

## THE IMPONDERABLE DOSES

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This brief talk does not intend to clarify obscure points which many investigators of the activities of infinitesimal dosages would find, but only intends to make a roll call of certain facts and circumstances that could be the basis on which such activity stands. We wish to create the desire to continue the investigations with the great help that present day physicists have discovered in the hope of finding the origin of two great phenomena of life, health and disease.

The remedies used by homœopathic therapeutics for more than a century continue having the same applications at the present age as in previous years, since for their selection one must consider the same basic principle, the law of similars.

The result of the application of such principles receives constant clinical confirmation by the investigators who are always desirous of getting to the bottom of facts, and who will never rest until a definite cause is found which permits the realization of the curative phenomena. In order to understand this matter, two of its principal aspects must be understood: (1) when low dilutions are dealt with, (2) when infinitesimal doses are used. The Hahnemann Doctrine, in my opinion, is based upon these two facts.

At any rate, the problem has been proposed many times, and the simple answer has been, that low potencies act according to their chemical properties, by their combining affinities with the compound organic elements that upon modification by the remedy, re-establish the perturbed equilibrium by itself, or by the morbid acting agents. It is clear, that with our meager knowledge it is not easy to advance very far in the explanation of these facts and that outside this answer, with a few other theories that present

slight variation, no other solution has yet been given. Fortunately, our advances in technique allow us to make the statement, that in the not too distant future, such problems can be solved. But the resolution at the moment is still more sound than certain other problems further concerned with the matter because of the intangible material of investigation, and because of the enormous complexity of such experiments.

This is the reason why, in order to at least initiate our investigation, we would be forced to start from what we now understand by infinitesimal dosages. Jarricot says, "A substance exists in its infinitesimal state in a solution, when the mass of the substance, estimated mathematically and supposed to be at the state of homogeneous solution in the solvent, is inferior to the mass of a molecule of a substance for a given volume of solvent."

Lisa Wurmser, one of the most renowned investigators in these matters, does not accept such a definition. She affirms that the doses of a gama and of a one tenth of a gama in a cubic centimeter of space, would represent our sixth and seventh decimal dilutions, respectively, all considered by the investigators as infinitesimal dilutions, which for our school, they are not.

Such investigators, seeing the difficult solutions of such a problem, show its two principal aspects, the one adopted by whoever affirms that there is still matter in high dilutions and that it forcibly has to arrive at a limit. A limit, that according to calculations, is given by the number of Avogadro. That is to say, the number of molecules of an existent substance in a gram molecule of said substances. "Admitting," says Lisa Wurmser, "that under the action of successive dilutions, the gram molecule is divided into fractions regular and proportionate to the diluent, the last dilution containing one molecule of the substance would be approximately the twenty-third decimal dilution and even so, in order to explain its activity, one would be presented

with the necessity of having a molecule present in each drop, or in each granule for such impregnated dilution. Added, that it could be numbered by this mass molecule to be capable of having an elective affinity for a tissue, and to be able at the same time know the cells of such a tissue without losing itself on the way.

A few homœopathic investigators have attached greater importance than is due to the famous number of Avogadro, which is interesting, according to Loch, "When one says in diluting a substance does one go further than the number of Avogadro? Such a phrase has no meaning." On such a question, we must admit that we know perfectly well, the law of variation. The relation between the mass of dissolved substance and the mass of solvent at any given moment and this is so far not known. Accordingly, the actual figure must be established in a precise form so that for each of the definite matters dealt with, there is always that absolute security of the exact molecule composition of the substance that is found. Because of this, any generalization of this matter would be totally false.

Anyway, if one would be sure that in order for a homœopathic dilution to be active, one would have in it a part of the material of the substance, that investigation could be carried out through mathematics in relation with the composition of the definite products used, and thus obtaining the number of Avogadro of the different medicinal substances. But we again say, could it be possible that a remaining molecule be capable of acting upon cells and tissues that are ill? And how would the remedies act where our calculations would indicate that not even that molecule would be present?

After this question comes to our mind, one must pass to this other hypothesis: if there is no material trace of the remedy in question, how does the same act, since there is no doubt that the body will react to potencies such as the 200, 1000, and even higher?

The same traditional physician that for such a long time felt scandalized, and thought that homœopathic medicine was the same as witchcraft and quackery, is presently using highly diluted medicines and writing theses praising what to us is already an old matter. In a pamphlet edited by the Vibus Laboratories, we read a paper presented by the First Medical Congress on Tuberculosis and Silicosis by Dr. Antonio Torres, from which we quote, "The treatment of tubercular ailments through solutions highly diluted, as tuberculin, is old and more or less known. Possibly, not all its good has yet been taken and is not put to general practice, to the incredibility that such infinitesimal doses like one millionth and one billionth of a milligram of tuberculin and even many more would have a therapeutic action and finally the necessity to increase these doses would be useless, and as has already been proven, a failure. Nevertheless, people of scientific prestige that are well experimented in tuberculosins, have used dilutions with a therapeutic end, I will mention Viton, Mich, Deyke of Switzerland and Dr. Esteban Somagy of Brazil that have been using them for over 25 years.

"Concerning ocular tuberculosis, a few authors have used highly diluted tuberculin, among them Dr. Gomez of Barcelona and Dr. Gifford of Chicago, who advised doses of one millionth of a milligram. Worthy of mention are the dilutions employed by Dr. Carlos Pastor of the Ophthalmological Clinic "El Salvador", Santiago, Chile. Dr. Pastor uses dilutions more diluted than usual. He designates them with a curious nomenclature which is related to the number of zeroes and to the titer of dilutions. He considered 2 to the 1/100, 3 to the 1/1000, etc. According to this nomenclature, he carries the dosification up to 32. In spite of these inconceivable dilutions, the author has observed important cures in ophthalmic tuberculosis and has arrived at the same conclusion better exposed in this work. Actually, the use of highly diluted solutions is more generalized and used in many ophthalmological clinics."

In spite of these strange affirmations made in part by a physician, we must not think that one is dealing with a quack, since Dr. Torres has based his prestige on his constant and continuous clinical work. In the same pamphlet, he makes the following statement, "Before the conclusion of this work, I would like to say that in 18 years of employing the diagnosis and therapeutic method of small tuberculin dilutions, or of the methylic antigen and bacillary extracts in patients seen at the hospital and those of my private practice, the amount of those that have been treated reaches high numbers. In order to have an idea, let me explain that more than 200 or 250 patients go to the hospital daily and from 40 to 50 of these go there for the first time. In the laboratories one studies daily, an average of 30 patients and on  $\frac{1}{2}$  to  $\frac{1}{3}$  of them, complete blood studies are done, including luetic reactions, chemical reactions, blood chemistry and hæmatic biometry. Thanks to this material, the staff of the hospital has arrived at the knowledge that the ideas stated in this work are true and that one by one, we could subscribe to the conclusions set forth at the end. Truly, each day that passes adds new cases and new facts to those already acquired. Each one of them shows one more motive for conviction and confirmation and it serves to confirm more, our criterion in this matter of seeing things under the point of view of the patients' tubercular infection and the relations that it could have under certain ophthalmic ailments. Thus, what at the beginning filled us with doubts or seemed to be incredible, is being confirmed day by day until the formation of the actual concept that we have of tuberculosis in ophthalmic ailments, its diagnosis and treatment, a solid concept which has been formed in the same manner that the steel structure of a building is fixed after each rivet is added to it."

We do not like to take your attention away from the fundamental theme that is being commented upon. But before declarations of such a nature as the one already

presented, it is very hard to offer more resistance. Above all, more than is deduced from one point of view in relation to the modalities of tubercular infection and its relations with certain ophthalmic ailments, it should not be strange for Dr. Torres to see that dilutions of an astronomic size like the one followed by 32 zeroes, be active. Or must we think it witchcraft in spite of it all?

On the other hand, if we make comments of this nature, it is not because we need proof as the one already stated, since each one of those of us who has practised homœopathic therapeutics can confirm with facts of everyday practice, the activity of imponderable doses. If we talk of cases like the preceding one, it is only to show that the other side of medical men will talk for us in this matter.

But as we were saying at the beginning, the investigator is still in the dark when it comes to the way these imponderable doses act. Two steps have been proposed; the first one in which one has tried to prove that some matter is present. However, in order to prove this, investigations have been made by the sensible methods that we have available through chemistry, and physics in which ultra-violet radiation, through photo-electric cells measuring the conductivity of the preparations, through spectrography investigating the characteristic lines emitted by them, through artificial radioactivity, trying to demonstrate the presence of radioactive molecules in a solution, through the Geiger Counter, studying the monomolecular films, etc. But each one of these different proceedings has only served to demonstrate that in the different solutions there exists matter only detectable to a certain degree. Such confirmation would allow us to conclude that in the effectivity of high potencies, one can no longer think of the presence of matter.

In order to give an answer to this question, one must go into a great deal of technical discussion. Effectively, there are two that are used; first, the traditional one used by Hahnemann, and the other one by Korsakoff. According to

Berne's table, there exists a large difference between the real value of the preparations obtained under these two methods and in order to give an idea, we give the following table.

T.M.	
1 a. C.	1 a.
2 a. C.	3 a.
3 a. C.	7 a.
4 a. C.	20 a.
5 a. C.	55 a.
6 a. C.	150 a.
7 a. C.	400 a.
8 a. C.	1100 a.
9 a. C.	3000 a.
10 a. C.	8000 a.
11 a. C.	22000 a.
12 a. C.	60000 a.

The corresponding value of the immediate potencies can be obtained through the following formula:  $n = \log_e (1 + X)$ .

As we can see, no one could, however, think that a potency such as the 30 C could be compared with the 30 Korsakoff. In the majority of the cases, the commercial products available in high potencies, have been prepared under the Russian technique. This would allow us to deduce that the so called high potencies still have some matter, but in what proportion? Since then it is easy to determine that this must be found in the form of molecules enormously isolated and that it is easy to think of the high activity that such isolation will give, since it is known that isolated molecules in an adequate diluent have unsuspected dynamic properties.

The most frequent example used in order to give an idea of the activity of dissolved molecules in a vehicle, is that of gaseous matter. Under such conditions, the molecules have a tendency to repel each other, giving origin, because

of their impaction under the recipient that contains them, which is interpreted to be, pressure. In gaseous molecules, the energy that acts, giving them mobility is caloric energy. In the case of matter in solution, it is entirely similar and is manifest in the same condition that molecular activity gives thus origin to osmotic pressure. Could it be thought that this molecular dynamism is capable of bouncing in the molecule of the excipient that is in intimate contact and by such permanently attacked by them? Is it not perfectly known that the fact that simple friction of two bodies generates in the properties of a well known order? Having in mind such simple basis like the one previously mentioned, it is easy to deduce that which pertains to infinitesimal subjects the repetition of such facts must take place.

This explanation of the phenomena is an incomplete one and without the others, this one is difficult to understand. We have to refer to the well known fact of changes suffered in the disposition of molecules that form the crystals of some bodies that are under pressure which when being liquefied and crystallized again can save marks and traces of the pressure that previously acted in their molecular disposition.

I have several in mind. These kind of concepts would not be necessary to make two types of hypotheses which today have been exposed in order to explain the activity of microdosis, for example, materialists and energetists. That is to say, those who believe that a dose will be active as long as an adequate number of free molecules is present in order to obtain an activity purely material in the homœopathic remedy and those who think that through dynamization the material particles no longer exist and the same will convert in a modality of energy.

Unfortunately, as long as the investigations do not pass over a purely speculative ground, it would be very hard to prove any of the facts already mentioned. This will not prevent our patients from continuing to receive the benefit of our therapeutics since the strength of our plans will allow



us to use them adequately, side by side of many types of speculations and on the other hand, the continuous scientific advancement, will allow us to think that there will be one day in which the intimacy of the process of action of our remedies, in imponderable doses would be revealed even though we know what Seneca once said, "Nature does not permit us to explore its sanctuaries all at once. We think that we have started something, but we are only about to begin."

#### REMARKS

W. W. Young, M.D.—This article lays no claim to being exhaustive, conclusive or even authoritative in dealing with this aspect of homœopathic technology. Only a review of the subject is intended. There is also the fervent hope that those who have been researching into the questions of life, health and disease, are now studying these phenomena, will continue to do so and in so doing will present us with more and more of the answer to the matter of the small, the smallest dose.

Clinical use for almost two centuries lends conviction to the premise that changes in physiological behaviour follow the administration of the imponderable dose both in health and in sickness. What would be very desirable would be for us to appreciate how this comes to be.

Of course, when any drug is used in the lower dilutions in frequently repeated doses, our credulity is not too greatly taxed to conclude that results will follow causes in a strictly chemical sense. In accepting this we, of course, oftentimes without a conscious realization of why, do so because we assume that the explanation is to be found in the field of chemistry; the explanation, the entire explanation, is a chemical one. In this day and age, aptly called the chemical age, such a train of thought is not to be wondered at all.

If we turn to the opinions of two authorities representative of the chemical approach to the appreciation of the

imponderable dose we can select Jarricot on the one hand and Lisa Wurmser on the other. As is not unusual in our experience, when we seek enlightenment from experts we find the question more complicated than clarified for they immediately find it difficult to agree on the definition of the imponderable dose. And both of them differ from us in our ideas of the imponderable. Employing many provisos the chemist will not admit of any drug substance remaining after a dilution which to the practical homœopathic physician would be considered a low dilution. This conclusion they arrive at by mathematics and the use of the number of Avogadro. Therefore, employing correct chemical terminology and thinking they conclude that beyond this dilution the drug can do nothing since there is not enough of it present to "act".

All of this follows the assumption that the answer is to be found in the realm of chemistry. Perhaps that assumption is not correct. Loch raises this question and suggests that perhaps physics and chemistry together will provide the explanation. That doses at one time considered ridiculous are now becoming commonplace is evidenced on every hand. Experimenters who lend validity to this observation are, among the many, Torres, Viton, Mich, Deyke, Samogy. Therefore, it is no longer a matter of shall we wait until the academician gives us leave to employ them and that that permission wait upon his ability to theoretically anoint them. The situation is reversed. As physicians we know that results follow their use. We cannot wait till the authorities of chemistry or of physics accept and explain to their satisfaction. Nevertheless the explanation is necessary. The homœopathic physician today is not alone in using dilutions which lack the sanctification of abstruse science, mathematical, chemical or physical.

Actuated by a distrust of their computations the chemist and physicist has investigated with various technical instruments seeking to ascertain if, perchance, beyond the tenth,

the twentieth or the thirtieth, by some unforeseen circumstance there could be detected some trace of the agent no matter how small. The instruments have all been too crude for the purpose. However, so far as we are concerned, if we are prepared to accept the evidence of science, and this we should be prepared to do, we have to conclude that in the higher dilutions there exists no drug material in the chemical or the physical sense. And so we arrive at this juncture: although there exists no material drug substance in the high dilutions there nevertheless occurs disturbances in physiology in the human or other animal, under favourable conditions, in health and in sickness when the pharmaceutical preparation is administered which once contained the drug in a material state.

This proposition is not altered in or influenced or explained by an appreciation of the differences between the decimal and centesimal scale of dilution.

All the explanations, or at least the great majority, endeavouring to explain the "power" of the imponderable dose have employed the inference that in the drug there resided some kind of "potency" as it were, requiring simply and only a means of liberation. Hahnemann entertained this idea often. He inherited it so to speak from Paracelsus.

But is that inference valid? If we apply to the dilution the same concept the physicist uses when he deals with the dynamics of gasses and expanding bodies would we have a valid explanation of the power of the high potency? If we assume that there is friction taking place between the molecules and ions of the drug substance and those of the vehicle we can admit of the possibility of developing a certain amount of energy comparable to static electricity perhaps. So far as the present status of investigation is concerned along this line we are in the realm of speculation. However speculation must always precede actual physical moves.

In the realm of homœopathic philosophy another possibility lurks, a possibility overlooked by all but a very few.

That possibility is that the answer we need is to be found elsewhere than in the field of chemistry or physics be it organic, inorganic, physiological, colloidal or molecular. There is that distinct possibility that the answer is to be found in the field of biology. Hahnemann entertained that idea also as have many others. But that provides material for another discussion.

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## THAT TROUBLESOME COUGH

H. F. W.

A cough at this time of year is often difficult to clear up, and this is probably more so at the present time on account of our lack of resistance, due to deficient diet and increased nervous strain. Apart from association with some definite disease such as bronchitis, pneumonia or whooping cough, most of the persistent coughs are a sequel of an ordinary cold in the head or influenza.

The correct remedy for these latter ailments should prevent the appearance of a cough or at any rate its persistence. Supposing however, such a cough to have become really troublesome, there are a number of possible remedies, and the selection has to be made with care in order to obtain success.

Let us take first the hard, irritating cough, which is a nuisance both to the sufferer and to those about him. There may be no expectoration at all, or a very small quantity after much strenuous coughing. Belladonna is often useful here, when the cough causes a bursting headache and red face, and