

## LECTURE V.

WE have seen that the remedial power of a drug depends upon the presence of an active principle which pervades the molecular atoms of the drug as the vital spirit does the tissues of the organism. This active principle is a force *sui generis*, which cannot be replaced by any other force in nature. In alloepathic practice one amarum or bitter substance may be taken for another; the doctrine of succedanea or substitutes is essentially a doctrine of the Old School. We see proposals made in alloepathic journals to employ one medicine in the place of another; governments offer rewards to the discoverer of some cheap native substitute for expensive foreign drugs. In our practice we repudiate the very idea of substituting one drug for another. Every drug constitutes a distinct power, is endowed with distinct properties which make it to be what it is: an individual agent. The very idea of individuality precludes the possibility of substitution, which is simply another term for chaos and confusion. Every drug affects the human organism in a definite manner, and is in therapeutic rapport with some definite pathological lesion characterised by definite phenomena of pain, alterations of color, temperature and pulse, eruptions, disharmony of the nervous functions and other signs of disease which are peculiar to this and to no other derangement.

We are aware that modern chemistry has succeeded in analyzing medicinal plants into a number of component parts. Opium, for instance, has been analyzed into some twenty different substances, a fact of which Professor Simpson, in his volume against Homoeopathy, avails himself for the purpose of showing that homoeopathic physicians do not operate with simple, but exceedingly compound substances. He writes;

"Opium is not a simple substance; it is extremely composite in its character. It contains, says Christison, no fewer than seven crystalline principles, called Morphia, Codeia, Paramorphia, Narcotin, Narcein, Dorphyroxin, and Meconin, of which the first three are alkaline, and the others neutral; secondly, a peculiar acid termed meconic acid, which constitutes, with sulphuric acid, the solvent of the active principle; and thirdly, a variety of comparatively unimportant ingredients, such as gum, albumen, resin, fixed oil, a trace perhaps of volatile oil, lignin, caoutchouc, extractive matter, and numerous salts of inorganic bases. Of these inorganic salts and substances in Opium, Schindler, in his analysis, detected among others, phosphate of lime, alumina, silica, magnesia, oxide of iron. Homoeopaths, in using this frequently-indicated medicament, Opium, employ a preparation which is certainly not single, but consists at least of some twenty different substances."

Unfortunately for his argument, our professor is a little too fast. He might have increased the list of these elementary ingredients threefold, and yet he would have been obliged to leave out the most essential of them all, the very element, in fact, which constitutes the essential thing in Opium. Mix up your twenty ingredients in a crucible, and try to combine them by fire or water, or by any means in your power, and what will you obtain? Opium? No, indeed, you may produce some monstrous compound which will be as different from Opium as the inanimate carcass is from the living body. The Opium-principle or force, by assimilating to itself the molecular atoms of material nature, among which the above mentioned chemical products constitute essential ingredients, becomes embodied for our use in the opium-plant, the *papaver somniferum*, from which the Opium is obtained by means of certain simple processes which will be mentioned in the course of our lectures. It is this opium-force or essence which effects our cures of the pathological lesions to which it is homoeopathic; in other words, which result from its own action upon the organic tissues.

In order to enable the dynamic principle of a drug to act with more positiveness, more directness and more specific intensity as it were, Hahnemann has resorted to two processes which our descendants will, I doubt not, regard as two highly important inventions in the domain of pharmaceutics. These two processes are: trituration and succussion. Before dwelling upon them more minutely, let me quote the opinion of a distinguished man in the natural sciences, I mean Professor Doppler of the University of Halle, who, in an essay, entitled "great and small," has felt called upon to vindicate the efficacy of small doses, without being at all anxious to say a kind word in favor of Homoeopathy. He expressly declares that he does not write in behalf of a theory not connected with his own peculiar branch of investigation, and that it was physicians of the old school who requested him to publish his views.

It is unnecessary to transcribe the whole of his interesting article; it may suffice for our present purpose to state, that according to Doppler, "the power of remedial agents may be measured by *extension of surface*, instead of being determined by weight as has been the fashion heretofore. By surface in the sense in which Professor Doppler understands this term, we do not mean the mathematical surface of a body, but the aggregate surface of all its molecular constituents in a state of absolute separation from each other. By separating these atomic constituents, the actual surface of a body may be increased from a square inch to several thousand square feet. This separation is best effected by mixing the pulverized substance with a sufficient quantity of sugar of milk, and afterwards grinding the mixture in a suitable mortar. Having effected an homogenous compound by this means, we mix a portion of it with an additional quantity of sugar of milk, and renew the process of grinding until another homogeneous product is secured. This proceeding may be continued until a

complete separation of all the molecular constituents of the substance is effected. The trituration with sugar of milk is resorted to in order to prevent a reunion of the atoms by virtue of the attraction of affinity which their immediate contact with each other might excite."

In making these successive triturations, we shall find that electricity becomes developed on the surface of the atoms, endowed with such a high degree of expansiveness that metals and similar coarse bodies will not influence it. That this electricity is developed, may be ascertained very readily by any one who will make these triturations in the dark. After the first trituration, you see little of it; it becomes much more intense when making the second trituration, and still more so during the third. An electric light is readily perceived, and the crackling of a multitude of little sparks may be heard. In breaking up the atoms of liquid drugs, we use alcohol as an appropriate vehicle, and instead of trituration, we resort to the process of shaking, taking care to impart a number of powerful succussions, not simply one or two feeble, nervous agitations of the surface. In sending these molecular atoms through the organism by means of the capillary current, we bring the attractive force of each atom to bear upon the dynamic disease which pervades the tissues. It is the *dynamic* force of the drug-molecule that acts through the electric attractive power developed on its surface, and the effect of this influence is to convert the dynamic disease into so many atomic points as it were, which are perfectly harmless to the organism and are readily overcome by the vital reaction.

Nature and history furnish many proofs that very small bodies may produce great effects. Passional excitements may cause great disturbances of the physical organism. A sudden joy has caused death; anger has developed a dangerous attack of bilious fever, stupor; the news of a sudden fortune has made people mad; fear has caused and cured diseases. Boerhaave cured epilepsy which had become epidemic in the foundling-hospital of Leyden, by threatening all those who should be attacked again, with a severe flogging,

A sudden fright has caused imbecility and death.

The sense of smell is so keen in a dog, that he discovers his master by the scent.

According to Bouchardat, fresh-water fishes die in water containing  $1/140000^{\text{th}}$  of sublimate, or in  $1/500000^{\text{th}}$  of the iodide of mercury.

Segin has discovered atoms of copper through a microscope magnifying seventy-five times; Mayerhofer has seen atoms of the eighth trituration of iron, of the tenth of platina, gold, silver, mercury, and of the fourteenth of tin. In order to

avoid the possibility of a mistake, he first examined the atoms of the crude substance, with which the atoms of the triturations seemed to correspond perfectly.

Liebig writes: We know of animals with teeth, with motor and digestive organs that are no longer visible to the naked eye. There are other animals whose size has been found by measurement to be infinitely smaller, and which possess the same apparatuses. Like the larger animals they take food, and propagate themselves by means of eggs, that must necessarily be thousands of time smaller than their bodies. If we are unable to perceive creatures which are still billion times smaller than these, it is because our optical instruments are too imperfect.

Concerning distance the same author writes: "The multitude of worlds is infinitely large, it cannot be expressed in numbers; in one second a ray of light travels forty thousand miles; there are fixed stars whose rays require millions of years before they reach our globe."

Chemistry furnishes a number of striking illustrations of the power of small quantities; Starch and water are united into an entirely new body by Sulphuric acid which loses none of its properties in consequence; it effects this union by its mere presence, a process termed by chemists *Catalysis* or *action of presence*.

One part of hydrothionic acid gas is discoverable in three million parts of water by means of silver with a polished surface.

One millionth part of starch is rendered violet by iodine.

One eighty thousandth part of a grain of sulphuric acid is still discoverable by sugar.

Brande and Eveling state that one five thousandth part of a grain of arsenious acid is discoverable in five hundred thousand parts of water, after (the lapse of twenty-four hours, by means of ammoniosulphate of copper.

According to Poppe, 1/240th of a grain of carmine tinctures sixty pounds of water; take one millionth of this solution and one drop of it, spread on white paper, will still show the color under the microscope. One millionth of sulphur reacts against acetate of lead; Two millionth of chlore against nitrate of silver.

Spallanzani states that one forty thousandth of a grain of semen of frogs is capable of fecundating; viz.: three grains of semen dissolved in twenty-two pounds of water.

According to Professor Arnold of Heidelberg, a solution of one millionth of frog-semen is still endowed with powers of fecundation. The greatest philosophers believe in the infinitely small. Berzelius writes: We may progress in knowledge as far as we choose; we shall always stumble upon something that seems incomprehensible.

Professor Albers teaches that, "the comminuted dose is more readily received by the stomach, irritates much less the place where it first comes in contact with the organism, and hence acts more completely and more permanently than a massive dose."

Dr. Schulz expresses himself thus: The reception of drugs by the organism is the more rapid, the less the local absorbents are irritated by the drug, in other words: the smaller is the dose.

Panizza concludes from his experiments concerning absorption, that "small comminuted and easily soluble doses of medicine are more efficacious than large doses which pass off again with the excrements; the absorption of drugs takes place the more readily, the more soluble the medicines are, and the more they are divided and susceptible of assimilation."

It must be conceded, however, that all these quantities, small as they may appear, may still seem large in the presence of our infinitesimal doses. Think of the ten thousandth potency ! Well may we exclaim with the great poet: "There are more things between heaven and earth than we have dreamed of in our philosophy."

It is impossible to determine the size of doses by a fixed, unvarying rule. There was a time when the great body of homoeopathic practitioners was divided into two hostile camps, high and low dilutionists. The high dilutionists professed to practice a Homoeopathy of a higher order; while the low dilutionists looked upon the former with a sort of pity, doubting, may be, their sanity. These opponents are now willing to treat each other with more respect and liberality, and a certain harmony of feeling and action might perhaps have been agreed upon, if the new marvel of the so-called highest potencies had not come to disturb the brethren.

Do these very high potencies act? It is my decided conviction that they do. But can they be depended upon in all cases? I unhesitatingly answer: No. In the course of my lectures I shall take every opportunity to enlighten you concerning the most appropriate dose of every drug; for the present I take the liberty of giving the general advice that, in the beginning of your professional career you had better confine yourselves to the first six potencies; in some cases you may use tinctures and the lower triturations; but in the vast majority of cases you will find the attenuations from the first to the sixth sufficient to effect a cure.

Gradually, as you gain experience and confidence in yourselves, you may make trials with the higher and highest potencies in cases that seem adapted to their use.

As a general rule physicians use the higher and highest potencies in all chronic cases; the lower potencies are used more particularly in acute cases. Here too we may distinguish between the primary and secondary symptoms. While the primary symptoms prevail, a large dose is preferable to a smaller one which is more appropriate during the secondary symptoms or the stage of organic reaction. In chronic cases attended with disorganizations, such as hypertrophy of tissues, abscess, effusion, and in certain kinds of miasmatic diseases, more particularly in all forms and stages of syphilis, massive doses of the appropriate drug are very often, and indeed most generally more efficient than small doses. Nevertheless you will find it unwise to adhere too dogmatically to any rule regarding the size of doses. You may undoubtedly incline to general principles; but it is best to do so cautiously, and with the reservation of modifying them according to the requirements of individual cases,

I am willing to admit very freely that the doctrine of potentization has been most sadly abused by a small number of homoeopathic practitioners. On the other hand, however, I would ask you, gentlemen, to refrain from rushing into the opposite extreme of material doses. Have faith in Hahnemann's teachings regarding the dynamic force of drugs. How is it that alloepathic physicians, when making their first attempts in Homoeopathy, turn to the despised globule with a sort of instinctive warning that it embodies a great and vital truth? I never knew of an alloepathic convert to our doctrines who does not fly from the contaminating materialism of the Old School with a perfect loathing. Yes, there is power in small doses; the lower potencies, from the first to the sixth, may be all-sufficient for practical purposes; but do not be afraid of investigating the doctrine of potentization as embodying principles which may, at some future period, reveal to us hitherto unknown forces of life.

Homoeopathic physicians are not in the habit of using medicines externally; nevertheless we may resort to this method in some cases. Arnica is used externally in the case of wounds and bruises; the external use of Aconite frequently becomes necessary in severe forms of neuralgia. Many homoeopathic physicians employ the Sulphur-ointment in the itch. In the course of my lectures, this subject will be dwelt upon more in detail. Let me here caution you, gentlemen, against the pernicious practice of alloepathic physicians to resort to the external application of drugs for the purpose of repelling an eruption, drying up some old sore, or burning away a chancre. Untold suffering has been entailed upon patients by rubbing mercurial ointment upon an acute nettle rash, or by drying up a chronic ulcer with lead-washes. Such diseases are internal maladies, the intensity and destructive power of which are tempered by the vital reaction through the development of these cutaneous symptoms. Close up these natural outlets of the internal disease, and you may develop incurable chronic ailments,

asthma, paralysis, consumption and other disorganizing processes. On more than one occasion the drying up of an old sore by means of an astringent wash has resulted in fatal apoplexy.

Regarding the

#### ADMINISTRATION OF MEDICINES,

We may remark that various methods have been adopted by homoeopathic practitioners, agreeably to their respective tastes and judgments.

In the earlier periods of Homoeopathy, Hahnemann and his disciples were in the habit of giving a single dose of the appropriate remedy dry on the tongue, and allowing it to act for a longer or shorter period, according to the requirements of the case. A dose consisted of one, two or more globules of the size of a mustard-seed. At a later period, Aegidi introduced the practice of dissolving four or five globules or pellets in from six to ten tablespoonfuls of soft water, which had to be perfectly free from all impurities. A tablespoonful, or a dessertspoonful in the case of children, was administered every fifteen minutes, or every half hour, or even every hour, two, three or four hours, according as the symptoms were more or less acute, and the disease ran a more or less rapid course. This practice is the prevailing practice with the vast majority of practitioners. Many of our practitioners give the medicine in powders, mixing one or two drops of the required potency with a small quantity of sugar of milk, and dividing it into six, ten or twelve powders, one of which is taken by the patient, dry on the tongue, every hour, or every two, four, six or eight hours, according to the more or less acute or chronic nature of the case.

Another mode of administering homoeopathic remedies is by olfaction. This process is not much resorted to by modern physicians. If employed, the emanations from the medicine should be sufficiently perceptible to impress the nervous system through the filaments of the olfactory nerve. This method should only be resorted to in purely nervous affections; we doubt whether it can be depended upon in acute inflammations, or in disorders of any kind which may terminate in dangerous disorganizations.

The process of inhalation has likewise been adopted by some homoeopathic practitioners, more particularly in affections of the respiratory organs. The medicine is introduced into an inhaler, and made to act directly upon the pulmonary tissue and the bronchial lining membrane. A very excellent inhaler may be procured of Dr. Otto Fullgraff, New York, a representation and description of which may be found in the February number of the North-American Homoeopathic Journal, 1856.

A good deal of metaphysical sophistry has been expended in former years upon the repetition of doses and the succession of remedies. After a dose of the medicine had been given, the effects had to be watched with scrupulous care,

and any change in the symptoms, whether apparent or real, generally indicated a change of remedy. Modern homoeopaths of experience and judgment change their medicines much less frequently than was the fashion with their predecessors, or is the fashion with some of their contemporaries. We hear of physicians using four and even six medicines, not only in the same case, but at the same time, alternating them in regular order. This is undoubtedly a strange abuse, of which no intelligent practitioner who comprehends our law of cure, and is fully conversant with our therapeutic resources, will ever render himself guilty.

If in a case of pleurisy, pneumonia, meningitis, acute rheumatism, or any other acute disease, a decided improvement sets in after one or two doses of Aconite or Belladonna, it would be very unwise to change the medicine, because the symptoms are less intense, or because some of the more acute and distressing symptoms have disappeared. The essential character of the disease may still be the same, and the same treatment, if continued in a modified form, may lead to perfect recovery. Instead of changing the medicine, we continue the same remedy at prolonged intervals; many a case of meningitis has been cured with Belladonna, many a case of typhus with Arsenic, many hundred cases of pleurisy or pneumonia with Aconite, without the employment of any other medicine. In chronic cases the medicine may be repeated every twenty-four hours, or even every two or three days. There are chronic diseases, however, where it may be proper and necessary to give the medicine every six or twelve hours, and even more frequently. In some forms of chronic dyspepsia, it may not be out of the way, to repeat the dose every six hours; in primary syphilis the specific remedy may sometimes be repeated with advantage every four hours; even in the secondary and tertiary forms of this disease, a dose of the appropriate remedy may be given every four or six hours.

In chronic diseases we generally confine ourselves to one remedy at a time. The method of alternating; two medicines at regular intervals, is generally resorted to in acute cases only. We may alternate Aconite and Belladonna, or Aconite and Bryonia, or Aconite and Phosphorus, Belladonna and Nux, Phosphorus and Arsenic, etc. It should be remarked, however, that, in many cases, this method of alternation is an expedient shift rather than an usage necessitated or justified by principle.

Luz, the inventor of the isopathic system of treatment, has proposed in a late publication to mix the remedies instead of alternating them. He asserts that Hahnemann, in a letter addressed by him to Luz, and published in the above mentioned work, sanctioned the proposition of mixing medicines, and that Hahnemann's views concerning this subject would have been published in the last edition of the Organon, if the physicians to whom the publication of this

edition was confined in Germany, had not left them out by a management of their own, Be this as it may, it is very doubtful whether Hahnemann, in the full enjoyment of his mature judgment, would have authorized this new-fangled polypharmacy; on the other hand it is equally certain that he would have visited with the severest condemnation the practice of using three or four medicines in the same case simultaneously at regular intervals.

It remains now to give a short description of the utensils which are required for the business of making homoeopathic preparations; and afterwards to indicate more specially the method which has been adopted by Hahnemann and by modern homoeopathic pharmacutists generally, of making homoeopathic preparations.

The utensils of which we make use in preparing homoeopathic tinctures, essences, triturations and liquid attenuations, are:

#### 1. *Mortars.*

An iron mortar which is to be perfectly smooth on the inner surface, and which should be kept polished constantly; and mortars of white marble with hard pestles. The marble mortars should not be glazed within; the pestles may have wooden handles to which an elongated, and evenly rounded extremity of unglazed marble should be attached.

#### 2. *A Cutting Machine.*

For the cutting of roots and herbs, a well-polished knife should be used, which has to be free from rust. Rust decomposes a great many vegetable juices instantaneously. The boards and blocks upon which the plants are cut, should be cleansed immediately after being used. An excellent contrivance for such purposes is a very simple machine, where the knife is worked up and down with a handle between four uprights; a similar instrument is used for cutting tobacco leaves.

#### 3. *A Press,*

For the purpose of pressing out the juice of plants, etc. An excellent instrument for this purpose is the press contrived by Messrs. Bullock & Crenshaw of this city, for our pharmacutists. It consists mainly of an iron screw with an iron handle attached to it. The plant having been previously cut in small pieces, is enclosed in a linen bag perfectly free from starch and bleaching materials, and,

enclosed in this bag, is subjected to the action of the screw. The juice collects in a tin pan which is provided with a convenient opening at the side for the purpose of allowing the juice to run into a suitable vessel. After using the screw, the pan and screw should be thoroughly cleansed; no bags should be used for two different substances.

#### 4. *Vials.*

All vials which the homoeopathic physician has to use in his practice, should be rinsed in hot, and afterwards in cold water; after which the vials are turned upside down, so as to enable the water to run down the sides of the vial; before using these vials, they should be dried in a hot oven. These remarks likewise apply to the bottles and jars in which the medicines are to be kept.

#### 5. *Corks.*

The corks with which the vials are closed, have to be selected with great care; all hard, porous and dark-colored corks have to be rejected. As soon as the corks shrink or become soft, they should at once be replaced by new corks having the requisite qualities for use. Vials containing corroding acids, should be provided with ground-glass stoppers. Vials containing substances which are liable to being altered by the action of the light, have to be pasted over with dark-colored paper.

#### 6. *Alcohol.*

This product of fermentation may be obtained from wine, beer, cider, malt, dregs of grapes, sugar-cane, germinating cerealia, pounded cherries, molasses, juice of carrots or beets, potatoes, honey, etc. The alcohol of the shops is never pure; chemical alcohol, obtained from the resin of jalap for instance, is not suitable for our preparations; if made from potatoes, it contains fusel-oil, an empyreumatic oil, which may be removed by shaking the alcohol with pure olive-oil for several days; the two oils combine and float on the top. after which they may be easily removed.

Pure anhydrous alcohol is a colorless fluid, having a sweet and penetrating odor, and a burning and pungent flavor; it must not lather when rubbed, and have no foreign odor; it dissolves perfectly in water, evaporates by exposure to the air, on account of its affinity for atmospheric moisture. It burns with a white flame at the centre, and blue at the edges, leaving no residue. Alcohol dissolves many substances, phosphorus and sulphur in small quantities, fixed alkalies, balsams, resins, camphor, sugar, volatile oils, extractive matter, etc.

Acids are either dissolved by alcohol or transformed into ether.

Anhydrous alcohol of one hundred degrees, is never used; there is always water in the alcohol of the shops. We have 1, the alcohol of commerce; 2, rectified alcohol, also termed diluted alcohol, containing about sixty per cent.; 3, best rectified or strong alcohol of seventy-five to eighty degrees; and 4, absolute alcohol from ninety six to one hundred degrees.

Soemmering has contrived a very simple process of freeing alcohol from the watery particles it may contain. Taking advantage of the fact that alcohol has no affinity for animal tissues, he cleans a pig's bladder from its adhering fat and impurities, and having tied the orifice of the bladder to a glass tube, he distends it with air to its full size and then hangs it up to dry, having previously stopped up the opening of the glass tube by means of a cork. The bladder being perfectly dry, a thin layer of glue is spread over it, in order to preserve it from injury and to give it more consistence. The bladder is then filled with alcohol, the cork is removed from the tube, and in its place a piece of wet bladder is tied over the opening of the tube. The bladder being exposed to the ordinary heat of a stove, the watery particles will evaporate in the course of a fortnight, and the strong alcohol will remain behind. It is advisable to distil this alcohol over charcoal before using it.

#### *7. Water.*

Common water is always impure, charged with gases, earthy matters, etc. Pure water should be without taste, smell or color. Rain-water, after a storm, contains ammonia with nitric acid. Before using water, it should be distilled by a careful homoeopathic pharmacist, unless the physician prefers doing it himself.

#### *8. Sugar of Milk.*

This is obtained from the serum of cow's or goat's milk by evaporation. It crystallizes round a thin stick in elongated tubular masses. The sugar of milk of the shops not being pure, we crystallize it over again by first boiling it over a moderate fire, with double its quantity of distilled water, after which we proceed as follows according to Gruner's directions: Filter the hot solution through filtering paper over which a piece of perfectly white and clean linen is spread, into an earthen vessel containing as much strong alcohol as water had been used in boiling. As soon as the two liquids come in contact, the sugar is precipitated in the shape of small pointed crystals which partly accumulate at the bottom of the vessel, and partly are deposited on its sides in the shape of a solid coating. After the liquid is all filtered and before the vessel is set aside for cooling, the liquid is stirred with a clean wooden stick, in order to obtain a perfectly homogeneous mixture. In a few days the liquid which floats over the crystals, is poured off, the crystals are separated from the sides and bottom of the vessel, washed with cold,

distilled water, spread out in thin layers upon clean paper over a sieve, and lastly dried by exposing them to a moderate heat. The dried crystals are pulverized in a mortar, and the powder is afterwards passed through a fine sieve. The finest part of the powder is used for putting up powders; the coarser part is used for triturations.

Sugar of milk should be kept in a dry, well-ventilated room, in well-closed glass jars.

### 9. Globules.

The globules we use, are of various sizes; they are composed of sugar and starch, and should be perfectly white, dry and hard.

## TRITURATIONS AND LIQUID ATTENUATIONS.

According to Hahnemann, the triturating process should be carried on in the manner described in the first volume of the Chronic Diseases. Hahnemann was exceedingly particular in his instructions, how triturations and afterwards liquid attenuations should be made; I will give you the substance of his remarks from a work which I published some years ago. Specific directions will be communicated when we come to treat of the various substances composing our Materia Medica.

Of the substance to be triturated, we take one grain and mix it in an unglazed mortar with thirty-three grains of sugar of milk. Stir the mass with a spatula and then triturate for six minutes. Scrape up the mass that adheres to the bottom and sides of the mortar and to the pestle, for four minutes, and then triturate again with great force for six minutes. Then scrape up again for four minutes, add another thirty-three grains of sugar of milk, stir the new compound with the spatula, triturate for six minutes, scrape up again for four, triturate again with great force for six, scrape the mass up again for four minutes, and then add the last thirty-three grains of sugar of milk, proceeding with this last portion as with the two former. This powder we enclose in a well-corked vial, marking it with the name of the drug and the fractional number  $-1/100$  to show that this is the one-hundredth potency of this substance.

From this first trituration we obtain the second marked  $1/10000$  by triturating one grain of it with ninety-one grains of sugar of milk in the same manner as has been described in the previous paragraph.

In a similar manner the third trituration marked 1/1000000 or I. is obtained from the second trituration.

From this third trituration we obtain the fourth potency by mixing one grain of the triturated substance with fifty drops of distilled water, shaking the mass vigorously for a few minutes, and afterwards adding fifty drops of strong alcohol, after which the whole mixture is again shaken vigorously for a few minutes. The vial should not be filled more than two-thirds.

This vial is marked with the name of the medicine and the number <sup>100</sup>I. Of this potency we take one drop, mixing it with ninety-nine drops of strong alcohol and shaking it vigorously a number of times. This is the fifth potency marked <sup>1000</sup>I. Of this potency we take again one drop, mixing it with ninety-nine drops of strong alcohol, shaking the mixture vigorously and marking it II. The subsequent potencies are prepared each from the one which immediately precedes it; they are to be marked in a similar manner, <sup>100</sup>II. for the seventh; <sup>1000</sup>II. for the eighth; III. for the ninth, etc.

Vials having been used for one medicine or potency, should not be used for any other.

After triturating a drug for a long time, a portion of the triturated substance will sometimes adhere to the sides of the mortar so firmly that it cannot be washed off; in such a case it will be necessary to scour the mortar with fine sand and afterwards to dry it in a hot oven; this will likewise remove the odor that may have remained behind.

Hahnemann was in the habit of using globules for his prescriptions, which had been previously moistened with the respective potencies. He generally poured two or three drops upon two hundred globules enclosed in a vial; and after shaking and rolling them about until every globule was saturated with the liquid, he spread them upon a piece of white unglazed paper, with the edges raised, and left them for a few hours until they were perfectly dry, after which he put them up for use in a fresh vial. One or two globules were given at a dose, or half a dozen globules were dissolved in a tumblerful of water, of which mixture a tablespoonful was administered every hour, or two, three or four hours according to the requirements of the case.

These details, gentlemen, may seem somewhat pedantically minute, but I am satisfied that the true method of securing good homoeopathic preparations, is to follow Hahnemann's rules as closely as may be possible and convenient. Instead of adding at once the whole quantity of sugar of milk, we obtain a much more

certain and perfect commingling of the medicine with the sugar of milk by pursuing the course pointed out by Hahnemann.

The details of the mode of preparation proposed by Hahnemann, have been somewhat modified by our pharmacutists. Though it is acknowledged by all that trituration is the best mode of developing the medicinal powers of a drug, and that the triturating process should be conducted with the greatest care, order and regularity; yet it has not been deemed necessary to observe the details in the very same manner as they have been proposed by Hahnemann. It has not been deemed derogatory to the scientific character of Homoeopathy to modify the number of minutes which Hahnemann prescribes for the various details of the process, or to increase the number of shakes in preparing the dilutions. Moreover the proportion of the ingredients in making our preparations, has been considerably modified. Instead of taking one grain or one drop to ninety-nine grains of sugar of milk, ten grains of the drug are taken, to ninety grains of the vehicle. I would here observe in passing, that by vehicle is always to be understood the non-medicinal substance with which the medicine is triturated or shaken in combination. Hahnemann's scale is called the centesimal, and this new scale is designated as the decimal scale. I believe that the decimal scale is now more generally used by homoeopathic practitioners than the centesimal.

Gruner, who is one of the most distinguished pharmacutists of our school, adopts the decimal scale in preparing the triturations and liquid attenuations; in his pharmacopoeia he gives the following directions:

"Weigh carefully a portion of the drug, add to it an equal portion in weight of powdered sugar of milk, (using the coarser kind for firm or tenacious substances,) and triturate these ingredients in a mortar of sufficient capacity, until both have been transformed into a homogeneous mass as respects color and fineness. Every now and then, the substance which adheres to the sides of the mortar and to the pestle, should be scraped off' with a horny spatula. The homogeneous character of the preparation will, in a great measure, depend upon the fulfillment of this condition."

"It is impossible to limit the duration of this first period of the triturating process by a general rule. This depends upon the greater or less degree of solidity of the drug. In every case, however, it should be continued for at least half an hour. Such substances as Lycopodium require several successive triturations, before their particles are entirely broken up. After the first trituration is terminated, and the drug-particles and those of the sugar of milk are sufficiently intermingled, a second portion of sugar of milk, being equal to three times the quantity of the former, is added, and the trituration is continued for

another half hour, including the scraping; after which the last portion of sugar of milk, equal to five times the quantity of the first portion, is poured into the mortar, and the triturating process continued until the whole mass presents a perfectly homogeneous compound, even when viewed through a glass. This compound will necessarily weigh ten times as much\* as the original drug. It is called the first trituration and designated as No. 1.

We now take a certain portion of this trituration, add to it nine times its weight of sugar of milk, and triturate these two substances together for three quarters of an hour in the manner described above. This second trituration is designed as No. 2. From this second trituration we derive the third by a similar process.

Before commencing to triturate, care should be had to dry the vessels, drugs and sugar of milk as perfectly as possible, and moreover, to divide hard and tenacious substances as finely as may be. The dividing of the metals will be explained more in detail when we come to speak of the different metals. Salts, precipitates and the like should first be reduced to a fine powder. The same observation applies to vegetable substances."

The fourth dilution of the decimal scale is obtained by first dissolving ten grains of the third trituration in the same quantity of water as was originally used for one grain of the centesimal scale of Hahnemann; and after shaking the two together until the sugar of milk is dissolved, add a similar quantity of alcohol, and shake the whole mass until a perfect union of all the particles is established. This fourth attenuation, if it is prepared for immediate use, may be prepared by means of water, without any alcohol. Of course it could not be made to keep. But even with the alcohol it is preferable to use the fourth attenuation only as a means to obtain the succeeding attenuations. If the fourth dilution is obtained with water, the next attenuation should be made with dilute alcohol, and after that, strong alcohol should be used for all succeeding attenuations.

Before commencing the attenuations, as many vials, containing about two drachms each, should be prepared, as attenuations may be required; they should be corked and the names of the medicines and the potencies should be marked on the corks. Labels exhibiting these names and potencies, should likewise be pasted on the vials. Afterwards each vial should be filled with ninety-nine, or, if we prepare our medicines according to the decimal scale, with ninety drops of alcohol. In order to avoid superfluous repetitions, we will suppose that the decimal scale is followed throughout. Into the vial marked No. 1, ten drops of the medicine should then be dropped, and the vial should be vigorously shaken by means of a dozen or more powerful strokes of the arm.

From this first vial we fill ten or twenty drops into the next following, and prepare this dynamization in a similar manner by shaking the vial. And so on through the whole series.

You will understand from these remarks, that in order to make reliable attenuated preparations, you require to use,

1. Dry and fine sugar of milk;
2. Pure, distilled water;
8. Alcohol free from all admixtures;
4. Sound corks and perfectly clean vials, and

5. Cleanliness, accuracy of measurement or weight, and the most systematic regularity in working with your materials. Do not be triturating for ten or fifteen minutes, and then leave off for a few hours or more, leaving your mortar standing on the table, exposed to dampness, dust and other impurities. If you commence a trituration, go through with it, until it is bottled up and put away in its proper place. It is a great treat for a homoeopathic practitioner who can spare the time, to make his own preparations; if it were known how bunglingly some of our preparations are made at the shops, nobody would wonder that our higher attenuations seem inefficacious.

Soluble salts, ethereal oils, and similar substances, instead of being triturated, are dissolved in water from the first. By triturating them, their constituent elements would be partially disunited, and many of them exercise a decomposing influence upon sugar of milk, as may be inferred from the sourish odor emitted by such preparations after the lapse of several months.

Salts are dissolved in pure water, ethereal oils in the strongest kind of alcohol. The decimal scale may be preserved with most of them. Some salts, for instance the nitrate of silver, have to be dissolved in the proportion of five to ninety-five, that is, five parts of the salts in ninety-five parts of distilled water. This preparation is marked one-twentieth which indicates the proportional relation of the drug to the vehicle. To obtain the first dilution, we take twenty parts of the above preparation and mix them with eighty parts of alcohol; the second and all successive attenuations are made in the proportion of one to ten. These attenuations should each be well shaken by means of vigorous strokes of the arm.

The following precautionary rules should be observed in preparing the solutions of salts:

1. These solutions should be prepared at an ordinary temperature, and the room where they are kept, should not be subject to variations of temperature, so that the crystallization by cold may be avoided.

2. In order to prevent any possible decomposition, the solution should not be exposed to the light of day.

3. The liquid should only be used as long as it remains perfectly clear and transparent; it should be thrown away as soon as it becomes dim, or borders, flocks or crystals show themselves.

4. Only corks of the best quality should be used for solutions, since corks used for solutions decay more readily than corks used for the alcoholic attenuations.

5. To obtain the second attenuation of these solutions, dilute alcohol should be used; the third and all subsequent attenuations should be made with strong alcohol.

#### TINCTURES AND ESSENCES.

The preparation of tinctures and essences varies in accordance with the constituent particles and chemical composition of the

plants. For the present I shall only give you the general rules to be followed in making the tinctures. If any particular rules should have to be observed as regards the strength of the alcohol to be used, and the like, they will be indicated when we come to speak of each plant in particular.

All the plants from which tinctures are prepared, are arranged by Gruner in three classes, corresponding with the different modes adopted for the preparation of tinctures.

In the first class we range all barks, roots, seeds, leaves, etc., which are preserved and prepared in a dry state.

The second class contains all those fresh plants, the juice of which can be obtained in a sufficient quantity by squeezing it out by means of a good press.

The third class numbers all such recent plants as contain so little juice that only a very small quantity can be obtained by simple pressure.

The best method of obtaining a strong or, as it is termed, a concentrated or saturated tincture from dry plants, is to first pulverize them as finely as may be, and then transform this powder into a fine paste by adding a little alcohol. This should be done in a room having a normal temperature, nor should the mass be exposed to the decomposing agency of the solar rays. Upon this paste we pour the required quantity of alcohol, and allow the liquid to stand for a fortnight. We must take care to keep the vessel—-which contains the liquid, closed with a piece of wet bladder; once a day, or morning and evening, the vessel should be vigorously shaken. After the lapse of a fortnight, the liquid is poured off, and the residue subjected to a press; we allow the extract to settle for twenty-four hours, after which period we filter it through white blotting paper, and then put it up for use. This method of preparing a concentrated tincture, is termed maceration; and such tinctures are denominated by homoeopathic physicians mother-tinctures, for the reason that the subsequent attenuations are made from them. For some of these tinctures strong alcohol is required, and for others dilute alcohol; in treating of the separate drugs, the kind of alcohol which is to be used, will always be indicated. Particular rules will never be omitted, if special mention of them should be necessary,

In the Second Class, we number such plants or parts of them as contain a sufficient quantity of juice to be squeezed out by means of a good press. Before pressing out the juice, the plant should first be cut in small pieces, which we subject to the action of a screw, tied up in a perfectly clean linen-bag free from all bleaching materials. This mechanical pressure being insufficient to obtain all the efficacious constituents of the plant, especially the volatile and resinous parts: it is indispensable to subject the residue to the action of strong alcohol. We take a quantity of alcohol equal in weight to that of the obtained juice, and *no more*, even if the residue should not be entirely covered by the alcohol. The juice which was obtained in the first instance by pressure, is kept in a lightly-covered vessel in a cool cellar, away from the light. After the lapse of twenty-four or thirty-six hours, before this juice has had time to ferment, the alcoholic residue is again subjected to pressure, and the tincture thus obtained, after the second pressure, will be found to contain the larger portion of the extractable matter, as may be inferred from the taste, smell and color of this extract. This extract is mixed with the juice previously obtained. After the mixture has been allowed to settle for several days, it is filtered and kept for use. Tinctures obtained in this way, are often termed essences, though the name tincture is generally applied to all alcoholic extracts whether obtained from dry or recent plants.

Plants belonging to the Third Class, contain so little juice that only a very small quantity of it can be obtained by pressure. In order to prepare a saturated tincture from these plants, we first cut them up in small pieces, and then add double their quantity of strong alcohol in weight. We macerate for one fortnight precisely as for tinctures of the first class; after which the liquid is drawn off) the residue is subjected to pressure, the whole of the extract filtered through white blotting paper, and the tincture thus obtained is put up in appropriate vessels for use. Our Thuja, or so-called arbor vitae, belongs to this third class. As regards the

### *Selection of Plants,*

We have to be careful; roots may seem sound and yet be worm eaten; seeds may seem sound and yet be altered within; all heterogeneous particles should be carefully removed.

### *Wild Plants*

Are preferable to those which are grown in gardens; they may be obtained dry, but no volatile particles must get lost. Foreign plants may be sent to a distance, after being previously cut up and preserved in alcohol.

Have regard to the locality of a plant: the luxuriant, tall and juicy appearance of a plant is no guarantee for its possessing the highest quantity of medicinal virtue; nor should plants which prefer a dry soil and much sun, be gathered from a damp and shady locality, or vice versa.

None but sound and regularly formed plants should be used; all distorted, half-dried, decayed or otherwise injured plants should be rejected; nor should old plants be used which have become woody by age.

All plants should be perfectly clean; they should not be washed, but the dirt may be brushed off.

The plants should not be infested by insects.

They must not be gathered during the morning-dew or after a shower; they must not be closely packed, nor carried about in the hot sun.

One species must not be confounded with another; most of our plants have different species. We have several species of Aconite, Bryonia, etc.; and we should use the species that has been proved.