, even the very idea of molecular imprinting was impossible to develop, due to historical limitations of the then existing physical sciences. When Hahnemann started diluting of drug substances, his only aim was to prevent unwanted side effects and medicinal aggravations. When he found that there is no loss of medicinal quality due to diluting, he started to higher and higher. He observed that medicinal properties of drugs progressively increased by the process of trituration and serial dilution. He also found that inert substances becomes potent therapeutic agents through this process. Encouraged by these results, he proceeded ahead with higher and higher dilutions. It was quite accidentally that Hahnemann discovered the technique of potentisation. When the medicinal properties were found to increase by this procedure, he was compelled to provide an explanation to this wonderful phenomenon. Since there was no chance of drug molecules remaining in those high dilutions, he developed the concept of ‘dynamic force’. The scientific tools necessary to understand that the dynamics of ‘molecular imprinting’ was not available in those days. It was his historical limitations that compelled Hahnemann to explain the wonderful therapeutic properties unravelled before him with the concepts such as ‘dynamic force’ and ‘vital force’.

Molecular Dynamics of Cure

We are now in a position to provide a rational and scientific explanation to the molecular dynamics of homoeopathic cure. It has been already explained that low potency and high potency medicines contain different class of active principles, and hence, their mode of actions are also entirely different.

A drug means, a sample of substance containing chemical molecules, that can interact with biological molecules, effecting deviations in biological processes. Normally, when a drug substance is introduced into an organism,

the constituent drug molecules exhibit their action in any of the following ways:

1. Acting on various structural membranes, deranging their permeability.
2. Engaging in chemical reactions with various molecular substrates and metabolites inside the body.
3. Interacting with enzyme proteins, and other complex biomolecules, thereby inactivating or incapacitating them for biochemical processes.
4. Interaction with various structural proteins.
5. Interacting with carrier proteins.
6. Interaction with ion channels.
7. Binding to Hormone receptors, and Neuro-transmitter receptors.

But the therapeutic properties of highly potentised homoeopathic preparations cannot be explained by any of these ways. Once we admit that there is no chance of single drug molecule being present in the higher homoeopathic potencies, we will have to seek some other models of drug action entirely different from those described above. Attempts to explain the properties of higher homoeopathic potencies basing on the phenomenon of 'hormesis' had been done by some people earlier. This phenomenon was proposed by Southam and Ehrlich and Stebbing. They proposed that a substance which acts as a toxin in high concentrations, acts as a stimulant in low concentrations. This phenomenon is known as 'hormesis'. There is a theory known as Arndt-Schulz rule or Schulz' law to explain this phenomenon. The essence of this theory is "For every substance, small doses stimulate, moderate doses inhibit, and large doses kill". Hugo Paul Friedrich Schulz and Rudolf Arndt are the exponents of this theory. Toxins in their highly diluted form stimulates biological processes. In their concentrated forms the toxins inhibit or kills the biological processes. But even today it has not been made possible to explain this phenomenon scientifically.

The scientific experiments conducted at Utrecht University, undertaken by a team under the leadership of Roeland van Wijk and Fred A.C.

Wiegant tried to explain homoeopathy on the basis of theory of 'hormesis'. Even though these experiments succeeded in proving the therapeutic properties of potentized drugs to a certain extent, they failed to explain the phenomenon on the basis of 'hormesis', and to uncover the molecular kinetics of 'hormesis'. In my opinion, the phenomenon of 'hormesis' could have been better explained on the basis of 'hydrosomes' or 'molecular imprints' of drug molecules, which are likely to be formed in the highly diluted solution of a toxic substance.

Obviously, molecular tracking protocols employed in modern medical research are not at all applicable in the study of transportation and targetting of potentized drugs inside the organism, since there is no single drug molecule present in our medicinal preparations. As for now, there is no scientific technology available for this purpose to track the molecular imprints inside the organism. Rational analysis and deductions based on available scientific premises alone are possible in this respect.

Some homoeopathic theoreticians argue that potentized medicines act through nervous system, being transported through nervous system as nerve impulses, and the mind in turn induces the cure of disease. The fact that we can display the medicinal properties of potentized drugs in vitro, where nervous system is not present, clearly negates this theory. The theory that homoeopathic potencies directly acts up on 'vital force' as a 'dynamic power', and cures diseases from 'dynamic' plane is also disproved by the fact that these drugs can exhibit their effects in vitro experiments, as in clotting of blood, or antibody-antigen interactions.

A more rational and scientifically viable model is required, to explain the therapeutic effects of high potency homoeopathic preparations. Potentized homoeopathic medicines, when introduced into the organism by any root, is carried by the body fluids, and transported to different parts of body. When they come in the vicinity of active groups of pathological foreign molecules, having similarity to the molecular imprints (of complementary configuration) contained in them, these molecular imprints selectively bind to the pathological molecules. By this process, pathological foreign molecules are prevented from establishing binding with biological molecules, thereby relieving the biological molecules from pathological molecular blocks. This can be described as some sort of 'molecular scavenging' or entrapping of pathological molecules, by 'hydrosomes' or molecular imprints contained in the potentized medicines.

The concept of ‘similimum’ has to be examined here in a new perspective. We have seen during our earlier discussions, how the constituent molecules of a drug substance introduced into the organism during drug proving creates molecular blocks, leading to inhibitions of certain biochemic channels, expressed by a specific train of subjective and objective symptoms. These symptoms are called drug symptoms, and compiled in the materia medica of that particular drug substance. When similar train of symptoms appears in an organism during a disease condition, it means that, the pathological foreign molecules responsible for the disease has been attacking same biological molecules, causing similar molecular blocks and biochemic inhibitions, expressing similar subjective and objective symptoms. The fact that both drug molecules and pathologic molecules could attack same biological molecules in an identical way, shows that the drug molecules and pathologic molecules were having some factors(chemical groups) with similar spacial configurations. Due to such a configurational similarity to the pathological molecules, the molecular imprints of drug molecules contained in the potentised preparations will be having a counteractive configurational affinity towards the pathologic molecules. Due to the configurational affinity, these molecular imprints or ‘hydrosomes’ can selectively bind to the active groups of pathologic molecules, when coming in their vicinity. This is the exact molecular dynamics of homeopathic cure, underlying the therapeutic principle of ‘similia similibus curentur’.

When we apply a highly potentized homoeopathic drug as a therapeutic agent on the basis of similarity of symptoms, we are actually using the molecular imprints or ‘hydrosomes’ of drug molecules, having complementary configurational affinity towards the pathologic molecules, so that they can bind and inactivate the pathological molecules by capping their active groups.

Re-defining “Similia Similibus Curentur”

Homeopathy, as a specialized branch of modern molecular medicine, may be defined as the therapeutic technique of removing the the molecular blocks and relieving the biological molecules from pathologic inhibitions (curentur), by selectively capping and de-activating the interactive groups of pathogenic molecules, utilizing the three-dimensional complementary

configurational affinity of the molecular imprints (potencies) of same or similar molecules (similimum).

Now we are in a position to re-define 'similia similibus curentur' more accurately. Original drug molecules, having configurational similarity to the active groups of pathological molecules can compete with the pathologic molecules in binding to the target molecules, and in that process, relieve the bio-molecules from pathological inhibitions. Drug molecules act as 'competitive molecular factors' (CMF) towards pathologic molecules. It should be understood that crude drugs and low potencies act as therapeutic agents by this 'competitive' mechanism, even though selected according to the principle of 'similia similibus curentur'.

Drugs potentized above Avogadro limit act by an entirely different mechanism. 'Hydrosomes' or 'molecular imprints' formed during potentization are configurational complementaries of original drug molecules. They act 'counteractive complementary factors' (CCF) and bind to the active groups of pathologic molecules having configurational similarity to the drug molecules used for potentisation. Thus the pathologic molecules are prevented from interacting with the bio-molecules, thereby relieving the molecular blocks and pathological inhibitions.

We should also be aware of the difference between crude drugs and low potencies or triturations. Eventhough both preparations contain same drug molecules, their therapeutic properties are found to be different. In crude form, drug molecules are packed tightly, with their chemical bonds remain saturated by interacting with various other molecules or ions. Hence, they are not at all free to exhibit all their individual interactive potentials. Whereas in triturations and low potencies, the drug molecules are free or ionized, they can exhibit all their properties. Hence, pathologic and therapeutic capability of triturations and low potencies are much higher to crude forms of same drug. We already know that various drugs which appear comparatively inert in their crude forms become very potent medicinal agents in triturated forms. Differences between crude *Silicicia* and *Silice 3x*, crude *Lycio* and *Lycio 3x* etc. are examples for this phenomenon.

Vital Force

The concept of 'vital force', on which the whole philosophical system of homoeopathy is built up on, stands as a formidable stumbling block in its way of harmony with modern science and its methodology. The theoretical basis of homoeopathy is based on the somewhat spiritual concept that there is an abstract 'vital force' alien to the physical body, existing as a part of 'universal force' which enters the body and possesses to enliven it, and leaves it with the advent of death. Homoeopaths perceive diseases as disordered states of this 'vital force', and believe that it is only on the level of this 'vital force' that the cure of diseases might take place.

It is not here intended to convert the ongoing scientific discourse on therapeutics into a dialogue between the divergent world views of spiritualism and materialism, and hence, I do not here endeavour to question the existence of a 'universal' 'vital force' as such. But, at least we have to agree to replace the concept of 'vital force' with a more rational expression, 'vital process' if we could discuss homoeopathy as a scientific discipline. 'Vital force', whatever it may be, expresses itself in a living organism only through 'vital processes', complex chains of interconnected biological processes known as biochemical pathways. According to scientific viewpoint, a condition of disease is created through some or other deviations in these normal biochemical processes. Hence, every pathology starts as an error at the molecular level. We cannot proceed further with our scientific discourse on homoeopathy, without a consensus at least about this fundamental position of modern science. Scientists of various disciplines, engaged in the study of various natural phenomena, adopt such a practical stand even if ideologically they happen to be absolute spiritualists. It is impossible for any nuclear physicist to engage himself in his particular research activities, viewing the atoms or other material particles as spiritual entities. The homoeopathic physicians also should follow this example. They should be able to deal with phenomena of life, disease, therapeutics, and medicinal substances primarily as material forms and processes. It would be better for homoeopathy at large, if they could confine themselves to a scientific vocabulary, refraining from mixing it up with unnecessary spiritualistic and philosophical jugglery of words, while talking about a scientific theory of therapeutics.

Even if we subscribe to the concept of 'vital force' at the ideological level, we have to answer the question: "How the vital force exists in a living organism?" As molecular level 'vital processes'. Using medicinal agents of material qualities, we can deal with these 'vital processes' only at the

material level. It is an absurdity to think that as physicians, we are dealing with an immaterial 'vital force', that too, using medicinal agents of purely material nature.

There is an argument that homeopathic drugs act not by their 'material qualities', but by an immaterial medicinal force, called 'dynamic force'. But they would not be able to deny that these 'dynamic power' of drugs' are determined by material properties of their constituent molecules, since the 'dynamic power' varies from drug to drug, depending up on their molecular composition. If we were dealing with an immaterial 'vital force' and 'dynamic power', all those different types of drugs we use now become irrelevant. While talking about 'immaterial dynamic healing power', which can be carried in bottles as sugar pellets, we should be aware, how much homeopathy would become a laughing stock in the eyes scientific world. If we are still claiming that there is a spiritual force in homeopathic medicines, independant of material qualities, which is soluble in water and alcohol, can be transferred from bottles to bottles, acts on the 'vital force' when applied on tongue, lost when subjected to physical forces such as heat or electricity, how can we engage in a scientific dialogue? What type of 'dynamic force' is we talking about?

We have to be aware that the theory of 'vital force' was adopted by Hahnemann from vitalistic philosophy then existed in Europe. Since modern material science was only in its rudimentary stage, he was not able to explain the phenomena he observed, in scientific terms. He was naturally compelled to accept some sort of vitalistic explanations for his new inventions.

Now, we live in a new era, totally different from that of Hahnemann. Modern science has unravelled the molecular basis of life and diseases to such a level that we can explain the fundamental principles of homoeopathy on a scientific basis. It is an injustice to the great genius of Hahnemann, if we still continue to stick on to the old unscientific explanations. We should exhibit the intellectual courage to discard the unscientific and obsolete parts of Hahnemannian homoeopathy, same time protecting its inner kernel, such as 'similia similibus curentur' and 'potentization'. We should replace 'vital force' with materialistic concept of 'vital process'.

As long as we continue to hold the adamant stand that homoeopathy is a complete-in-itself philosophical and therapeutic system, resisting any

change and development, there is no chance for meaningful scientific dialogue. It is this adamancy on the part of homeopaths that enstranges this great therapeutic system from main stream science.

The main challenge we face when attempting to offer a scientific explanation of homeopathy, is that homeopaths make the situation complicated by mixing up the basic concepts regarding life, disease, drugs and therapeutics, with idealistic philosophical speculations and their unscientific spiritualistic world outlook.

At the very beginning, we have to adopt certain factors as the foundation of our research. 'Vital force' exists only through 'vital processes', which are absolutely material in its nature. These complex molecular biochemical processes are the material foundation of 'vital force'. A state of pathology is created by some or other deviations happening in these biochemical processes due to molecular errors of pure material nature. Therapeutics is possible only through materialistic intervention in these biochemical processes. Medicines are the material means for such an intervention. It is due to the peculiar material properties of medicines that they are able to intervene in biochemical processes. Therapeutics is a totally materialistic activity. If we do not agree upon at least this much of fundamental propositions, no meaningful discussion will be possible on homeopathy.

Since we are now competent to offer a molecular scientific interpretation of 'similia similibus curentur', and 'potentization', the main fundamental principles of homeopathy, there is no need for relying upon the vitalistic explanations of Hahnemann, based on the concept of 'vital force' and 'dynamic medicinal force'. Instead of the abstract term 'dynamic force', we can now explain the homoeopathic potencies on the basis of 'molecular imprinting'.

Miasms and Chronic Diseases.

Concept of Miasm is the corner stone of Hahnemann's theories about 'Chronic Diseases'. Hahnemann has provided detailed descriptions about three types of 'miasms' such as 'psora', 'syphills' and 'sycosis'. Theories regarding miasms and chronic diseases were developed during his later part of life. He developed these concepts, when he learned from his experience that medicines selected on the basis of similarity of symptoms offered only temporary relief. According to him, 'psora', the miasm of suppressed 'itch',

is the underlying cause of all chronic diseases other than those of venereal causes. 'Psora' is the greatest objection to cure. Other two miasms, 'Syphilis' and 'sycosis' are considered to be miasms of venereal diseases, 'syphilis' and 'gonorrhoea' respectively. Hahnemann considered 'psora' to be the most important and universal one. Unless this miasm is eradicated with appropriate anti-psoric drugs, permanent cure cannot be attained.

The fundamental form of expression of psora is considered to be itching eruptions on skin, that of syphilis unhealing malignant ulcers, and that of sycosis warts and condylomata. symptoms of psora are the different types of itches that appear on the skin. Hahnemann considered these miasms to be inherited through generations of human kind.

Here, we have to analyze the concept of miasms and chronic diseases in the light of previous deliberations on 'similia similibus curentur' and 'potentization'.

Human organism is constantly exposed to the attacks of various types of exogenous foreign molecules and ions, which may bind to the complex biological molecules, thereby deforming their configuration and making them unable to participate in normal bio-chemical interactions. We have understood this phenomenon as the molecular basis of pathology.

If the foreign molecules are of protein nature, a different type of molecular interaction takes place. Native biological proteins having configurational affinity to these foreign proteins attaches to them and removes them from the organism. During this process, some native proteins get configurationally deformed by the action of foreign molecules. These native deformed protein molecules will carry the imprints of foreign molecules on their periphery. Three dimensional pockets, having a configuration complementary to that of foreign proteins are imprinted into the native proteins. These imprinted native proteins become incapable of participating in any normal biological processes, and remains in the organism. Antibodies are in fact such deformed native proteins, imprinted by foreign proteins.

Certain endogenic molecules and ions such as hormones, neuro-chemicals, and other metabolic byproducts such as superoxides, when circulated in excess, may also attach to various bio-molecules other than their normal targets sites, and induce configurational changes in them.

These deformed native proteins may circulate in the system, and attach to various macro-biomolecules, thereby creating various pathological conditions.

Configurational changes in proteins associated with DNA synthesis may ultimately lead to genetic errors, resulting in mutations in genetic material, and hereditary diseases. If the enzymes associated with genetic expressions are deformed, it may affect the process of protein synthesis, and related pathologies. It may be noted that heavy metal ions and certain poisonous substances such as alkaloids and organophosphorus chemicals also can inhibit the enzymes associated with DNA synthesis, and create genetic errors.

Obviously, modern scientific knowledge regarding subjects such as antibodies, genetic expression, molecular imprinted proteins, proteinopathies etc., were not available during the era of Hahnemann, when he took up the study of chronic diseases. Had he understood the bio-molecular basis of these phenomena, he would have provided a theory of chronic diseases entirely different from that he had formulated. At that time, it was a wonderful insight of the the great genius of Hahnemann that enabled him to observe some deepseated factors playing behind the chronic diseases, and he called it 'miasms'. During that period, before the appearance of antibiotics, eczema, leprosy, syphilis and gonorrhoea were rampant in Europe, and were the most dreaded diseases. He observed that in spite of the various primitive forms of treatments available then, these diseases continued their manifestations during the whole life span of patients. Naturally, his study of chronic diseases were more involved with the long term effects of these diseases. He used the term 'miasm' to describe these disease factors. He only meant 'disease toxins'. The miasm of 'itch'(and leprosy) was called as 'psora', the 'miasm of syphilis as 'syphilis', and that of gonorrhoea as 'sycosis'. **Now, we can say that 'miasms' are the antibodies or molecular imprinted proteins created in the organism due to the interaction of native proteins with various bacterial, viral or fungal toxins of protein nature.** Various environmental allergens, and certain endogenous molecules and metabolic byproducts can also imprint up on native proteins and converting them into 'miasms'.

Antibodies produced in the organism against scabies(itch), leprosy, and tuberculosis belong to same class, and give positive reaction to 'tuberculin' antigen tests. This indicates that toxins released by these bacteria have

similar molecular groups in them, and the molecular imprints or antibodies against them also have certain configurational similarities. Actually, they belong to the 'miasm' of 'psora' described by Hahnemann. Homeopaths know that potentized 'tuberculinum' play a role in the treatment of secondary effects of scabies and other skin eruptions.

It is interesting to observe that toxins released by bacteria belonging to mycobacterium group, are molecules containing 'sulphide' in their active groups. The presence of sulphur containing amino acid called Cysteine is responsible for this factor. During infection, bacterial toxins bind to the biological molecules of organism using this sulphide group. Naturally, the imprints or antibodies of these toxins contains complementary negative configurations of this sulphide group. These molecular imprints can attack various bio-molecules in diverse biochemical channels, resulting in different constitutional diseases of 'psoric' nature. We already know that the antibodies produced against bacterial skin infections may attack heart, kidney, brain, and other vital organs causing different types of diseases. Streptococcal and staphylococcal antibodies formed against acute throat and teeth infections may attack synovial membranes of joints, endocardial linings, and valvular structures of heart. During proving, sulphur also binds to the same molecular targets as the bacterial toxins. Please notice here, the similarity between certain symptom groups produced by these bacterial infections and the homeopathic provings of sulphur. Here we get the scientific explanation for the observation of Hahnemann that potentised sulphur is the most important antipsoric medicine, 'The King of Antipsorics'. It is already known that the amino acid called 'cysteine', containing 'sulphide' groups, play an important role in almost all molecular interactions in the organism, involving protein molecules. It may be the reason for the appearance of so many symptom groups, involving almost every organ of the body, in the homeopathic proving of sulphur. Potentized sulphur can compete with the molecular imprints or antibodies, in their interactions with biological molecules, and act as a most powerful 'anti psoric' drug.

Equipped with the knowledge accumulated by modern science in recent years, we are now in a position to provide satisfactory answer to the centuries old riddle of 'miasm' and chronic diseases. There is no further scope or space for metaphysical speculations any more.

In recent years, we have heard a lot about researches on a certain class of disease causing agents, called 'prions'. Prions are deformed complex protein molecules acting as pathogens. Prions were invented during the research on 'scrapie' or 'mad cow disease'. The actual mechanism of normal protein molecules turning into 'prions' have not been well understood yet. Recent studies on the molecular basis of Alzheimer's disease, also indicates to the role of deformed proteins in its pathology. Molecular changes associated with normal aging process also have to be examined from this stand point. In my opinion, these issue can be solved from the viewpoint of molecular imprinting in proteins. More studies are required in this direction.

This is an era of vaccinations. Every human being is subjected to a series of vaccination protocols from the moment of birth, to protect from various diseases. We have to worry about the unknown long term after effects of these vaccinations. Live or attenuated viruses are introduced into the organism to produce antibodies against pathological infections. Actually, this process induces molecular imprinting of native proteins, with the foreign proteins contained in the vaccines. The molecular imprints or antibodies thus formed, shall act as 'miasms' in the organism. f this type of molecular deformity happens in proteins associated with DNA synthesis or genetic expression, it may result in serious genetic abnormalites. It is high time that we realized this dangerous situation. All these deformed proteins created by vaccinations, act as 'miasms', and throw humanity into a sea of complicated chronic diseases much beyond the level observed by even Hahnemann.

Presumably, sulphur potentized above 23C, shall contain molecular imprints of sulphur. Antibodies against sulphur-containing bacterial toxins being molecular imprinted proteins, may contain some groups on their molecular periphery, imprinted with similar spacial configuration as potentized sulphur. Hence, potentized sulphur can compete with these antibodies in binding with bio-molecular targets. At the same time, we should not forget that these antibodies or deformed proteins may contain various other active sites not similar to sulphur. Hence, potentized sulphur may not be capable to antidote all the pathological properties of antibodies.

At the same time, if we could prepare potencies of antibodies themselves, those molecular imprints shall be exact negative complements of those antibodies. They can completely antidote the appropriate antibodies, due to their exact configurational affinity. Homoeopathic Nosodes such as

psorinum, tuberculinum, syphilinum, medorrhinum etc., belong to this class. Appropriate nosodes may antidote the 'miasms' perfectly.

Constitution

'Constitution' is an important concept in homeopathic theory and practice. It may be conceived as the general essence of the personality of an individual. It represents the qualities which make a particular individual different from another. Constitution may be defined as the sum total of physical and mental make up of a person. Constitution is determined by the comprehensive unity of genetic, miasmatic and acquired factors.

Constitution of an individual is determined by the totality of diverse biological processes occurring in the organism, outwardly expressed by subjective and objective symptoms called 'constitutional symptoms'.

There are two main aspects fundamental to constitution. They are :
(1) Genetic and (2) Acquired.

Genetic factors may be inherited or mutational.

General characteristics common to all members of the species are purely genetic. Genetic mutations happened through generations also add up to this fundamental genetic constitution. An individual inherits these traits through genes obtained from his parents. Genetic abnormalities lead to faulty protein synthesis, and may result in deep rooted constitutional pathologies. Genetic mutations due environmental or metabolic causes also may affect the constitution of an individual. These belong to the class of mutational genetic errors.

Acquired factors that may contribute to the constitutional make up are many. The locality, climate, soil conditions, water resources etc., are very important in this category. Exposure to sunlight, exercise, environmental radiations, etc. are also very decisive.

The food we eat and the method of cooking will also play their role. We homoeopaths are aware of the phenomenon of 'calcareo' constitution developing in persons who regularly consume excess calcium. Same way, Natrum Mur constitution is implanted upon a person who regularly consume excessive sea salt. Those who take in plenty of vegetables acquire vegetable

nature similar to Nux. Meat eating and fish eating also influence constitutions. Excessive vegetarian diet, especially raw vegetables contribute in developing Nux Vomica constitution. Most of individuals consuming alcoholic beverages containing various phytochemicals regularly, end up with Nux constitutions. The staple food like rice, wheat, potato etc., also contribute in deciding constitutions. Children consuming large quantity of milk or egg may end up in certain constitutional groups. Chemicals, alkaloids, glycosides, enzymes, phyto-chemicals and hormones contained in various food articles also contribute their share. The antibodies which formed as a result of vaccinations or infections, production of excess hormones in the body etc., are also important. Emotional states, occupations, and history of diseases etc., are also deciding factors.

Various endocrine secretions, neuromediators, and neurotransmitters are capable of influencing the constitutions of individuals. We know, chronic grief developing constitutions of Natrum mur, disappointments that of Aurum, indignation that of Staphysagria, anxiety situations that of Argentum nit, jealousy that of Lachesis, excessive sexual emotions that of Hyscyamus, suppressed sexual instinct Conium, certain uterine complaints Sepia, female sex hormones Pulsatilla, etc, etc.

The term 'constitution' indicates the sum total of the deviations gradually happening in the complex molecular processes which are the fundamental to the existence of the organism.

Totality of constitutional symptoms reveal the personality of an individual. We cannot expect a perfect cure without considering the constitutional background.

It is irrational to expect a single homeopathic similimum covering all the constitutional traits of an individual. The constitutional nature of an individual is revealed to us through different groups of symptoms representing diverse constitutional deviations belonging to genetic and acquired molecular errors. One drug may cover one aspect of the personality, where as another drug cover another aspect. Yet another drug may be required to cover a third aspect. We can observe different 'train of symptoms' representing each aspect of the constitution. For example, an individual may show separate 'train of symptoms' indicating Lycopodium, Calc Carb and Sulphur, and all these drugs are required to cover the totality of his constitution.

As far as scientific homoeopathic treatment is concerned, collecting all the constitutional symptoms, and grouping them into appropriate ‘train of symptoms’ is very important to determine the constitutional drugs to be included in the total treatment package.

Mental Symptoms and Peculiar Sensations

Peculiar mental symptoms and special sensations are given primary importance in homoeopathic therapeutic applications. It is particularly insisted by some masters that selection of medicine should be done only after specially considering the peculiar mental symptoms and special sensations exhibited by the patient. This special importance to mental symptoms were given on the theoretical reasoning that disease primarily originates in the level of vital force, and mental symptoms are the real language of deranged vital force.

During our earlier discussions, we have already found that diseases originate in the vital molecular processes, as deviations caused by some or other molecular errors. Obviously, mental and physical symptoms, whether subjective or objective, are the expressions of these molecular errors. Mind, consciousness, feelings, emotions, understandings, thought, sensations, mental symptoms etc., are the functions of a complex material system, known as brain and nervous system. There is no mental symptom without brain. Brain is the material substratum of mental symptoms. When some molecular errors occur in any biochemical channels in the organism, the information will be passed to the central nervous system, through concerted actions of bio-molecules belonging to the class of neuro transmitters and neuro mediators. This initiates complex bio-chemical processes in different regions of the central nervous system, and expresses as mental symptoms and sensations. Each group of special sensations and abnormal mental symptoms indicates particular deviation in one or other molecular processes in the organism.

Any pathologic deviation in the biochemical processes instantly create certain reverberations in the neuro-endocrine systems. These reverberations are the real basis of diverse mental symptoms and special sensations. These processes are mediated by complex molecules known as hormones, neuromediators and neurotransmitters. Limbic system, being part of central

nervous system plays a major role. Hypothalamus, pineal body, pituitary gland, thyroid gland, parathyroid gland, heart, skin, adipose tissues, stomach, liver, pancreas, kidneys, adrenal gland, testis, ovary, placenta, uterus- all these organs function as part of this complex neuro-endocrine system, synthesizing different types of hormones. Aspartate, N-Acetylaspartylglutamate, Glutamate, Gamma-aminobutyric acid, Glycine, Acetylcholine, Dopamine, Norepinephrine, Epinephrine, Octopamine, Tyramine, Serotonin, Melatonin, Histamine, Gastrin, Cholecystokinin, Vasopressin, Oxytocin, Neuropeptide Y, Pancreatic polypeptide, Peptide YY, Corticotropin, Dynorphin, Endorphin, Enkephaline, Secretin, Motilin, Glucagon, Vasoactive intestinal peptide, Growth hormone-releasing factor, Somatostatin, Neurokinin A, Neurokinin B, Substance P, Bombesin, Gastrin releasing peptide, Nitric oxide, guanylyl cyclase, Carbon monoxide, Anandamide, Adenosine triphosphate etc., are the important neuromediators and neurotransmitters.

All the fantastic sensations and peculiar mental and physical symptoms are the result of inter-related chemical processes involving limbic system and central nervous system mediated by above said chemical substances.

Hence, homoeopathy utilizes these sensations and mental symptoms to locate the exact picture of pathology and concerned molecular blocks. Thus, we can select and apply an exact therapeutic agent to relieve these molecular blocks on the basis of 'similia similibus curentur'. Certain molecular errors happening in certain bio-chemic channels reflect themselves through sensations and mental symptoms, much earlier than observable objective symptoms are produced. Hence, we erroneously think that such diseases begin in the mental plane, and later move to material plane. **All diseases begin in the plane of material vital processes as molecular errors, and the mental symptoms indicate their reflections in the chemical processes of central nervous system. Obviously, cure also happens in the material molecular level, and hence therapeutics is a fundamentally material process.**

These peculiar sensations and mental symptoms help us correctly select an appropriate homoeopathic medicine, according to the principle of 'similia similibus curentur'. Since the mental symptoms and special sensations appear much before the appearance of observable material changes in the organism, homoeopathy is able to intervene in the biochemical deviations much earlier in the disease process.

‘Totality of Symptoms’

“Totality of Symptoms” is yet another controversial concept in homeopathy. Homeopaths differ from each other on the interpretation and application of this concept. We may hesitate to admit, but most homeopaths are very much confused over it.

Based on the ideas discussed in previous chapters of “Dialectical Homeopathy”, now we have to examine the concept of ‘totality of symptoms’ in detail.

“Total symptom” and ‘Totality of symptoms’ are different concepts, according to ‘Dialectical Homeopathy’.

Any individual symptom, representing a particular molecular error in the organism, exists as a ‘symptom complex’, consisting of its associated symptoms, with their qualifications such as causations, locations, sensations, aggravations, ameliorations, concomittants and extensions. Such a symptom complex may be called a ‘total symptom’. A ‘total symptom’ may be repertorized in its own capacity, and similimum determined.

An individual may be presenting more than one separate ‘symptom complexes’. Sum total of all separate ‘symptom complexes’ may be considered as ‘totality of symptoms’ of an individual. For a perfect cure, we should give a combination of drugs obtained from repertorizations of all ‘symptom complexes’ separately.

A particular pathologic deviation in a bio-chemical channel, caused by a particular molecular error will be expressed as a ‘symptom complex’. An individual may be having pathologic deviations in various biochemic channels, caused by different types of molecular errors. Obviously, there will be different ‘symptom complexes’ existing simultaneously.

Each ‘symptom complex’ consists of a prominent clinical presentation, with its qualifications such as causation, location, sensation, aggravation, amelioration, concomittants, alternations, extensions etc. When all the available aspects are considered, this symptom complex becomes a ‘total symptom’ by itself. Concomittants, alternations and extensions have special importance, as they are links to associated symptoms.

When analyzing a case, we should group each subjective or objective symptom expressed by the patient in its relationship with the ‘symptom complex’ it belongs.

‘Totality of symptoms’ of a patient consists of the sum total of individual ‘symptom complexes’ representing different molecular errors and pathological conditions. ‘Totality of symptoms’ will represent the total constitutional picture of the individual.

Symptoms belonging to general physical and mentals may be grouped into ‘symptom complexes’, and appropriate similimum selected.

Prescribing similimum on the basis of individual ‘symptom complexes’ may be successful in giving relief to the patients in their acute complaints and pathological conditions. Usage of ‘specifics’ and ‘key-note’ prescriptions rely upon this method. However, for a perfect cure, we will have to prescribe on the basis of ‘totality of symptoms’ of a patient, covering the sum total of individual ‘symptom complexes’, representing different molecular errors and pathological conditions, including constitutional deviations.

Here, each ‘symptom complex’ may require separate similimum. Obviously this discussion leads us to the necessity of a ‘combination of similimum’ to effect a perfect cure.

On Prescribing Multiple drugs

Homeopaths generally consider that prescribing more than one medicine at a time, simultaneously, alternatively or mixing with each other is totally unscientific, un-principled and un-homoeopathic practice. Of course, they quote extensively from our great masters as supporting evidences. If one is any how constrained to do so in certain compulsory practical situations, it is done with a conscience of guilt as if he is committing a grave sin. We all shy to declare openly, and try to cover up what we have done. The theory of ‘one medicine, one dose’ is considered to be the golden homoeopathic rule, and everybody strive to convince others that he is an ardent follower of this rule. People who claim to follow the ‘one medicine, one dose’ rule are held in high esteem by the profession, as true homoeopaths .

We have to examine this issue with honesty and a rational scientific mindset. Is it acceptable in homoeopathy to prescribe more than one medicine at a time? To answer this question, we will have to examine certain fundamental factors here.

In homoeopathic terminology, any sample of drug substance used for proving is considered as a single entity. It is called a single drug, even though it may be a mixture of several substances. For example, an alcoholic tincture extracted from the plant *Nux Vomica* is evidently a mixture of many types of enzymes, alkaloids, glycosides, phytochemicals, and other organic and inorganic molecules. Minerals and chemicals absorbed from the soil, water and atmosphere will also be part of it. It may contain various accidental contaminants and pollutants also. Yet we consider it as a single medicinal substance!

When we introduce a quantity of tincture of *Nux Vomica* into the living organism for proving, its constituent molecules are instantly subjected to various chemical processes such as ionization, hydration and certain chemical transformations. Constituent molecules are carried and conveyed through blood and other internal transport systems to cells in different parts of the body. They interact with various enzymes, receptors and other biological molecules inside the organism. These interactions are decided and directed by the chemical properties of individual drug molecules, and their specific configurational affinity towards individual biological molecules. It should be noted that constituent molecules of *Nux Vomica* interact with different biological molecules, not as a singular entity, but as individual molecules and ions. These individual drug molecules and ions are capable of binding to some or other biological molecules, effecting configurational changes in them, and thereby inhibiting the bio-chemical processes which can take place only with their presence and mediation. Such molecular inhibitions in bio-chemical channels result in a condition of pathology, expressed as a train of subjective and objective symptoms, due to the involvement of neuro-mediator and neuro-transmitter systems.

The symptoms we get from the proving of *Nux Vomica* are in reality the results of diverse deviations in different bio-chemical processes and channels, created by the drug molecules contained in it, in their individual capacity and specific configurational affinity. Each type of drug molecules binds to a specific group of biological molecules, and creates their own individual groups of symptoms. Suppose we could completely remove all

molecules of a particular alkaloid from a sample of Nux Vomica before it is used for proving. Naturally, during the process of proving, we shall be missing the groups of symptoms that should have been created in the organism by the molecules of that particular alkaloid. This type of proving may be called 'differential proving'. By conducting such differential provings, we can learn about the particular state of pathology that may be attributed to individual constituent molecules contained in each medicinal substance. More over, this type of scientific differential provings may be utilized to study the biological effects of various constituent molecules of drug materials that we erroneously consider as single drugs. Such differential provings may disprove our mis-conceptions regarding 'single drug' at large. This is a subject that warrants serious attention from the part of homoeo researchers and research institutions.

There are a few more points to be considered in association with the issue of 'single drug'. Chances of drug samples used in proving being contaminated with various environmental particles and foreign molecules should be seriously considered here. Especially in the olden days of most of the drug provings, our knowledge regarding environmental pollutions and contaminations was very limited. During drug proving, molecules of such contaminants also would have obviously undergone proving, along with original drug molecules. Especially for homoeopaths, who are convinced about the power of micro doses, this factor cannot be overlooked. The water, alcohol, sugar of milk etc., used in the process of preparing drugs for proving may also have various contaminants. The vessels, utensils, equipment, tools, air, and provers themselves also may add their own contaminations. These contaminants and impurities also would have been subjected to proving along with original drugs, and their symptoms also included in our materia medica unknowingly, although we don't take these factors seriously into account. We should be aware of the fact that the biological deviations created in the prover by these un-recognized foreign molecules are also included by us in the accounts of medicinal substances used for proving. It means that at least some of the symptoms we learn in the Materia Medica of a drug may not be actually related to that drug at all, but to the contaminants. This issue will have to be considered in more details later, when discussing about 'materia medica'.

It is not realistic to imagine that the same drug sample of nux vomica used for proving is always used for preparing its potencies also. It may have been procured and prepared from another location, climate, environment,

time and circumstances. All of these factors may necessarily influence their chemical constitution also. Contaminants and pollutants also differ with time, place and persons who handled it. Yet, we are obliged to call all these samples as nux vomica, and use it as same drug, believing that it is a 'single drug'.

In reality, potentized nux vomica we get now from pharmacies are prepared from samples very much different from the samples used for proving it two hundred years back. It might not necessarily be the same contaminations and foreign molecules which happen to be mixed with the drug during procurement and potentization. Entirely new type of impurities and foreign molecules, different from proven samples, shall definitely get mixed with drugs while potentizing. Naturally, these contaminants and foreign molecules also get subjected to potentization along with original drug molecules. It is evident that the homoeopathic potencies of nux vomica we get from pharmacies contain the potentized forms of these new contaminant molecules also. In other words, they are mixed with potentized forms of these unknown substances, entirely different from those were subjected to proving. We cannot ignore the fact that we are not using potencies of same drug, that have been proved earlier and recorded in the materia medica, eventhough we call it with same name. It is composed of an entirely different mixture, much more different in molecular structure from the one subjected to original proving. We use the potentized form of this new combination, on the basis of symptoms produced by another combination earlier, using the therapeutic principle 'Similia Similibus Curentur'. Is not this realization somewhat embarassing? Unless we provide convincing solutions to the ethical, theoretical and practical problems raised by this situation, it would be unfair to continue claiming that we are using 'single drugs'!

The following facts are evident from this deliberation. At least some or other groups of symptoms attributed in the Materia Medica as that of a particular drug substance used for proving might not be related to it at all, but to the contaminants subjected to proving. Same way, in the potentized form, we are administering to the patient some additional molecules also in the potentized form, entirely different from those subjected to earlier provings. In short, Nux vomica we read in materia medica is different from nux vomica we use for treatment, even though both bear the same label. It means that while there will be some of the expected qualities in the potencies we use, there will definitely be the absence of at least some or

other qualities we expect. Because, certain contaminant molecules subjected to proving and represented in the materia medica, might not be present in the samples used for potentization. It shows how much uncertain and unpredictable is the outcome of homoeopathic medication in present situation.

Now, we have to consider the factor of foreign molecules which are likely to contaminate unexpectedly into the samples used for the commercial preparation of potencies. These foreign molecules have never been proved. We are totally ignorant about the different ways in which they might have interacted with the molecules of the original drug. We have no idea regarding the molecular inhibitions or the groups of symptoms they are likely to produce in the living organism. In spite of all these deficiencies, we apply the potencies of such unknown foreign molecules also, along with the original medicinal substance in to the body of a patient. Same time, we claim we are using ‘single drug’ only!

During our clinical practice, we would have experienced instances of removal of totally unexpected symptoms and diseases from the patient. Those symptoms might not be included in any text book of Materia Medica of the given drug. I suspect it may be the potencies of those unknown impurities entering during potentization that is playing this trick.

The above facts more than expose the hollowness of our belief and often repeated claim that we give a ‘single medicine’ to our patient. It is undeniable that we are using medicines selected on the basis of similarity of symptoms, mixing it with potencies of different types of impurities as well. This is an unpleasant situation which we cannot neglect. We should understand that we are giving the patient a mixture of potencies of different types of molecules, about some of which we have no idea at all. Same time, our medicines provide expected results when applied correctly on the basis of ‘*similia similibus curentur*’. It shows that the presence of potencies of any unproved and unknown foreign molecules in no way negatively affect the effectiveness of the potentized medicine we use.

During proving of drugs, the molecules and ions contained in them act individually up on different bio-molecules, on the basis of their configurational affinity, and produce their own groups of symptoms. Like wise, when drugs are potentised, the constituent molecules and ions are individually subjected to a process of molecular imprinting in water-alcohol

mixture, forming hydrosomes, that are exact counteractive configurational factors (CCF) of original molecules. That is why the presence of impurities which enter at the time of potentiation never adversely affect the quality of the potencies of original drug. All the potencies, that we consider as single medicine are in reality a mixture or combination of molecular imprints of different types of independent molecules and ions, which never interact with each other in potentized form. This revelation prove that there is no harm to the molecular imprints of original drug molecules contained in the potencies, even if potencies of any foreign molecules happen to be mixed with them, deliberately or otherwise. More over, when introduced into the organism, these molecular imprints interact with biological molecules in their individual capacity, on the basis of configurational affinity. Since molecules and ions are subjected to molecular imprinting in their individual capacities, and they cannot interact with each other in that form, there is no chance of happening any harm, by mixing two or more samples of potencies of different drugs.

There is the least possibility of any constituent molecules of drug substance remaining in their potentized forms above 23c. Only molecular imprints will remain. Hence, when higher potencies of two drugs are mixed together, there will be no chemical interaction taking place between them. In such a mixture, the molecular imprints of constituents of both samples will remain independent, without influencing each other, and with out losing their own individual qualities whatsoever.

What happens when such a mixture of two or more potentized drugs is introduced into the organism of a patient? Naturally, the molecular imprints of each constituent drug molecule interacts with biological molecules and pathological molecules individually, based on their specific configurational affinity. As counteractive configurational factors, they can bind to the pathological molecules, which are similar to them. The biological molecules are thereby relieved from inhibitions caused by pathological molecules. This process ultimately removes the state of pathology, and relieves the subjective and objective symptoms of disease. A homoeopathic cure is said to be effected. Due to their specific configuratioanal affinity, each type of molecular imprints can locate, identify and bind to exact molecular targets, whereas in the absence of exact molecular targets, these imprints stay neutral, since they are composed of mere water and alcohol molecules. The saying that ‘if a homoeopathic potency is not similimum to a patient, it will not act’ is explained here.

The question of acceptability of administering two or more homoeopathic medicines in potentized form, by mixing, alternating, or simultaneously, should be discussed in the light of the above findings.

It is a very important fact that the drugs in the potentized form, which have no similarity with any group of symptoms shown by the patient, will not be able to create any sort of reaction in the living organism. Chemically, potentized drugs being only a mixture of alcohol and water, their chemical properties will remain confined to that molecular structure. Therefore, when we mix homoeopathic potencies of different drugs together, there is no chance for any chemical interactions to take place. More over the medicinal properties of the diverse types molecular imprints contained in them are not in any way destroyed by this mixing.

To conclude, there is no harm in mixing together, alternating or applying simultaneously, any number of potentized homoeopathic drugs above 23c. As such, there is no need of any guilty feeling on the part of homoeopaths who practice this method. They need not shy away from declaring this fact openly, fearing that it is unscientific.

Drug Relationships

Drug relationship is a subject about which most homoeo practitioners are very much worried and confused. Some practitioners very much rely upon 'drug relationships' even in deciding their treatment protocols. Concepts such as 'complementary', 'inimical', 'antidotal' etc., are frequently utilized in everyday practice. Some doctors even deviate from the theory of similimum, due to their over indulgence with 'drug relationship' protocols. When prescribing a drug based on its so-called complementary relationship to the earlier prescriptions, we forget to consider whether it is a similimum by totality of symptoms. Yet, we call it 'classical' homeopathy. When searching through the literature and authorities regarding drug relationships, it will be seen that no serious scientific studies have been done on this subject. Most of the drug relationships are proposed by empirical clinical observations of practitioners, and not corroborated by scientific studies or evidences. More over, practitioners who are not much bothered over this relationships between drugs swear that their experiences prove otherwise. Some homeopaths prescribe so-called inimical drugs even simultaneously or alternately, and get expected clinical results.

We have already seen during our previous deliberations that in homeopathic potencies above 23C, there is no chance of drug molecules to exist. These preparations contain only molecular imprints of constituent molecules of the drug substance subjected to potentization. Molecular imprints are only supramolecular formations or hydrosomes. Chemically, they contain only water and ethyl alcohol molecules. Even a given sample of homeopathic potency contains hundreds of types of individual imprints, representing the diverse types of molecules contained in the original drug substance. It is clear that they co-exist without disturbing or influencing each other in anyway, same time preserving their individual properties as molecular imprints of specific drug molecules.

1. This clearly indicates that highly potentized homeopathic preparations cannot interact with each other, since they contain no drug molecules. Obviously, they are not likely to engage in any mutual interaction within or outside the organism. They can never antidote or destroy each other.
2. Same time, the case of mother tinctures and preparations below 23c potencies may be totally different. They contain crude drug molecules, which can interact with each other due to their chemical properties. The concept of 'drug relationships' may be valid in the case of these low potencies. Low potencies may be more active than crude drugs, since they contain free molecules and ions.
3. Low potencies and mother tincture of a drug may antidote higher potencies of same drug, due to the interaction with the counteractive complementary factors(CCF) contained in the higher potencies.
4. Same way, low potencies and mother tinctures of a drug may antidote higher potencies of another drug that may contain similar constituent molecules, due to the interaction with the counteractive complementary factors(CCF) contained in the higher potencies. Obviously, drugs containing similar molecules may have more or less similar symptomatology during drug proving.
5. Higher potencies of a drug may antidote the physiological effects of low potencies and mother tinctures of same drug, due to the

interaction with the counteractive complementary factors(CCF) contained in the higher potencies.

6. Same way, higher potencies of a drug may antidote low potencies and mother tincture of another drug, that may contain similar constituent molecules, due to the interaction with the counteractive complementary factors contained in the higher potencies.

If there is similarity only between certain types of constituent molecules of two drugs, partial antidoting is possible. That means, molecules having configurational similarity only are subjected to antidoting by this way. Such drugs will have partially similar symptomatologies.

We should be aware of the possibility of dangerous chemical interactions that might result between the constituent drug molecules of different drugs, when we mix or administer two or more mother tinctures and low potency preparations together.

Mother Tinctures

We know that many homeopathic practitioners prescribe plenty of mother tinctures and low potency preparations. They do very successful practice also. But, I am a bit suspicious regarding the desirability of using mother tinctures and low potencies, especially in a routine way for long terms.

It may relieve some of the symptoms, of course. But chances of emerging new pathological conditions really exist in such a treatment protocol. We must not forget that the symptomatologies provided in our materia medica give the list of symptoms that can be generated in healthy persons by the use of these drugs in crude form. Indiscriminate long-term use of mother tinctures containing plant enzymes, poisonous alkaloids, glycosides and various other phyto-chemical ingredients is an unpardonable crime even if it is done in the name of homeopathy. The drug molecules and ions contained in these tinctures might give temporary relief by nutritional supplementation, or competitive relationship to pathological molecules due to configurational similarity. But it is evident from their symptomatologies that those molecules and ions are capable of creating dangerous pathological molecular inhibitions in various bio-chemic channels in the organism. We should never forget that the subjective and objective symptoms provided in our material medica were created by the molecular deviations happened in

healthy individuals during drug proving. Hence in my opinion, it is ideal to treat patients using potencies above 23c, which do not contain any trace of the drug molecules of the original drug. If our selection of drug is correct, there is no chance of failure in such a protocol. Other wise, it will have to be considered as identical to Ayurveda, Allopathy or Herbal treatment. Those who indulge in excessive use of mother tinctures, without bothering about the constituent drug molecules and their adverse long term impacts on the organism, are more hazardous to human health than our allopathic counterparts. I humbly request them to think over.

From our materia medica works, it may be understood that most of those people who had participated in proving of *Hydrastis Canadensis* developed symptoms of gastric ulcer and hyperacidity along with many other deep seated pathological conditions. Doctors who administer large doses of *Hydrastis Tincture* to relive gastric symptoms as part of homoeopathic treatment should note this point . Of course, we may get temporary relief, by the way of competitive relationships with pathological molecules, due to configurational similarity of drug molecules and pathological molecules. The prolonged use of *Hydrasts Tincture* not only produce the symptoms mentioned in the materia medica, but may even induce very serious genetic errors to happen. If *hydrastis* is the similimum for the patient, it will be effective in high potencies. This is real homeopathy.

Please do not be provoked when I say that who give *Passiflora* for inducing sleep, *Rauwolfia* for lowering blood pressure and *Syzijium* for high blood sugar in their tincture form, are not practicing ideal Homeopathy even if they may be well known Homeopaths, producing results. No homeopath with some common sense, who had carefully read the materia medica of *Alfalfa* will dare to prescribe it as tonics to improve the appetite and general health of innocent children. It is evident from its symptomatology that *Alfalfa* is capable of producing diabetes, bulimia, and upsetting the normal functioning of kidneys.

We should remember that there was no exact knowledge regarding the long term evil effects of many drugs, when many of them were proved and their materia medica prepared. There was least knowledge about the genetic disorders they were likely to produce. It is found in Boecricke *Materia medica* that *Arsenic Bromide Mother Tincture* is indicated for Diabetes. No physician with scientific awareness will even think of prescribing it today. Who will now dare to prescribe *Ars iod 3x*, *Iodum 3x*, *Sulphur Q*, or various

compounds of Mercury and Lead only because they are found in our text books of Materia Medica?

We know of homeopaths who make their patients consume for prolonged periods, the mother tinctures of several drugs, including various patented combinations flooding the market in the name of Homeopathy. How can Homeopaths prescribe them without any prick of conscience? Those who love homeopathy should take urgent initiative to prevent such tendencies either through awareness programs and campaigns, or through stringent legislative procedures.

External Applications

A homeopathic medicine, as any other drug substance, works internally, irrespective of the route through which it is introduced into the body. Even if a drug is applied externally, intended as a local medication, it will be absorbed into the body fluids through capillary systems, conveyed through blood, lymph or other internal transport systems, undergo bio-chemical changes, and act on various target molecules, according to the configuration of their constituent molecules. This is true whether it is applied on the tongue or on the skin. Hence the term 'external application' is a misnomer.

Even if we decide to use a homeopathic medicine externally, it would be ideal to use a simillimum, in potentized form, selected on the basis of symptomatology. In the case of mother tinctures and low potencies, their usage should be considered only if one intends to administer the medicine in its crude form itself. In that case, even though we may get some palliations, it will not be much different from allopathy or ayurveda, and cannot be considered a legitimate homeopathic practice. We should bear in mind the fact that when we apply homeopathic drugs as external applications, they act on the basis of therapeutic principle of 'Similia Similibus Curentur'.

It is an absolute blunder to consider that medicines used externally on the skin act only on the skin. The homeopathic ointments, hair tonics, creams and toilet soaps flooding the market are to be seen as the growing trend of unethical commercialization of homeopathy. Homeopaths should fight this trend with all their might.

Need for Concerted Research

The whole stream of ideas presented in this articles contains a lot of hypothetical deductions developed using known facts and dialectical method, which need to be corroborated by a series of well organized scientific experiments. Author is himself well conscious of his own inescapable intellectual and material limitations in taking up a work of this magnitude. Admittedly, this article is only a very inexpert and incomplete attempt to provide a scientific explanation to the theoretical and practical riddles involved in Homeopathy. Kindly take it merely as an initial step in that direction. But I would dare to declare aloud my great conviction that, primitive forms of nano-technology and modern molecular medicine lay hidden encapsulated in the two century old theory of ‘similia similibus curentur’, and the wonderful art of homeopathic ‘potentization’.

When we delve deeper and deeper in to scientific re-reading of homoeopathy, we cannot help ourselves from bowing again and again with wonder and respect on the feet of the glowing memory of the great master, who invented such a great therapeutic system, which transcends the limitations of centuries. Let us hope that the modern scientific world which had failed to recognize and respect that great genius, would show their grandeur, atleast by rectifying themselves here after.

I think the issues elaborated in this article certainly deserve further concerted research and serious scientific studies. For this, we will have to visualize a mega research project involving investment of huge financial and human resources, with participation of experts in homeopathy, along with scientists having expertise in different related fields. This project will have to incorporate various subjects such as: nano-technology, molecular biology, biochemistry, genetics, pharmacodynamics, neuro-endocrinology, supra-molecular chemistry, water clusters, liquid crystals, clathrate compounds, molecular imprinting, shape memory property etc. This humble attempt of mine may be seen only as an expression of intense desire on my part to draw attention of the leading lights in the field of homoeopathy to the imperative of taking up of such a serious research project. Author will be more than satisfied, even if this article could induce an inner spark of creative desire in the mind of at least one individual having authority and capability to take up this historic mission to fruition.

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