

Section 1.2.1

Sources of Remedies

we will now begin to look at the nature of homeopathic medicines themselves. So far, in the course of Unit 1, you have learned that materials are used differently in homeopathy, as compared to synthetic drugs and herbal medicines. It is worth mentioning at this stage, that *herbal medicines* are essentially plant drugs. In other words, they are used for their pharmacological properties. Because plants have several active principals and many biologically active constituents, their clinical effects are often more diffuse, subtle and multi-systemic than their synthetic counterparts in orthodox medicine.

However, it is important to emphasise that even when homeopathic remedies are derived purely from plants (around 60% of the homeopathic materia medica) they are not prescribed to manipulate biochemical pathways. The homeopathic use of plant remedies is not comparable to treatments based on their herbal counterparts.

The range of source materials, of potential value in homeopathic medicine, is almost limitless, because medicines can be derived from almost any material or energy source.

Although plants have received the greatest attention from homeopaths over the last two hundred years, the animal and mineral realms have also been extensively explored.

The main categories of materia medica sources are summarised below.

1. Biological Sources

Whole Plant

Plant tissue:

fruit, pollen, leaf, corm, rhizome, root

Plant constituent:

alkaloids, saponin glycosides, tannins, resins, polysaccharides, volatile oils, phenolic acids, flavonoids, sterols

Whole Animal (insect, spider, crustacean, etc)

Animal tissues or body fluids: for example, sepia (ink of the cuttlefish)

Morbid tissue exudates / inflammatory discharges

Animal toxins: bacterial toxins, insect toxins, snake toxins, scorpion, amphibians' toxins, fish toxins

Micro-organisms: viruses, fungi, bacteria, rickettsiae, spores, human/animal pathogens (for example, Streptococcus, anthrax)

These can be prepared either from pure culture or from morbid discharges

2. Inorganic Sources

Elemental:

Natural forms: eg mineral sulphur, pyrites

Refined/purified/ore-extracted: copper, iodine

Non-elemental:

Natural minerals and salts: singly and in naturally occurring combinations

Synthetic: chemicals, drugs, inorganic toxins

Looking at this list, you will realise that a lot of source materials require very careful handling. Many are very toxic in their raw state. Some represent potential infection hazards and some are even radioactive, explosive, volatile or unstable.

Fortunately, most of our commonly used remedies are fairly straightforward to prepare homeopathically. The pharmacist simply needs to follow the instructions in the homeopathic *pharmacopoeia*. The *pharmacopoeia* is a text whose function is to describe the sources and preparation of medicines in a stepwise, logical and reproduceable fashion.

The First Pharmacopoeias

There were several pharmacopoeias published in the 1800s. The earliest of these were those of Jahr and Grunner (1850), followed by the first British and American Homoeopathic Pharmacopoeias of 1870 and 1882 respectively.

The daunting task of these works was to be true to Hahnemann's legacy while, at the same time, documenting the new remedies and preparations which were being introduced, as well as correcting errors. During the last 20 years of the nineteenth century there was large growth in homoeopathic practice, particularly in America. This movement was influenced by Dr J.T. Kent who introduced the higher potencies and many new remedies.

The French, German and American pharmacopoeias were revised infrequently between the war years as homeopathy lost some of its popularity due to the huge development of new drugs. It has only been in the last 20 years that another resurgence has taken place and the reference works for pharmacists and manufacturers has grown again in content and sophistication.

The early monographs were simple affairs with details of the Latin and common names, synonyms, botanical descriptions and tincture preparation. In the absence of refined analytical reagents, inorganic remedies often had archaic nomenclature which did not describe their molecular profile. (eg. *Causticum*, *Cinnabaris*). Although the physical properties of inorganic substances were often quite well described, techniques to isolate or purify the substance were often rudimentary by modern standards. This is important to bear in mind, since these relatively impure salts may have demonstrably different clinical effects in comparison to those of their highly purified modern counterparts.

Simple chemical identification tests were available, however, and the methods of *potentisation* were well established. (Described below) Methods for the preparation of *tinctures*, *triturations* and *dilutions* were exactly as described by Hahnemann and dosage forms were restricted to solid sugar *pillules* and oral liquids.

The present day

Today the status of homeopathic remedies as medicines has subjected their commercial manufacture to the same standards of quality control and analysis as orthodox drugs. Modern pharmacopoeias have the same overall descriptive data as the older editions but include a comprehensive array of macroscopical characteristics, chemical identification tests, assays for impurities or alkaloids, thin layer chromatography and dry residue limits.

Many new formulations have been added such as ointments, creams, eye and nose drops, suppositories etc. The number of methods of preparation has grown with the increased diversity of source materials. The latest *German Homeopathic Pharmacopoeia* (GHP) has over 50 methods. It includes remedies traditionally used in Germany such as *Spagyric*, where tinctures are subjected to heat or fermentation before use, and *anthroposophical* medicines first developed by the humanist philosopher Rudolph Steiner. An example is the remedy *Ferrum Sidereum* which is an iron preparation sourced from fallen meteors.

The *Homeopathic Pharmacopoeia of the United States* (HPUS) has grown enormously in recent years and, like others, is housed in ring binders to allow additions and updates. It presently contains around 1200 monographs. Although it has only recently begun to add testing methods and is not complete enough to use for licensing, it is a very important and widely used reference.

Historical journal articles on Homeopathic Pharmacy & Pharmacopoeia

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Potentiation

The very smallest doses of medicines chosen for the homeopathic diseases are each a match for the corresponding disorder. The physician will choose a homeopathic remedy in just so small a dose as will overcome the disease.

(Organon, VI ed Hahnemann)

We will now move on to investigate how these sources of remedies are transformed into the actual homeopathic remedies used in the treatment of patients.

Potentiation

Raw materials need to be transformed into a form suitable for use with a patient. How is this done?

Firstly, soluble substances are dissolved in water/ethanol. This produces what is known as a *Mother Tincture* (denoted Ø) When source materials are not in an immediately soluble form, the mother tinctures cannot be created in a single stage, as they can in the case of a soluble salt, for example.

All raw materials are selected according to the standardised procedures for that particular remedy, as specified in the pharmacopoeia.

Plants are gathered from their natural habitats where possible. Sub-species are distinguished from one another. Specific tissues are excised by hand or, in the case of barks and woods, may be done by machine.

Dry weight samples are created to establish water content, since this will affect the quality of mother tinctures.

The plant tissues are then placed in a container and water/ethanol mixture is added, in a specific weight/volume ratio, depending on the dry weights of the starting material. These proportions are specified according to the specific *monograph* for that remedy in the pharmacopoeia.

This starts the process of *maceration*, which takes 2-4 weeks depending on the starting material. During maceration, the plant cells gradually release their constituents into the water/ethanol solution. At the end of the process the solids are filtered out, and assays of water content are carried out on the liquid *mother tincture*. Spectrometry is sometimes also performed, to establish the shelf life of unstable plant constituents over time. Mother tinctures are usually stored in darkness, in a cool environment.

Insoluble substances are pulverised with lactose, using a pestle and mortar, through several stages. This process is known as *Trituration*.

1 gram of starting material is ground with 99 grammes of lactose for one hour to create a 1c trituration. 1g of the mixture is ten diluted with 99 grammes of lactose and the process repeated to create the 2c trituration.

Trituration of heavy metals, insoluble minerals and certain biological materials is usually achieved by hand-grinding the materials in a pestle and mortar through three separate stages each lasting 20 minutes. 33 grammes of lactose is added at the beginning of each 20 minute session

. (3x33g=99g).

This proportional solid to solid dilution fragments the raw material down to molecular level, whereupon it can be suspended as a colloid in a water ethanol mixture. The 4c potency is the first liquid stage for an insoluble starting material.

Liquid to liquid dilution & potentisation

The process of transforming the tincture into a homeopathic potency, is known as potentisation

$$\textit{Tincture/Triturated material} + \textit{Water/ethanol} + \textit{Kinetic Energy} = \textit{Potency}$$

A potency is not merely a dilution, but a preparation which has been increasingly polarised in its informational power by serially diluting and *succussing* (shaking) at each stage.

Potency Scales

The following table illustrates the *dilutional scales* involved in the potentising process. There are three scales of dilution in common use:

- **Decimal**; in which the base solution is diluted 1 part to 9 parts of water at each stage resulting in a molecular dilution of 10^{-1} at each stage of the process. (Denoted x or D)
- **Centesimal**; in which the base solution is diluted 1 part to 99 parts of water at each stage resulting in a molecular dilution of 10^{-2} at each stage of the process. (Denoted C or CH)
- **Fifty millesimal (LM)**; in which the base solution is diluted 1 part to 50,000 parts of water at each stage.

Note that a 12c or 24x potency represents a dilution of $1:10^{-24}$ which exceeds *Avogadro's number* (6.02×10^{-23}). The very first drop of mother tincture, used in the first stage of the process, has a finite number of molecules of the active starting material. As we serially dilute this in water, it is clear that eventually we will take a drop (for introduction to the next stage) which contains none of the molecules that were initially introduced. This creates what is known as an *ultramolecular* potency.

The Molecular Threshold

Base substances with a high molecular weight will disappear from the process earlier, because there are relatively fewer molecules of these substances in the starting drop. So lead and mercury can be expected to disappear around 7c, for example; while potencies made from low molecular weight substances will retain some molecular presence up to around 11c

Millesimal is the term given to dilutions of 1000c, ie 1M = 1000c, 10M = 10,000c.

$$\text{Drug} + (\text{Diluent} + \text{Succussion}) \times n = \text{nth potency}$$

Decimal (x)	Centesimal (c)	Dilution
1x	—	1:10 (10 ⁻¹)
2x	1c	1:100 (10 ⁻²)
3x	—	1:1000 (10 ⁻³)
4x	2c	1:10,000 (10 ⁻⁴)
5x	—	1:100,000 (10 ⁻⁵)
6x	3c	1:1,000,000 (10 ⁻⁶)
(etc)	(etc)	
12x	6c	1:1,000,000,000,000 (10 ⁻¹²)

Avogadro's number: 6.02×10^{23}

12c	1:10 ⁻²⁴
30c	1:5 billion (10 ⁻⁶⁰)

High Potencies

All potencies which have involved dilution of the solute to concentrations below 6.02×10^{23} are known as ultramolecular. Since homeopathic practitioners prescribe potencies above 12c (*High Potencies*), the sceptics have a logical point to make, when they suggest that any apparent therapeutic effects from these materials must be due to the placebo response.

Research carried out by Reilly et al at the Glasgow Homeopathic Hospital, tends to refute this view, by demonstrating statistically significant differences between placebo and ultramolecular potencies. The null hypothesis that homeopathy is a placebo response, was tested in a series of double-blind, placebo controlled trials. These trials examined the clinical effects of pollen in ultramolecular potencies (30c), in hayfever (1986) and asthma (1994) respectively. (Lancet)

ACTIVITY: Spend some time reading through these research papers, paying special attention to the discussion and conclusions.

Homoeopaths have made many empirical observations over the years, on the effects of high potencies in humans. The reaction patterns which are observed sometimes involve various expressions of the remedy picture itself. Although improbable in anything but a true biological response to the remedy, this does not in itself provide evidence of biological activity in *ultramolecular* potencies. The challenge for our generation will be to undertake good quality clinical research, which consistently demonstrates differences between potency and placebo.

In addition, a greater knowledge of the physics of water may help in the development of scientific models for the *potentising* process. (We will discuss a few of the scientific models for *potentisation* in the next section.)

Clinical Aspects

Potency Selection

In general, *low potency remedies* are given as frequently repeated doses, whereas *high potency remedies* are given in single doses and repeated infrequently.

Notes on potency choice:

Remember that the choice of remedy is more important than the potency choice.

High potencies are effective if they represent the *similimum* for the patient, or correctly address an acute disturbance.

Low potencies can be effective at a local level, even if they are not optimally chosen.

Low potencies of an inappropriate remedy rarely aggravate - they are merely ineffective.

High potencies may aggravate symptoms. (Most commonly the presenting complaint.)

Take care in infants and sensitive children - particularly if you are treating them for skin conditions or asthma - it is advisable not to give the first prescription higher than a 12c in an infant.

30c is usually considered a safe potency in nearly all other prescribing circumstances.

The elderly may not respond as effectively to high potencies, using medium or low potencies at more frequent intervals will usually be of greater value.

ACTIVITY

Now read the section on homeopathic pharmacy in your course reader. Pay special attention to the definitions given to the specialised terms. Also make sure you fully understand the differences between the *decimal*, *centesimal*, and *millessimal* potency scales.

SAQ Before you continue to the next stage, try to answer the following questions to test your understanding.

1. What are the main differences between a homeopathic remedy and a herbal medicine?
2. Can you name the main categories of source materials for homeopathic remedies?
3. What is a Pharmacopoeia?
4. What do we mean by maceration?
5. What is a monograph (in the pharmacopoeia)?
6. What is involved in the creation of a mother tincture?
7. What is performed at the end of the maceration process?
8. How are mother tinctures usually stored?
9. What is involved in the potentisation of an insoluble mineral?
10. What do we mean by a 1M potency?

ACTIVITY: before proceeding to the next stage, do a **web search** on *fractals*, *fractal geometry*, and *fractal models for natural forms*.

Relevant Further Reading

Modern techniques in potentiation

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A rationale for the potentising process in homeopathic remedies

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The mathematics of the potencies

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NMR spectra of sulphur potencies: artefacts of potentising

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A mathematical explanation of the process of potentiation

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J Am Inst Homeopath 1978 jun;71(2):95-98

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Spectrophotometric analysis of potentiation of *euphrasia officinalis*

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What's going on here anyway? A review of Boyd's " Biochemical and biological evidence of the activity of high potencies"

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J Am Inst Homeopath 1969 Dec;62(4) :199-251

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Broese R
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Winston J
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Ainsworth JB
Mid homoeopath Res Grp Newsletter 1979 Jul;(2):21-23

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