

About Homeopathy or «Similia Similibus Curentur»

¹Raffaella Aversa, ²Relly Victoria V. Petrescu, ¹Antonio Apicella and ²Florian Ion T. Petrescu

¹Advanced Material Lab, Department of Architecture and Industrial Design,
Second University of Naples, 81031 Aversa (CE) Italy

²IFTToMM, ARoTMM, Bucharest Polytechnic University, Bucharest, (CE) Romania

Article history

Received: 29-11-2016

Revised: 30-11-2016

Accepted: 13-12-2016

Corresponding Author:

Florian Ion T. Petrescu

IFTToMM, ARoTMM,

Bucharest Polytechnic

University, Bucharest, (CE)

Romania

Email: petrescuflorian@yahoo.com

Abstract: Homeopathy or homoeopathy (from the Greek ὅμοιος/hómoios, "similar" and πάθος/páthos, "suffering" or "disease") is a science created by Samuel Hahnemann in 1796. The homeopathic practice rests on three principles: The similarity, the individualization of cases and the infinitesimal. The use of the infinitesimal was proposed by Hahnemann in the early nineteenth century with the publication of "Organon der Heilkunst" (Organon of the art of healing). The compounds used do not become homeopathic unless they respect the principle of similarity, according to which a patient should be treated with a substance producing experimentally in a healthy person symptoms similar to those presented by the affected person, use of the substance being adapted to the patient thanks to the principle of individualization according to which the homeopath analyzes all the symptoms of the person and not only those related to the disease. Substances chosen according to this method can be administered in non-toxic weighted doses, but most prescribers use them in dilutions, sometimes very large, which have previously been subjected to very high and very frequent vibrations. Although some clinical trials produce positive results, multiple systematic reviews indicate that this is due to chance, questionable research methods, or publication biases. Despite a certain popularity, the therapeutic efficacy of homeopathy has not been demonstrated as a general and permanent solution. The vast majority of the scientific and medical community considers that homeopathy is a pseudo-science coming into contradiction with current knowledge in chemistry and biology established after the fundamental principles of homeopathy themselves proposed more than two Centuries. In particular, they point out that certain homeopathic dilutions are such that the excipient no longer contains a single molecule of the diluted remedy and therefore can't act chemically. Moreover, the fact that effects are observed is disputed by published meta-analyses which conclude that homeopathy has not demonstrated its clinical efficacy beyond the placebo effect and yet, the Homeopathy works, despite some malicious feedback.

Keywords: Homeopathy, "Similia Similibus Curentur", Organon of the Art of Healing, Samuel Hahnemann, Frequent Vibrations, Excipients, Dilutions, High Dilutions, Bioengineering, Biotechnologies, Biochemical Processes

Introduction

Homeopathy or homoeopathy (from the Greek ὅμοιος/hómoios, "similar" and πάθος/páthos, "suffering" or "disease") is a science created by Samuel Hahnemann in 1796 (Homeopathy, From Wikipedia, the free encyclopedia).

The homeopathic practice rests on three principles: The similarity, the individualization of cases and the infinitesimal. The use of the infinitesimal was proposed by Hahnemann in the early nineteenth century with the publication of "Organon der Heilkunst" (Organon of the art of healing), (Hahnemann, 1833).

The compounds used do not become homeopathic unless they respect the principle of similarity, according to which a patient should be treated with a substance producing experimentally in a healthy person symptoms similar to those presented by the affected person, use of the substance being adapted to the patient thanks to the principle of individualization according to which the homeopath analyzes all the symptoms of the person and not only those related to the disease. Substances chosen according to this method can be administered in non-toxic weighted doses, but most prescribers use them in dilutions, sometimes very large, which have previously been subjected to very high and very frequent vibrations.

Although some clinical trials produce positive results, multiple systematic reviews indicate that this is due to chance, questionable research methods, or publication biases (Ernst, 2002; Hemenway, 1894; Haehl, 1922).

Despite a certain popularity, the therapeutic efficacy of homeopathy has not been demonstrated as a general and permanent solution. The vast majority of the scientific and medical community considers that homeopathy is a pseudo-science coming into contradiction with current knowledge in chemistry and biology established after the fundamental principles of homeopathy themselves proposed more than two Centuries. In particular, they point out that certain homeopathic dilutions are such that the excipient no longer contains a single molecule of the diluted remedy and therefore can't act chemically. Moreover, the fact that effects are observed is disputed by published meta-analyses which conclude that homeopathy has not demonstrated its clinical efficacy beyond the placebo effect.

And yet, the Homeopathy works, despite some malicious feedback (Hemenway, 1894).

However, the principle of individualization is not applied for most homeopathic treatments that are often taken in self-medication (Haehl, 1922).

The Australian National Health and Medical Council concluded that homeopathy was ineffective and thus discouraged its use and reimbursement. In 2010, a parliamentary committee asked the UK Ministry of Health to remove homeopathic products from the list of medicines reimbursed, but despite the support of an expert strongly opposed to homeopathy, Edzard Ernst, the withdrawal was not effective. In 2012, the Ministry of Health believing that these products met an existing demand (Clarke, 2001).

In France, authorization to place single homeopathic products on the market is not necessary, since registration with the National Agency for the Safety of Medicines and Health Products (ANSM) is sufficient. However, if the supplier of the homeopathic product must guarantee its safety, evidence of its therapeutic efficacy is not required, unlike conventional medicines.

History

In 1796, the Saxon physician Samuel Hahnemann laid the foundations of homeopathy in an essay and it was in 1810 that he completed his theory with the publication of *Organon der Heilkunst* (*Organon de l'Art de Cure*).

In the 1830 s, homeopathy began to spread in France, but also in the United States. Pharmacists refusing to make these products, the disciples of Hahnemann had to make them themselves. In France, Doctor Comte Sébastien Des Guidi³⁰ created the *Société Homéopathique Lyonnaise* in 1830. His pupils were at the origin of the development of homeopathy in France. These include Dr. Dufresne, Petroz, Curie, Mabit, (Hahnemann, 1833).

At the death of Hahnemann in 1843, homeopathy declined slightly in Europe but developed in the United States and it was only at the beginning of the 20th century, with the appearance of the first laboratories and then the enthusiasm for the Alternative medicine, that it began its industrial history and spread widely to patients.

By semantic shift, the term "homeopathic" has become synonymous with a minimal dose of a product, in reference to one of the characteristics of homeopathy, whereas the original meaning of the term homeopathy is treated according to the Principle of similarity: The substance chosen to treat the sick person is called "homeopathic" (Atwood, 2008).

Hahnemann (Fig. 1) was baptized on the very day of his birth on April 11, 1755, in the Lutheran church of Meissen. He was the third child of Christian Gottfried Hahnemann and his second wife, Johanna Christiane Spieß. His father, a porcelain painter in the famous porcelain factory in Meissen, watched over his education up to the age of ten. He then attended the municipal school, where he showed a gift for languages, for Latin and Greek first, then for French, English and Italian. He then received a scholarship at the princely school of St. Afra in Meissen. When he left, in 1775 he began medical studies in Leipzig, earning his living through language courses and translations into German of physiology and medicine. A year later he went to the University of Vienna for three quarters, where until the money failed him he attended Baron Joseph von Quarin, a professor of medicine and medicine, at the bedside of the sick. Medical director of the Hospital of the Brothers of Charity (Hahnemann, 1833).

In October 1777, Baron Samuel von Brukenthal, whom the Empress Maria Theresa had just appointed Governor of Transylvania, offered him a position as a librarian and a personal physician. Hahnemann accompanied him to Hermannstadt (identical to Sibiu, in Romania) and remained there for almost two years. He apparently saw many cases of malaria and he would have fallen ill himself (which is important for his tests with cinchona). During his stay at Hermannstadt, he joined the Masonic lodge St Andrew of the three Lotus.

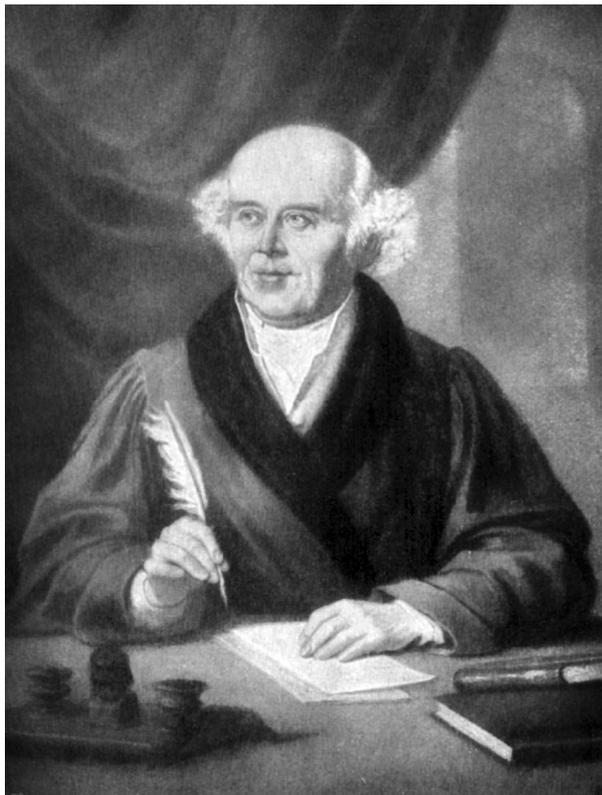


Fig. 1. Samuel Hahnemann, the father of homeopathy

Located in Sibiu, in Romania, Hahnemann manages to make homeopathic science bases.

Bruckenthal Baron's museum has preserved and today the exhibition of homeopathic remedies created by Hahnemann.

Then he completed his medical studies at Erlangen and in August 1779 he passed his doctorate.

He settled first in a mining town, Hettstedt, which he left for Dessau in the spring of 1781. It was there that he met Henriette Kuchler, the daughter-in-law of the apothecary Haeselen with whom it is in working relationship. Accepting a post at Gommern, he returned a year later. He was married to Henriette Kuchler in Dessau in 1782; of their union will be born 11 children.

In the years that followed, he practiced with varying degrees of happiness in a large number of cities of northern Germany and middle Germany as a doctor, a chemist, a translator and a writer. At times he completely abandoned the practice of medicine, "because it cost me more than it brought me and was often paid only for ingratitude" (letter of 29 August 1791, quoted by Jütte, Page 48) or because he did not believe in the efficacy of medicine as practiced at the time. He devoted himself to chemical experiments, translations and publications. At other times, he could scarcely escape the patients: "I almost could not write, because in recent weeks the clientele is so abundant in Eilenburg, Often happens not

to have time to eat" (letter of September 18, 1801, quoted from Jütte, page 74).

In 1788 he published on the Means of Recognizing Iron and Lead in Wine, where he exhibited a method of highlighting the denaturation of wine by the supply of toxic lead. This "wine test Hahnemann" which will be mandatory for the wine merchants of the city of Berlin-earned him a certain notoriety.

It was in 1790, on the occasion of a work of translation of Lectures de la Matière Medicale by William Cullen, that he was led to experience the properties of cinchona on himself. In 1791, Hahnemann was elected a member of the Churfürstlich Mayntzische Academie nützlicher Wissenschaften in Erfurt.

If he began to practice his principles of homeopathy from 1796, it was from 1800 that Hahnemann really began to practice homeopathy. From that date he kept all his observations in his case books, the sick journals. Beginning in 1800, Hahnemann began to prescribe infinitesimal preparations, not hesitating to describe homeopaths using doses of half homeopaths. Not meeting the hoped-for success of his colleagues, Hahnemann moves to Leipzig, a university town, where he undertakes to give lectures, after passing a thesis in 1811 to attain the status of reader: It is indeed in Leipzig that will be trained His first disciples, such as Stapf, Gross, Moritz and Wilhelm Müller. It was also in 1811 that he published *La Matière pure medical*.

Hahnemann was found guilty of an illegal practice of pharmacy by the Leipzig Court of Justice in 1820, attacked by his confreres and pharmacists. A year later he was offered shelter in Köthen, where Duke Henri of Anhalt-Köthen offered him the as private physician of the ducal court, as an aulic counselor, with the right to make his own medicines; He will remain there for fourteen years.

It was at Köthen that he published, in 1828, the second major work, describing his conception of homeopathy: "The treatise on chronic diseases, their special nature and their homeopathic treatment". This work led to a split in the homeopathic milieu.

In 1830, his wife Henriette died. Hahnemann continued to live in Köthen, with two of his daughters.

In 1831 he published three texts on the treatment of cholera.

On January 18, 1835, Mélanie d'Hervilly-Gohier married Samuel Hahnemann in Köthen. They left the town on June 7, 1835, to arrive in Paris on June 27, 1835. In August, Hahnemann obtained permission to practice homeopathy (rue Madame, then rue des Saints-Pères and finally rue de Milan). Some fifty physicians were already practicing homeopathy in Paris. He died in his 89th year (2 July 18439), in Paris; Joseph Antoine Chatron, one of his students, attended his last moments alone and closed his eyes. His wife obtained permission to keep her husband's body until July 11, the date of the

funeral in the cemetery of Montmartre. It was not until May 24, 1898 that the remains of Hahnemann were translated to the Père-Lachaise cemetery (Homeopathy, From Wikipedia, the free encyclopedia).

Count Sebastian Des Guidi (1769-1863), of Italian origin, is often given as the introducer of homeopathy in France, in Lyon, in 1830. He founded the Homeopathic Society of Lyons which will later be the origin Of the Gallican Society. In 1827 in Strasbourg Bigel wrote about the work of Samuel Hahnemann while Paul Curie gave consultations in Paris as early as 1824. From 1832, most of Hahnemann's works began to be available in French. Hahnemann himself will settle in Paris in 1835. Homeopathy will penetrate quickly in France, Paris - and Lyon of course, but also in the Province.

Homeopathy soon encountered the opposition of the medical authorities. In 1835 the Academy of Medicine, which feels itself in a position of weakness, condemns homeopathy, which will not prevent the latter from prospering. At the end of 1858, after a defamation lawsuit brought by twelve homeopaths to the newspaper the medical union before the first chamber of the Civil Court of the Seine, homeopathy receives a "blame" from the courts.

In 1865, the Senate of the Empire issued a dilatory vote published in the *Moniteur universel*. The Minister of Education, however, authorizes the teaching of homeopathy.

The development of homeopathy in France is carried out through various organizations.

In 1833, Pierre Dufresne of Geneva founded the *Société Homéopathique Gallicane*, which brings together French-speaking homeopathic physicians (Swiss, Belgian and French).

In 1835, during a congress in Paris, a quarrel opposed "classic" or "purist" homeopathic physicians to "clinical" or "eclectic" homeopathic physicians. The latter, including Jean Paul Tessier, a doctor in the hospitals of Paris and his pupil Pierre Jousset, are grouping themselves around the Parisian homeopathic medicine society: They refuse the high dynamizations and are close to abandoning the principle of similarity Defend at the Hahnemannian society of Paris people like Leon Simon, Jahr and Croverio. However, due to the proclamation of the second Republic, the spread of the cholera epidemic and to face the opposition encountered on the part of official medicine, the two companies will merge in 1850, within a "Gallican Society of Homeopathic Medicine". On January 1, 1855, Tessier founded *Hôtel-Dieu de Paris*, the Medical Art which would be the organ of the new school, where homeopathy occupied only the therapeutic side. The Medical Art wanted to testify of a possible union between the official therapeutic and the homeopathic approach. As a result of the criticism he encountered among the Hahne- manians, he resigned in 1856 from

the *Société Gallicane*, even going as far as to declare in the Medical Art that he rejected the qualification of homeopath. In 1860 Tessier then founded the "*Société médicale homeopathique de France*" which was developing rapidly. By 1860 there were 443 homeopaths in France, including 140 in Paris, but this is probably a questionable estimate because of the heterogeneity of practices. In 1889, the two trends represented by the *Société médicale homeopathique de France* and the hahnemannian federative society, created in 1868, are found in the French homeopathic society where pure and eclectic hahnemanians agree to recognize the principle of Similarity, the use of infinitesimal doses, the value of Matter and the absolute respect of the experimental method.

Pasteur's discoveries will revive this quarrel. While Pierre Jousset and his pupils, including Édouard Vannier, recognize Pasteurian medicine, many French homeopathic physicians are enthusiastic about the work of the American James Tyler Kent, a supporter of the very high dynamizations. In 1905, Dr. Jules Gallavardin, son of Jean-Pierre Gallavardin (himself a pupil of Sébastien Des Guidi and founder of the homeopathic hospital Saint Luc) published in Lyon the monthly magazine *The Propagator of Homeopathy* (which became in 1932 *Modern Homeopathy*). Léon Vannier created the journal *L'Homéopathie Française* in 1912, around which the eclectic movement organized "French" teaching, while, under the impetus of Doctors Gallavardin, Nebel and Duprat, the proponents of pure Hahnemannian homeopathy "Attached to the very high dynamizations are grouped in the society of homeopathy of the South East and the Swiss Romande or *Société Rhodanienne* of homeopathy.

This same Léon Vannier homeopath in the 16th arrondissement of Paris founded the Hahnemann Dispensary in 1931 to make his specialty accessible to the most deprived and to make it a place of professional training.

Homeopathy was introduced in America by Constantin Hering (1800-1880), an assistant doctor of Dr. Robbi, a renowned surgeon in Leipzig. The latter, hostile to homeopathy, asked Constantine Hering to write a book in which he would demonstrate the ridicule and inanity of Samuel Hahnemann's theories. Hering, before he had an opinion of the Hahnemannian doctrine, wished to study it thoroughly. He therefore began to read all that had been published by his creator and he soon took the greatest interest in it. Finally, with the consciousness and seriousness that he put into everything he did, he tried the action of certain remedies on himself, following the method of Hahnemann and was convinced by the results obtained. He settled in the USA in 1833. He discovered several important homeopathic medicines.

James Tyler Kent (1849-1916) was a famous American homeopathic physician. He created a repertory allowing value to several remedies according to each symptom collected during the interrogation of the patient. The index search then consisted in determining which substance was most likely to cover all symptoms. It is in this spirit that various digital directories were later conceived using computer computing capabilities.

Materials and Methods

Fundamentals

Homeopathy is built on a principle and its technical corollaries formulated one after the other by Hahnemann from 1796 to 1810 (Homeopathy, From Wikipedia, the free encyclopedia); (Kayne, 2006).

The principle of "similarity": The cure of a set of symptoms is brought about by a substance (vegetable, mineral or animal) that causes similar symptoms in a healthy subject: *Similia similibus curentur* ("the like is treated by the like"), (Dean, 2001).

The search for "globality": The application of the principle of similarity and then its verification, take place whenever the search for the most similar remedy has been carried out conscientiously by the practitioner: It is "individualization". Each treatment is thus personalized to each patient, whatever the name of the disease, the search for the "totality" of the symptoms presented by the patient being at the center of the method. It explains the length of the dialogue between the doctor and the patient. The step of observing the symptoms caused by a substance in the healthy individual, which always precedes the application of the principle of similarity and its retranscription corresponds to the establishment of a pathogenesis. In practice, some well-known homeopathic medicines (Oscillocochinum, Sedative PC...) do not respect the principle of individualization.

The technical use of infinitesimal dilutions: The need to reduce the toxicity of the substances chosen by applying the principle of similarity led Hahnemann to dilute and then to strongly agitate its preparations. After each dilution, the preparation is shaken (succussion) vigorously, manually or mechanically, which would allow it to retain its pharmacological effects despite significant dilutions (Kent, 2008).

Homeopathy is opposed to allopathy, a term also invented by Hahnemann, which refers to any drug treatment that is not based on similarity at the time of the therapeutic choice, but on the "principle of opposites", a method used since Hippocrates until At the beginning of the nineteenth century. Thus, phytotherapy is an allopathic care method. Nevertheless, the notions of "principle of contraries" or "principle of similarity" have not been validated experimentally according to current scientific criteria.

Principle of Similarity

Homeopathy was based on the principle of similarity. This principle provides that a person with a condition may be treated with a substance that produces symptoms similar to those of the condition in a healthy person. In practice, the substances chosen may in fact be the one which causes the symptom, or the one which treats it, as Hippocrates has observed.

Homeopathy is based on the principle of similarity formalized by Hahnemann following the following observation: Quinine extracted from bark of cinchona causes, in high dose, a poisoning accompanied by fever, comparable to fevers that the absorption of Quinquina helps to heal. Hahnemann inferred from this observation that there was a causal link between fever due to intoxication and the mechanism of defense against fever activated by the absorption of quinine at therapeutic doses. He then proceeded to verify the universality of this principle by testing on himself the substances (belladonna, jusquiame, arsenious anhydride, sulfur...) whose healing properties were known in his time. He then proposed a generalization of this principle to the whole of therapeutics: It is possible to know the clinical picture of a disease that treats a substance by observing the complete clinical picture that it triggers at various dosages in the healthy individual.

Hahnemann and other authors bring this "principle of similarity" closer to that of the "like" as stated by Hippocrates: "The disease is produced by the like; and by the like which one causes to be taken, the patient returns from disease to health. Thus what produces strangury which is not, removes the strangury that is; The cough, like strangury, is caused and removed by the same things.", (Ullman and Ullman, 1994).

However, modern medical knowledge has shown the invalidity of this simplistic principle: At the very most, it is now known that any substance can be toxic and then fatal in high doses and perfectly indifferent to a sufficiently low dosage (even the most powerful Poisons). This principle has been known since the Renaissance: The Swiss physician Paracelsus established already in the 15th century that "*Nothing is poison, everything is poison: Only the dose makes the poison*".

Generalisation and Individualisation

This corollary of the principle of similarity states that there is no universal care of a disease, a symptom and that one must adapt the care according to the patient. This is what is commonly referred to as "individualization". The homeopath analyzes the specific symptoms presented by the patient as a whole and not just the classical symptoms of his disease. A practice not based on this analysis of specific symptoms of the patient is not entitled to claim homeopathy in the sense of Hahnemann. According to the principles of

homeopathy, substances sold freely for symptomatic treatments do not respect this individualization, since they are presented as being able to treat the symptom whatever the person. This individualisation of treatment is reflected in the terms of sensible types or constitutional types. Since the principle of individualization implies that any study that could prove large-scale inefficiency (or efficacy) is not valid, homeopathy does not meet Popper's criterion of refutability. This implies that homeopathy can't be considered as a scientific theory. This does not mean that the theory is false but that it is a pseudo-scientific theory falling within the absolute domain of the belief of each.

Infiniteness and Dynamization

It was during the generalization of his theory to other diseases that the harmful effects provoked forced Hahnemann to lower the doses by practicing dilutions. To its great regret, the classical dilution, if it diminished the toxic effects, also effaced the pharmacological effects. He then proposed the method of "dynamization," which, surprisingly in his own words, would preserve and modify the pharmacological effects of the substance.

In classical therapy, the effect of substances depends on the quantity administered; Paracelsus said in substance that "it is the dose that makes the poison." It is not the dilution in itself that produces this effect, but the final dose; Dilution is only a process used to decrease the dose to be administered (CAM, 2002).

On the other hand, in homeopathic therapy, it is not the final dose that produces the effect, but the presence of the substance and its presentation (dilution being the main element). Hahnemann concluded from his experiments that shaking the solution after each dilution would maintain a certain therapeutic efficacy. He advises to administer the preparations in liquid form just after having prepared them and without leaving them to rest. This succussion would not be intended to mix the solution well before diluting it again, but to produce shocks without which the therapeutic qualities of the homeopathic remedy would not appear. This process, without which the dilutions would be little or no active, was named "Dynamization" by Hahnemann.

The solvent (most often water and alcohol) is used to carry out successive dilutions, to the tenth (DH) or more often to the hundredth (CH) of a solution of mother tincture. The dilution of a mother tincture solution in 99 volumes of solvent is a dilution of a hahnemannian centesimal (1 CH, i.e., a level of 0.01, or 1%), the dilution to the hundredth of this is a dilution of 2 CH (i.e., ten thousandth $T = 0.0001 = 10^{-4}$, or 0.01%). A dilution of n CH is a dilution of $10^{-2 \times n}$; 3 CH represent one millionth, 6 CH one thousandth of a billionth (Kleijnen *et al.*, 1991).

The current dilutions, in France, go up to 30 CH, the dilution ratio is therefore 10^{-60} . In many countries,

dynamizations and dilutions of up to 200 CH are used. For illustration:

- A drop of water (about 0.05 mL) in Lake Geneva (88,900 million m^3) represents a dilution of about 6×10^{-19} , equivalent to 10 CH
- A molecule of water embedded in the sum of the oceans on Earth represents a dilution of one for 8.4×10^{45} molecules, approximately 23 CH

A 40 CH dilution corresponds to a molecule of a parent substance in a mass of solvent greater than the total mass of the universe (the total quantity of atoms of the visible universe corresponding to a sphere of 90 billion d'Light-years of diameter centered on the Earth, is estimated at 10^{80} atoms).

The insoluble substances are triturated in lactose until the solubility threshold is reached in order to prepare the first liquid dilution. The rest of the operations follow the same procedure as for soluble substances.

Dynamization of Semen Korsakov

The Russian homeopath Semen Korsakov gave his name to another dilution system. This one simply empties the bottle used after each dynamization before filling it with water. It considers that approximately one hundredth of the original volume remained hung on the walls. Hahnemann considered this method as effective as his own.

It is now known that the residual quantity actually depends on the affinity of each molecule with the silica wall.

Succussion

Succussion is the act of "energizing" a diluted solution by agitating it. It is the whole dilution plus succussion which would give their efficacy to the homeopathic remedies.

However, the therapeutic utility of the succussion is not proved. According to the scientific theories currently validated in chemistry, succussion would only result in the homogenization and aeration of the solution. It should be noted that the highly diluted solution can be contaminated (erosion of container walls, desorption, etc.) and make the resulting liquid composition unpredictable.

In practice, the purity of the solvent is never absolute. The products in solution in this solvent undergo the same dynamization treatment as the initial active ingredient. Since the atomic theory of matter was verified experimentally in the 20th century, Hahnemann's method, prior to this research, has been scientifically invalidated (any molecule having disappeared from the initial preparation, the properties of the bodies being dependent on their

molecular content. The lack of content does not advocate a curative effect).

Homeopathy therefore sought to explain an efficiency in the absence of the substances initially introduced into the preparation, in particular by postulating that the water would retain a memory of the solutes even after all trace would have disappeared. Other *in vitro* studies, aimed at explaining the possible mode of action of an extremely dilute solution, have been undertaken since the affair of the memory of water but without definitively accepted results.

The majority of homeopathic preparations are in the form of granules. They are made from cane sugar or a mixture of sucrose and lactose. They are impregnated with the activated solution and then dried. The purpose of this process is to convey the therapeutic value of the solution to sugar, which no longer contains water after drying. The weight and porosity of these granules are carefully controlled. Administration is by oral and sublingual (allowing melt under the tongue).

There is no explanation for how the properties of the solution could be transmitted to the sugar molecules, stored in the dry sugar and then restored when diluting the patient's saliva under the tongue to penetrate via the mucous membranes of the mouth in the body. In this regard, Hahnemann himself noted in a booklet on the homeopathic treatment of scarlet fever that the use of homeopathic preparation with sugar made it ineffective: "In general, it is unbelievable how much this drug, like any other, loses its strength when taken on sugar, for example, or that after having instilled it in a liquor, it is not stirred. This one. But it is not necessary, after stirring the dose, to leave it for several hours without administering it: The vehicle, thus quiet, always undergoes some decomposition, which weakens or even destroys the vegetable medicines mingled with it." This is saccharose whereas the milk sugar used for the manufacture of the granules is lactose (Petrescu *et al.*, 2016a; 2016b; 2016c).

Consultation

Homeopaths generally begin with detailed examinations of their patients' histories, including questions regarding their physical, mental and emotional states, their life circumstances and any physical or emotional illnesses. The homeopath then attempts to translate this information into a complex formula of mental and physical symptoms, including likes, dislikes, innate predispositions and even body type.

From these symptoms, the homeopath chooses how to treat the patient using *materia medica* and repertories. In classical homeopathy, the practitioner attempts to match a single preparation to the totality of symptoms (the *similium*), while "clinical homeopathy" involves combinations of preparations based on the various symptoms of an illness.



Fig. 2. Homeopathic pills, homeopathic preparation

Pills and Active Ingredients

Homeopathic pills are made from an inert substance (often sugars, typically lactose), upon which a drop of liquid homeopathic preparation is placed and allowed to evaporate.

The process of homeopathic dilution results in no objectively detectable active ingredient in most cases, but some preparations (e.g., *calendula* and *arnica* creams) do contain pharmacologically active doses. One product, Zicam Cold Remedy, which was marketed as an "unapproved homeopathic" product, contains two ingredients that are only "slightly" diluted: Zinc acetate (2X = 1/100 dilution) and zinc gluconate (1X = 1/10 dilution), which means both are present in a biologically active concentration strong enough to have caused some people to lose their sense of smell, a condition termed anosmia. Zicam also listed several normal homeopathic potencies as "inactive ingredients", including *galphimia glauca*, histamine dihydrochloride (homeopathic name, *histaminum hydrochloricum*), *luffa operculata* and sulfur (Fig. 2).

Isopathy

Isopathy is a therapy derived from homeopathy, invented by Johann Joseph Wilhelm Lux in the 1830s. Isopathy differs from homeopathy in general in that the preparations, known as "nosodes", are made up either from things that cause the disease or from products of the disease, such as pus. Many so-called "homeopathic vaccines" are a form of isopathy.

Results and Discussion

Despite some initial success (and some occasional successes such as the homeopathic dispensary created in 1858 by the Abbe Alfred Duquesnay), homeopathy lost a great deal of influence in France after Hahnemann's

death in 1843, whereas in the United States, the personalities of Eugène Beauharnais Nash and James Tyler Kent maintained their notoriety until the First World War. In France, in Lyon, in 1875 the homeopathic hospital Saint-Luc was founded in the rue Tronchet. Pierre Jousset and his son Marc founded in November 1897 in Paris the French School of Homeopathy, where also Gerard Encausse, better known under the name of Papyrus, also taught. The Saint-Jacques hospital in the 15th arrondissement of Paris offered consultations with homeopathic doctors (Aversa *et al.*, 2016a; 2016b; 2016c; Petrescu *et al.*, 2016a; 2016b; 2016c).

Homeopathy was quickly confronted with problems related to the manufacture of homeopathic medicines. Since 1803, only pharmacists were able to sell drugs. Many of them were hostile to homeopathy, or reluctant to carry out the lengthy dilution and succussion operations necessary for the realization of homeopathic preparations. As a result, French homeopathic physicians themselves manufactured their medicines, in total illegality. Soon there will be laboratories such as Dolisos, Lehning, Boiron in France, Dr. Willmar Schwabe (of) in Germany, Nelson in Great Britain, USM in the United States...

It was Léon Vannier (1880-1963), an Angevin doctor, who allowed homeopathy to emerge from a certain shadow induced by the difficulties of making remedies. In 1911, with René Baudry (1880-1966), he opened a major homeopathic pharmacy in Paris. He founded the homeopathic laboratories of France in 1926, thus ending the difficulties of supplying homeopathic medicines. Baudry created in 1927 in Annonay the Central Homeopathic Laboratory and then in Lyon the Homeopathic Laboratory Rhone.

Homeopaths in dissidence by Léon Vannier initiated the creation in 1932 of a homeopathic laboratory in Paris: The Central Homeopathic Laboratory of France: If the twin brothers Boiron were the leaders and the titleholders, the real financier was the Advertising Lucien Levy. A year later this laboratory changed its name to become Modern Homeopathic Laboratories under the direction of Henri Boiron and René Baudry (who are debtors of Lucien Levy for royalties for products of which he owns the marks). For his part, Jean Boiron is heading the Rhône-Alpes homeopathic pharmacy in Lyon (René Baudry's new pharmacy, which will become Laboratoires oméopathiques Jean Boiron in 1941 when regulations will oblige pharmacy laboratories to be separated from the pharmacy).

The decree of February 24, 1939, which defines categories of homeopathic preparation, is equivalent to official recognition. However, it is only the decree of 21 December 1948 which explicitly recognizes homeopathic medicines (excluding Korsakovian dilutions and high hahnemannian dilutions). In 1967,

the fusion of these laboratories with the central homeopathic laboratories of France by René Baudry gave birth to Laboratoires Boiron (Petrescu and Calautit, 2016a; 2016b).

The French Syndicate of French Homeopathic Physicians (SNMHF) was founded on 11 May 1932 by an initiative of the French Society of Homeopathy.

The laboratories, more productive than pharmacies, allowed the standardization of production and thus the development of homeopathy. The profits resulting from these developments in return allowed the financing of training and research which will promote a certain rapprochement with the official medicine.

Very much in vogue in the nineteenth century when medicine was not a serious alternative, the use of homeopathy collapses in the 20th century with the invention of drugs with active substance. Almost completely disappeared in the United States, the practice persists in two countries: India and France.

The recent history of homeopathy is marked both by relatively widespread use and by major scientific controversies. In terms of classical medicine, homeopathy is considered an unconventional medicine. WHO considers it traditional medicine or complementary and alternative medicine, depending on the type of medicine dominant in the country.

In 1934, the German authorities recognized Dr W. Schwabe's Homeopathic Pharmacopoeia.

In 1938, the FDA gives a status to the homeopathic medicine.

In 1997, recognition of the medical practice of homeopathy in France by the Ordre des médecins (Lebatard-Sartre report).

Conclusion

The homeopathic practice rests on three principles: The similarity, the individualization of cases and the infinitesimal. The use of the infinitesimal was proposed by Hahnemann in the early nineteenth century with the publication of "Organon der Heilkunst" (Organon of the art of healing), (Hahnemann, 1833).

The compounds used do not become homeopathic unless they respect the principle of similarity, according to which a patient should be treated with a substance producing experimentally in a healthy person symptoms similar to those presented by the affected person, use of the substance being adapted to the patient thanks to the principle of individualization according to which the homeopath analyzes all the symptoms of the person and not only those related to the disease. Substances chosen according to this method can be administered in non-toxic weighted doses, but most prescribers use them in dilutions, sometimes very large, which have previously been subjected to very high and very frequent vibrations.

Although some clinical trials produce positive results, multiple systematic reviews indicate that this is due to chance, questionable research methods, or publication biases.

Homeopathy is based on the principle of similarity formalized by Hahnemann following the following observation: Quinine extracted from bark of cinchona causes, in high dose, a poisoning accompanied by fever, comparable to fevers that the absorption of Quinquina helps to heal.

Homeopathy gives very good results in terms of energy, helping the body to regenerate itself, somewhat faster.

Acknowledgement

This text was acknowledged and appreciated by Assoc. Pro. Taher M. Abu-Lebdeh, North Carolina A and T State University, United States and Shweta Agarwala Senior Research Scientist at Singapore Center for 3D Printing Nanyang Technological University Singapore, whom we thanks and in this way.

Author's Contributions

All the authors contributed equally to prepare, develop and carry out this manuscript.

Ethics

This article is original and contains unpublished material. The corresponding author confirms that all of the other authors have read and approved the manuscript and no ethical issues involved.

References

- Atwood, K., 2008. Homeopathy and evidence-based medicine: Back to the future. *Science Based Medicine*.
- Aversa, R., F.I. Petrescu, R.V. Petrescu and A. Apicella, 2016a. Biomimetic finite element analysis bone modeling for customized hybrid biological prostheses development. *Am. J. Applied Sci.*
- Aversa, R., R.V. Petrescu, F.I. Petrescu and A. Apicella, 2016b. Smart-factory: Optimization and process control of composite centrifuged pipes. *Am. J. Applied Sci.*
- Aversa, R., F. Tamburrino, R.V. Petrescu, F.I. Petrescu and M. Artur *et al.*, 2016c. Biomechanically inspired shape memory effect machines driven by muscle like acting NiTi alloys. *Am. J. Applied Sci.*
- CAM, 2002. Dynamization and dilution. *Complementary and Alternative Medicine*, Creighton University Department of Pharmacology, archived from the original on 2002-08-26.
- Clarke, J.H., 2001. *Homeopathy explained*.
- Dean, M.E., 2001. Homeopathy and "the progress of science". *Hist. Sci.*, 39: 255-83.
DOI: 10.1177/007327530103900301
- Ernst, E., 2002. A systematic review of systematic reviews of homeopathy. *Brit. J. Clin. Pharmacol.*, 54: 577-82.
DOI: 10.1046/j.1365-2125.2002.01699.x
- Haehl, R., 1922. *Samuel Hahnemann: His life and work, Based on Recently Discovered State Papers, Documents, Letters, Etc.* B. Jain Publishers, ISBN-10: 978-81-7021-693-3, pp: 101.
- Hahnemann, S., 1833. *The Homœopathic Medical Doctrine: Or, "Organon of the Healing Art"*. 1st Edn., W.F. Wakeman, Dublin, pp: 332.
- Hemenway, H.B., 1894. *Modern homeopathy and medical science*. *JAMA*, 22: 367-377.
DOI: 10.1001/jama.1894.02420900001001
- Homeopathy, From Wikipedia, the free encyclopedia. <https://en.wikipedia.org/wiki/Homeopathy>
- Kayne, S.B., 2006. *Homeopathic Pharmacy: Theory and Practice*. 1st Edn., Elsevier Churchill Livingstone, Edinburgh, ISBN-10: 0443101604, pp: 386.
- Kent, J.T., 2008. *Modern homeopathy*.
- Kleijnen, J., P. Knipschild and G. Ter Riet, 1991. Clinical trials of homeopathy. *BMJ*, 302: 316-23.
PMID: 1825800
- Petrescu, F.I. and J.K. Calautit, 2016a. About the light dimensions. *Am. J. Applied Sci.*, 13: 321-325.
DOI: 10.3844/ajeassp.2016.321.325
- Petrescu, F.I. and J.K. Calautit, 2016b. About nano fusion and dynamic fusion. *Am. J. Applied Sci.*, 13: 261-266. DOI: 10.3844/ajeassp.2016.261.266
- Petrescu, F.I., A. Apicella, R. Aversa, R.V. Petrescu and J.K. Calautit *et al.*, 2016a. Something about the mechanical moment of inertia. *Am. J. Applied Sci.*
- Petrescu, F.I., A. Apicella, R.V. Petrescu, S. Kozaitis and R. Bucinell *et al.*, 2016b. Environmental protection through nuclear energy. *Am. J. Applied Sci.*, 13: 941-946.
DOI: 10.3844/ajeassp.2016.941.946
- Petrescu, R.V., R. Aversa, A. Apicella, S. Li and G. Chen *et al.*, 2016c. Something about electron dimension. *Am. J. Applied Sci.*
- Ullman, R.W. and J. Reichenberg-Ullman, 1994. *The Patient's Guide to Homeopathic Medicine*. 1st Edn., Picnic Point Press, Edmonds, ISBN-10: 0964065428, pp: 132.