7. Using Homeopathic Remedies

When using homeopathy, one is giving a very small dose of a substance, possibly a poison, which in a large dose would cause similar symptoms to the illness presented for treatment. There is no strength to a homeopathic preparation other than what is known as potency. Unlike conventional medicines or agricultural treatments, the potency is not determined by the gross amount of active substance present. Instead it is determined by the number of times it has been ground, diluted and shaken according to the homeopathic method.

The remedies stimulate the organism's intrinsic defensive mechanism; once the initial dose has acted on the plant, a series of internal responses occur to re-establish the balance of vital forces within it. Homeopathic treatments act as a trigger and, for this reason, do not usually need frequent reapplication. In fact, overuse can counter the benefits achieved and in many cases can worsen the problem.

Types of Remedies

These chapters describe remedies made from mineral, plant and animal sources, as well as a number of microorganisms. The remedies can be grouped as follows:

Mineral remedies

Chapter 9 describes the use of 31 mineral remedies, including both pure elements and compounds, to treat nutrient imbalances. A number of these have additional roles in the treatment of infectious diseases, injuries and weed problems, along with a number of other organic and inorganic remedy substances (such as *Carbo vegetabilis*, *Natrium salicylicum*, *Pyrethrum*) discussed in Chapters 11 to 15. Some of these are derived from plants, so could also be placed in the next category.

Plant remedies

A range of plant species are used in potentised form for the treatment of plants within particular botanical families and for general or particular conditions. As explained in the introductory chapters, these are prescribed along standard homeopathic lines, depending on the nature of the problem to be treated. Some are familiar faces from the homeopathic materia medica (such as *Belladonna*, *Bovista*, and *Thuja*), applied to the specific difficulties faced by gardeners and farmers. Others have been introduced here because of

their usefulness as companion plants (see Chapter 12) or on the basis of traditional herbal and horticultural practice. Where individual constituents influence the remedy characteristics, these are discussed (for example, the reputed insecticidal properties of camphor in *Camphora* and *Tanacetum*).

Animal remedies

Most of the animal remedies described in this book are predators or parasites of plant pests. Using information from Integrated Pest Management (see below) and an adaptation of homeopathic principles, these are prescribed to counter the damage and disease in plants caused by their prey species. These include:

Insect predators	*Chrysopidae* spp. (green lacewings, gauzeflies) *Coccinella septempunctata* (ladybirds, sunchafers) *Syrphidae* spp. (hoverflies, syrphid flies)
Insect parasites	*Aphidius* spp.(parasitic wasps of aphid hosts) *Encarsia formosa* (parasitic wasps of greenhouse whitefly)
Arachnid predators:	
Spiders	*Latrodectus* spp. (including *Theridion*) *Tarentula hispanica* and *cubensis*
Mites	*Amblyseius* spp. (mite predators of pest mites)

A smaller number are prepared from pest species themselves, and are used to treat plants infested with the same creature or causing similar symptoms:

Bombyx processionea (Oak processionary moth)
Cantharis (Spanish fly, a blister beetle)
Coccus cacti (cochineal, a soft scale pest)
Helix tosta (snails)
Oniscus and Porcellio spp. (woodlice, slaters)

The remedy *Trombidium muscae domesticae* is an interesting special case, since the red velvet mite species from which it is prepared does not adversely affect plants (and probably not even its animal hosts). Nevertheless, it can still be prescribed on homeopathic principles for mite problems. (See Chapter 10.7 for more details.)

Microorganism remedies

Bacterial, viral or fungal pathogens can be used in potentised form to treat

conditions similar to those they cause in their natural state. As a fungus, the homeopathic remedy *Bovista* has been suggested to treat fungal diseases, but interestingly also mite infestations (see Chapter 10.7). The use of *Secale* and *Ustilago* to treat plants from the *Gramineae/Poaceae* family is reported in Chapter 11.

Bacillus thuringiensis is an example of a microorganism used as a biological alternative to pesticides; it causes disease in insect pests. Its use as a potentised remedy is explained in Chapter 10.1. Several fungi used in IPM (see below) have also been potentised.

Application

You must always follow the application guidelines carefully. Homeopathic remedies are easy to apply on both small plots and in commercial agriculture, but there are some basic rules that must be followed. Any liquid dispensing device can be used: watering can, backpack sprayer, boomspray, etc. They can be injected into reticulation systems at the tank or the pump. On large areas some calculation of watering rates may be necessary to administer the correct dose.

Do not mix homeopathic medicine with anything other than water. Do not use commercial herbicides, pesticides, fungicides or fertilisers for at least 10 days after applying homeopathic remedies: otherwise all the positive effects may be nullified.

Excessively acidic or alkaline water may affect the remedy's action, usually just slowing it down. Make sure your spraying equipment is not contaminated. Residues of agricultural chemicals may antidote the remedy. If in doubt, rinse well with the hottest water possible, or steam clean.

Application Rates

The dosages are approximate and may vary according to different circumstances and experiences.

1st: 500 ml/500 l per hectare or 10 ml/10 l on small areas
2nd: 250 ml/500 l per hectare or 5 ml/10 l on small areas
3rd: 125 ml/500 l per hectare or 1 ml/10 l on small areas

Procedure

First put in the remedy, then add the water. This is sufficient for mixing evenly. Where this is impractical, for example in large tanks, spend a minute or two stirring it with a large stick.

The most important part: each homeopathic remedy should be allowed to act

before it is repeated. In the event of a worsening of the symptoms, usually visible within 48 hours, antidoting should be resorted to.

Antidoting

If an adverse reaction is elicited by the remedy, look up the antidotes under the description of the remedy which you have applied, and use a single application. Where you do not have the antidote in your possession, apply the third application rate (see above) of the same remedy which you have used to bring out the effect.

Potency

It is recommended that the 6X potency is used initially. This contains a tiny amount of the original remedy substance. If you are sure the remedy fits, but the 6X does not work, try the 30X potency and see what happens. If this too fails, retake the case and prescribe a different remedy..

Suppliers

The homeopathic preparations described in this book for the treatment of plants and soil are available individually or as a set from Narayana Publishers.

For more information, contact:

Narayana Publishers
Blumenplatz 2
79400 Kandern
Germany
Tel: +49 7626 974 9700
Fax: +49 7626 974 9709
info@narayana-publishers.com
www.narayana-publishers.com

8. Treatment of Plant Diseases Arising from Nutrient Imbalances

Ammonium carbonicum

Sesqui carbonate of ammonia, *Sal volatile*. $[(NH_4)2CO_3]CO_2$. Solution, distilled in water.

A. General

A condition of under oxygenation. Plants are greatly affected by cold air, wet, stormy weather and rain. They pick up when weather gets warmer. Capillary engorgement results in sap loss. Flowers are premature, photosynthesis defective. Chlorophyll deficiency, as in chlorosis, reduces the capacity to incorporate simple molecules into complex compounds such as starch. Chlorosis is the lack of pigment giving the leaves a pale green or yellow colour.

Lack of chlorophyll induces the plant to shed leaves since it cannot afford to expend food on leaves that do not function. In deciduous trees, this happens every fall and the tree goes dormant during the winter. In other plants, chlorosis indicates disease, such as blotch, barley yellow dwarf virus, stripe rust, halo spot, spot blotch, yellow spot and nutrition imbalances, such as manganese, zinc or iron deficiency. When *Ammonium carbonicum* is indicated, there are many symptoms. The roots are usually dry, sometimes showing vesicles or swellings. The plant usually requires frequent watering, but nutrients are not absorbed, thus adding to the difficulties of photosynthesis. Respiration is particularly difficult. Nitrogen fixation in beans and peas may be affected by a molybdenum deficiency.

When excess ammonium is applied, it turns to nitrogenous nutrient. This in turn fixes sulphur, or in other words it antidotes, or is inimical. Sulphur then becomes deficient in the plant. *Ammonium-sulphuricum*. is indicated in such problems as it will modify the nitrogenous action and augment the action of the sulphur component. The relationship between nitrogen and sulphur is important in the diseases and symptoms that are produced when either is excessive or deficient.

Rusts

The rusts are dark red, as in *Belladonna*. The flowers appear premature, and

pollinate heavily, or not at all. The female parts do not function properly and fruit setting is incomplete due to this.

B. Clinical

Capillary engorgement, photosynthesis defective. Roots dark red with orange surrounds. Stem rusts, stripe rust, leaf rust, aphids, banana rust thrips.

C. Appearance

The rust manifests itself as pustules full of dark, reddish brown powdery spores on stems and leaves (both sides), sheaths and heads. The spores fall off easily, the pustules are oval and elongated. Surrounding leaf or stem surfaces are usually ruptured. Towards the end of the season, as the plant matures, the pustules produce black spores. Wheat stem rust also affects barley, durum and triticale. The fungus survives on green hosts such as grasses.

On grains

Rust assumes epidemic proportions when summer/autumn rains allow wheat or barley rust to survive throughout the summer. This disease can cause record crop loss within very short time at the end of a season. Warm (15-30°C/ 60-85°F) and humid conditions favour this disease. There are resistant varieties, but rust is versatile and develops new strains to survive. There are no chemical treatments for seed, and foliar spray is very costly. *Am-c*. or *Bell*. will quickly put an end to rust infection. Spraying is done early in the season (see also *Acon*.).

D. Flowers and fruits

Pumpkin

Rust also attacks heads, thus making flowering problematic, and fruit setting nigh impossible, resulting in total crop loss over a short period. Critical nitrate to nitrogen levels in the petioles of pumpkin at early fruiting lie at 4000 mg/kg for irrigated and 8000-8400mg/kg for dry land crops.

Fig. 1.0 Wheat leaf rust on wheat, *Puccinia triticinia*

E. Water needs

High.

F. Relationship

Antidote to: *Mang.*, *Zinc.*, *Ferr.*, *Sulph.*, *Sul-ac.*, *Moly.*

Compare: *Am-s.*, *Nit-ac.*, *Kali-n.*

See also: *Phos.*, *Kaliums*, *Calcareas*, *Magnesiums*, *Ferrums*, *Mang.*, *Cupr.*, *Zinc.*, *Natriums*. *Am-c.* affects all these when in excess.

Complementary: *Moly.*

Borax

Borax veneta. *Natrium biboraticum*, $Na_2B_4O_7$. Trituration and solution.

A. General

Boron stands at the head of group 3 in the periodic table of Mendeleev. Boron is known as a micronutrient because it is needed by plants in minimal amounts compared to the total amount of each of the other elements and the total aggregate of all the nutrients. Owing to its apparently insignificant position it has been overlooked until recent times. In fact, it is precisely because such small amounts are required that the micro-nutrients are so important in the life of plants. They give better results when applied separately. They form the backbone in many respects. The so-called plant foods nitrogen, potassium and phosphorus, although important, merely support its daily maintenance. A plant can live relatively long without too much of any of these three substances, while the inability to take up the microelements will result in severe symptoms in a relatively short time,

resembling serious disease.
Like *Alumina* and *Alumen*, with which *Borax* has a close relationship (since they belong to the same group of elements), the symptoms of *Borax* are clear-cut. The bulk of the symptoms come from toxicity reports from agricultural departments.

B. Boron toxicity

Toxicity with borax was not recognised until the 1980s. This is partly because it causes slightly different symptoms in different plant families, sometimes resembling other diseases.
In grains, barley is the only type which appears to show evidence of this problem, with symptoms resembling net blotch. The symptoms appear as dark brown spots on the edges and tip of the leafblade, turning necrotic. In net blotch the spots do not enlarge, but in borax toxicity they become so large and numerous that the leaves die. Moreover net blotch is surrounded by a chlorotic halo, whereas boron toxicity is not.
On cassavas, the symptoms resemble those of aluminium toxicity. The development follows a particular pattern of yellow to white spots, mainly along the leaf margins towards the tip. These are surrounded by a dark halo, become necrotic and give the leaves a jagged edge. Boron excess stunts growth and can also produce a diffused chlorosis, beginning at the tip of senescent leaves. Plants may recover later in life. Boron toxicity occurs on highly alkaline soils, as opposed to aluminium toxicity which is dependent on high acidity.

C. Boron deficiency

A deficiency of boron also causes stunted growth (dwarfing) and slight chlorosis. Plants recover quickly without reductions in size and yield. (Krochmal and Samuels, 1968)

D. Clinical

Boron imbalances.

Calcarea carbonica

Impure calcium carbonate. $CaCO_3$. Trituration of the middle layer of oyster shells or carbonate of lime.

A. General

Calcarea is one of the greatest monuments of Hahnemann's genius. His method of preparing insoluble substances brought to light in this

instance a whole world of therapeutic power, formerly unknown.

(Clarke)

It is essential to have an intimate acquaintance with the *Calc*. preparations, as they are pivotal to the understanding of homeopathy as a whole and its application in agriculture in particular. *Calc*. preparations have a wide range and a deep action. Handle with care is not an unnecessary precaution. Too much dosing can trigger severe aggravation in the crop and it is difficult to counteract it, as *Calc*. is an important constituent in the plant body. Calcium, being a building block in plants, has a consequent low mobility. As Teste remarks in his materia medica:

I know that carbonate of lime, phosphorus, phosphoric acid and all other substances which enter largely into the composition of the human body, exercise a deep and pervasive action on the organism; but this is, it strikes me, an additional reason why it should not be administered at random.

(Teste)

Calc. is closely related to *Belladonna* of which it is the chronic counterpart. Repeated occurrence of rust in cereal crops, may point to either calcium deficiency or excess in the soil. Demands for more irrigation are another indication for *Calc*.

In highly calcareous soils as found in the arid areas of the world, potassium applications can increase the yield in sugar beet by up to 79%.

Soils saturated in calcium and magnesium severely depress potassium uptake regardless of the amount of potassium applied.

Calc. is worse from cold, and better from heat. It corresponds to plants that are force-fed NPK, resulting in obesity, sluggish capillaries and lax fibre. Large features, pale, chalky look and feel in stems and leaves. Rather bloated than solid. *Calc*. has been used both on acid and alkaline soils. It proved more successful for the latter than the former.

B. Calcium deficiency

The root systems of several species of cassava are very sensitive to calcium deficiency. (Forno et al. 1976). Without sufficient calcium, root growth is severely restricted, resulting in necrosis and decomposition. Above ground, the leaves will burn and curl upwards at the tip, although this is not always observed (see also *Alumina* and *Alumen*). The *Leguminosae*/*Fabaceae* are more prone to show symptoms.

Appearance with potassium deficiency

The growing tips die at the 2-4 leaf stage. Older plants show gradual capillary collapse, beginning at the leaftips of the youngest leaves. Mottling of older leaves, folding backwards. Veins and edges remain green. Interveinal areas turn yellow-brown. Collapse of the flowering stalk; flowers wither and die. The leaves turn chlorotic and die. The interveinal spaces on the back of the leaves are pink.

C. Calcium shock

Sometimes the potting mix is so acidic that transplants cause calcium shock. *Calc*. can work miracles in such cases. *Calc*. must not, however, be used indiscriminately, as severe reactions can cause complete crop loss. Caution should be written in bold type over the *Calc*. picture. Deep-acting mineral remedies like the *Calc*. preparations require careful observation, frugal application, and close monitoring. By closely following instructions for application, it can do wonders for plants that do not thrive. In annuals like cereals, one dose in the entire life-cycle of the crop is the maximum allowed. In trees, no more than once per year, with a maximum of three applications in a row. In shrubs, once per 2-3 years, and no more than three times in total. Excessive liming can induce deficiencies of potassium, manganese, magnesium, iron, copper or zinc. Treatment with calcium usually does not have any bearing on the yields of pasture; it is, however, a suitable carrier for both phosphorus and sulphur.

When the soil is rich in calcium, as in the southwest of Western Australia, many species of plants do not thrive. Limestone sands are too alkaline for many species. An acid manure such as chicken or pig manure can bring pH levels back to normal. *Calc*. will greatly benefit plants that have difficulty in alkaline soils, although it is ecologically unsound practice to grow plants unsuited to this soil type.

It may be given on soils either rich or deficient in calcium when symptoms present themselves or return after an interval.

Appearance with potassium shock

Red margins on leaves, leaves yellow, sometimes swollen. Pale, chalky. Flowers too early, premature. Sterility of seed in fruit crops. Fruits do not set or mature. Spongy feel in seeds and fruits. No firmness, plant appears bloated, obese.

D. Clinical

Calcium deficiency as in bitter pit in apples. Calcium excess on calcium-rich soils. Plants obese, with lax fibre, pale, chalky look in stems and leaves. Damping off. Nitrogen excess. Anthracnose (Fig. 1.1).

Fig. 1.1 *Bean anthracnose, Colletotrichum lindemuthianum*

E. Appearance

Growth is irregular, late starters. Weaker in cold weather and rainy storms. Damping off in cereals and turf. Plants will look pale and collapse. Over-seeding will produce wrinkled, twisted and distorted plants. Roots short and brown. Heavy use of nitrogen fertilisers creates soft turf and cereals which are more susceptible to attack. Nitrogen applied during establishment stage leads to sudden collapse of seedlings. Avoid watering late in the day so that soil is dry at night.

F. Microscopic

Obese cells, thin cell walls, accumulation of salts, high water content.

G. Chemical

Excess water and nitrogen. Reduced protein levels.

H. Flowers and fruits

Reduced flowering period. Flowers do not last. Premature fruit dropping, sterility, little or no seed or fruit. Fruits do not mature, small, shrivelled.

I. Water needs

Very thirsty, wilt easily when internal water is used up during dry spells.

J. Relationship

Antidote to: *Mang.*, *Mag.*, *Kali.*, *Ferr.*, *Cupr.*, *Zinc.*
Complementary: *Phos.*, *Sulph.*, *Sul-ac.*
Inimical: *Kali.*, *Phos.* (to *Calcareas* except in *Calc-p.)*, *Magnesiums*, *Mang.*, *Ferr.*, *Cupr.*, *Zinc.*
Antidoted by: *Sulph.* (except *Calc-s.*)

Calcarea fluorica

Fluorspar. Fluorite. Calcium fluoride. CaF_2. Trituration.

A. General

Calc-f. is Schuessler´s “bone salt”. It is found at the surfaces of bones, in the enamel of teeth, in elastic fibres and the cells of the epidermis. These latter have significance in plant use. Induration, threatening suppuration. Spot blotch, stem rot and stem nematode. The skin or bark is dry and harsh.

B. Clinical

Affections on the stems, trunks and twigs. Hard, swollen nodes. Stem rot, spot blotch, stem end rot in avocado, stem nematode.

C. Appearance

Stem nematode (*Meloidogyne* spp.)
Bases of plants swollen. Tillers may be distorted, stunted, and more numerous than healthy plants. The nematode causes a brown rot at the base of the plants which tend to die prematurely.
Spot blotch (*Septoria* spp.)
Dark brown oblong spots or lesions on leaves and sheaths, often with yellow surrounds.
(Fig. 2)

Fig. 2 Septoria leaf spot and canker, *Septoria musiva*
Stem nodes infected with rot. This disease can lead to black point.
Stem rot (*Dothiorella* spp.)

The fungus causing this disease lives on dead twigs and leaves. Spores are splashed onto fruit in rainy weather. Spores remain dormant until the fruit is ripening. A dark brown to black rot begins at the stem end and gradually progresses down the fruit.

D. Flowers and fruits

Barley florets die, black point symptoms on grain, rot on avocados.

E. Water needs

Normal.

F. Relationship

Antidote to: *Ferr.*, *Mag.*, *Mang.*, *Zinc*.
Inimical: *Mag.*, *Phos.*
Antidoted by: *Sulph.*
Complementary: *Phos.*, *Sulph.*

Calcarea phosphorica

(Tri)calcium phosphate. Phosphate of lime. $Ca_3(PO_4)_2$. Trituration.

A. General

Calc-p. strongly resembles *Calc.* but is definitely a distinct remedy with some important differences. Plants are straggly and thin, rather than fat and obese. They appear less chalky. The paleness is dirty-brownish. *Calc-p.* is more brittle than *Calc.* The epidermis is soft and thin and it cracks. The leaves are thin and brittle. The flowers are strongly affected: long stamens with abundant pollen, yet small. Fruits prone to rot, with soft skins. *Calc-p.* plants are sensitive to cold and damp weather. Leaves that show spots and eruptions, as is evident from the clinical section.

B. Clinical

Debility. Straggly, thin plants. Small fruits with soft skin, prone to rot. Stem rot, stem nematode, spot blotch, seed gall nematode (Fig. 3), eye spot, tan spot, downy mildew. Mainly found in cereals.

Fig. 3 Wheat seed-gall nematode, *Anguina tritici*

C. Appearance

Net blotch (*Pyrenophora teres*)

Develops first as small circular to elliptical dark brown spots which elongate and produce fine dark brown streaks along and across leaves, creating a distinct net-like pattern. When severe, it also affects the heads. The affected area turns yellow. Withering. Residue can produce spores over two years. Infection requires moist conditions, 15-25°C (60-75°F). Very humid conditions infect the seed.

Seed gall nematode (*Anguina* spp.)

Wrinkled or twisted or rolled leaves, stems swell at ground level. At heading, plants appear stunted and slow to mature. Instead of grain, there are hard brown/black seed galls. Affected heads are small. Rye, wheat and triticale. The nematode can survive in soil for two years. They are released from the gall in moist conditions, migrating in water films on leaves and sheaths, reaching immature heads. They enter immature florets, mate, reproduce and form galls.

Eye spot (*Cercosporella herpotrichoides*)

Lodging. Plants fall in all directions, breaking within two inches of the surface. Sooty mould on the break and under the sheaths. Brown or honey-coloured lesions. Spores survive on residue, are spread by rain splash, and prefer moist conditions and 10°C (50°F). Soil nitrogen levels are high.

Tan spot (*Cercosporella* spp.)

Tan spots, yellow margins, leaves dry out and wither. It survives on stubble with small black fruiting bodies that release spores in wet conditions. The longer the wet period, the more severe the infection. Durum wheat, triticale and grasses. Not often seen in rye, barley or oats.

Downy mildew (*Peronospora* spp.)
Young plants show leaf yellowing and severe stunting and excessive tillering. Many plants die at this stage. Older plants have thickened, leathery leaves and twisted, fleshy and distorted heads (crazy top). Affected tillers produce no grain. Worse in moist conditions. It affects wheat, barley, oats, rye, durum and triticale, maize, sorghum and many grasses.

Caution

As with all *Calc*. preparations, the important thing here is to exercise caution. Deep-acting remedies that form part of the body of plants must never be over used. If given too often, the negative effects will compound the existing problem.

D. Flowers and fruits

Flowers are severely affected, little or no grains. Flowers with long stamens and abundant pollen, fruit grains have soft skins and are prone to rot.

E. Water needs

Usually only occurs if water is too abundant.
The combined effect of calcium and phosphorus can be seen operating in this remedy; the epidermis is weak, making for many lesions in the form of spots and rots. The reproductive organs are severely affected so that crop losses occur. A single application during the lifetime of cereals is sufficient to arrest most problems.

F. Relationship

Antidote to: *Ferr.*, *Mag.*, *Mang.*, *Zinc*.
Inimical: *Mag*.
Antidoted by: *Sulph*.
Complementary: *Phos.*, *Sulph*.

Cuprum metallicum

Copper. Cu. Trituration. Elemental copper used for this preparation.

A. General

Metallic copper works from within outwards. It ranks with the most important of those remedies which relieve states arising from the “striking inwards” of diseases. It is this power to relieve internal spasms which renders it appropriate in the state of collapse. *Cuprum* produces epidermic symptoms. Agricultural publications make it clear that copper deficiency or excess hinders the uptake of other nutrients, as long as the imbalance occurs in the plant.

The plant seems to require more water and nutrients, there is chlorosis after excess iron, roots appear speckled white. Sometimes plants smell rotten, although no rotting tissue can be found, and no unusual symptoms are in evidence. Withertip can be seen as the state of cramp or spasm found in humans or animals. Affected shoots bend easily, wither and die. New shoots emerge lower in the tree or plant, producing branches that look like mistletoe on the shoot tips. Because shoots do not mature, fruit setting and flowering are either totally absent, or impaired. Fruit-drop in apples points to fertiliser toxicity and copper deficiency, as well as hot dry summers, persistent wet, early winters, and competition between fruits.

B. Copper deficiency

This expresses itself as sterility of the pollen. It also increases the susceptibility to powdery mildew. Disease resistance depends on the age of the plant and the degree of the deficiency.

Copper deficiency affects carbohydrate metabolism, nitrogen metabolism, cell wall permeability and seed production. Young fruit trees are affected mainly on sandy soils. Speckling of the leaves. Withertip in grains; witch's broom appearance. Termination of all growth. Copper is antidoted by potassium.

Impaired photosynthesis, respiration and evaporation are some of the other problems associated with copper imbalance. Liming can be an aid in copper deficiency (see *Cupr-s.*). Copper is an activator of some enzymes and may play a role in abscission, as some plant hormones and enzymes are triggered by copper.

In soil copper becomes "locked up" and unavailable to plants when nitrogen or ammonium are excessive.

The relationships between copper and sulphur are also expressed through the sulphur-based herbicides. It is generally accepted practice to use these in the beginning of the lifecycle of a grain. Studies conducted in Western Australia, (Robson and Snowball, 1990; McLay and Robson, 1992) and South Australia (Pederson, R. N. et al., 1991) showed that sulfonylurea herbicides can reduce the uptake of copper and zinc in barley and wheat.

C. Clinical

Copper deficiencies and excesses, fruit drop, flower drop excessive. Only 1-2% of flowers have set fruit. Premature fruit drop. Anomalies of flowering and fruiting. Early abscission of leaves.

D. Relationship

Antidoted by: *Ammoniums*, *Calc*., *Ferr*., *Nit-ac*., *Phos*., *Kali-i*. and other *Kali* remedies, *Sulph*.
Inimical: *Moly*., *Sulph*. (except in *Cupr-s*.), *Zinc*.
Antidote to: *Ferr*., *Phos*.
Complementary: *Sulph*. (except in *Cupr-s*.)

Cuprum sulphuricum

Sulphate of copper. $CuSO_4 5H_2O$. Trituration.

A. General

In his “Treatise on Dynamised Micro-Immunotherapy ”, O. A. Julian describes an experiment on plants performed by Prof. Netien of Lyon and his assistant Mme Graviou in 1965. They proved the activity of infinitesimal doses of *Cupr-s*. on plants intoxicated with the crude substance.
The dwarf beans were germinated in some buckets filled with earth. Three times per week, a solution of copper sulphate (20 mg/litre) was watered in for a period of two months. The plants developed, flowered and bore fruit. Some of the treated beans were collected for experiment with homeopathic dilutions. As a control, some of the seeds were not treated with homeopathic dilutions. Germination occurred normally for both treated and untreated plants: those not treated were watered with distilled water, while the treated plants received distilled water with either 5C, 7C, 9C, or 15C of *Cupr-s*.
After three days of observation, no difference was noted over all groups in regard to growth and development. The young plants were then placed in twice distilled water in culture phials, each plant in its own group. At the end of three more days, all groups except the control group were returned in their corresponding homeopathic solution.
On the eleventh day, photographic evidence was collected to verify that, compared to the control, a very marked increase in development of the plants treated with homeopathic dilutions of *Cupr-s*. had taken place. The increase was especially marked on the roots, while the difference between the potencies was much less than that between the treated and the control groups.
Further evidence was collected on days 15 and 18. It had been shown that the homeopathic dilutions of *Cupr-s*. have a positive action on the growth of bean seeds collected from plants intoxicated by crude copper sulphate.
The same experiment on seeds from “normal” plants gave much less

convincing evidence. It can therefore be concluded that the diseased plants, with disturbed metabolism due to poisoning with copper sulphate, demonstrate the efficacy of homeopathic treatment.
This research has been thoroughly confirmed by Netien, Graviou and Boiron who have repeated the experiment using only the 15C potency of *Cupr-s.*, publishing the results in 1972.
Sulphur deficiency increases susceptibility to take-all (*Ophiobolus graminis*), when it is caused by an excess of potassium.

B. Clinical

Copper and sulphur toxicity.

C. Relationship

Antidote to: *Ferr.*, *Phos*.
Inimical: *Kalium.*, *Moly.*, *Zinc*.

Ferrum metallicum

Iron. Fe. Trituration. Elemental iron used for this preparation.

A. General

Iron (*Ferrum*) is needed for the process of photosynthesis. If there is an iron deficiency, plants become chlorotic, with a lack of chlorophyll.
As Calcium represents Water, so Iron represents Fire, Phosphorus is Air, and Silica and Potassium are Earth.

B. Clinical

Chlorosis. Pale, sickly plants that nearly fall over. Imperfect assimilation, impaired photosynthesis, protein content low. Fruit and vegetables have no taste. Bacterial blights (Fig. 4), waterlogging, head tipping, blasting, orange bug.

Fig. 4 Bacterial blight on soybean

Chlorosis in plants, sterility, no fruit, no flowers, sickly stunted growth, pale, no strength to stand up, as in *Calc*., *Calc-f*. and *Calc-p*. with which it should be compared. Imperfect assimilation due to capillary problems, capillary collapse. Impaired photosynthesis due to absence of chlorophyll, consequently low protein content as photosynthesis produces the glucose needed in the manufacture of proteins. This in turn leads to further weakening of the plants with inevitable collapse.

Iron is known as a nutritive remedy in some plant disorders, having an organopathic relationship to the capillary system. Digestive disorders with inability to assimilate calcium. It is not suited to all cases of chlorosis, or even the majority of them. It should, however, be given with discrimination and careful observation. Excess iron will cause anaemia and chlorosis and *Ferrum* preparations will severely aggravate in repeated doses.

It is suited to the type of chlorosis often seen in young plants with little capillary action. The appearance may be deceptive as the plant is healthy, yet with many pale leaves, as well as a droopy appearance. There is paralysis of the capillaries, which sets up a chlorotic weakness. Irritability of the tissues; they bruise easily. Plants are worse after watering and cold spells. In such cases, the sulphide and phosphate are better than the pure metal, unless it is clearly indicated.

Note

Ferrum must be used with care. In general, *Ferr-p*. or *Ferr-s*. are better suited. *Ferr*. has some symptoms in common with *Calc*., *Sil*., *Phos*., *Kaliums* and *Ammoniums*, *Mang*., *Mag*. and *Nit-ac*., because they form part of the properties of all living creatures and as such all of these remedies need careful study in their relationship to plants.

Ferrum preparations perform a similar function to the *Calc*. group, but are very different and so cover a different range of diseases, as well as curing some of the same diseases.

Its relationship to *Mag*. is in a supportive role in photosynthesis. With *Phos*. its relationship is more in the same vein: oxidation.

C. Appearance

Pale, sickly looking plants; no strength to stand upright. Chlorosis, low protein content, juvenile plants refuse to grow. Paleness of a dirty white or yellowish appearance.

D. Chemical

Impaired photosynthesis, low protein content, systemic collapse of capillaries, paralysis of the capillary system. Impaired nutrition, little or no photosynthesis, low phosphorus and calcium content. Low sugar and starch.

E. Flowers and fruits

Flowers have increased pollination, yet are sterile. No fruits, or incomplete fruit setting. Immature fruit drops too early.

F. Water needs

Either want of water or worse for watering.

G. Relationship

Antidote to: *Calc*., *Phos*.
Inimical: *Kali*., *Phos*., but not in *Ferr-p*.
Antidoted by: *Cupr*., *Mang*., *Zinc*.
Complementary: *Mag*.
Compare: *Ammoniums*, *Calc*., *Kaliums*, *Mag*., *Mang*., *Nit-ac*., *Phos*.

Ferrum phosphoricum

Iron (III) phosphate. Ferric (ortho)phosphate. White phosphate of iron. $FePO_4$. Trituration.

A. General

This is the form used as a tissue salt by Schuessler, and also in organic agriculture, rather than Iron (II) hydrogen phosphate, $FeHPO_4$. Schuessler put *Ferr-p*. in the place of *Aconitum*, *Belladonna*, *Gelsemium*, *Arnica* and others which correspond to circulation disorders.
Relaxation of tissue. It retains the features of other *Ferr*. preparations and caution is warranted.
Iron and its salts possess the property of attracting oxygen. The iron in the sap takes up produced oxygen which it transports at night to be exhaled by the plant. During the day a plant takes up carbon dioxide from the air. The sulphur contained in the sap and capillaries assists in transferring oxygen from all the cells containing iron and sulphate of potassium. When the molecules of iron contained in the cells of the cambium have suffered a disturbance through some injury or wound, the affected cells grow flaccid. If this affection takes place in the annular fibres of the capillaries, they are dilated and sap is increased. This state is reached during the first stage of inflammation. When cells are brought back to normal with *Ferr-p*., the cells

can cast off disease. When the flaccid cells in the cambium receive *Ferr-p.*, the normal tension in the capillaries is restored. The swollen vessels are reduced to their normal size and thus the spots and blotches disappear, leaving only a little scar tissue as shown from clinical tests.

B. Clinical

For removal of excessive flow of sap; vies with *Arnica* and *Calendula* as a first aid remedy. Indicated in the first stages of rust. Yellow leaf spot, spot diseases, smut diseases (Fig. 5), aphids, black leg.

Fig. 5 False smut, *Ustilaginoidea virens*, sign

C. Appearance

Reddish inflamed roots, dry under epidermis. Very thirsty plants that do not assimilate nutrients. Capillary congestion. Pale, straggly- looking plants with many eruptions. Tan spot, blotches, bacterial blights, aphids, take-all.

Halo spot (*Pseudomonas* spp.) (see Chapter 11).

Stripe blight (*Xanthomonas translucens*) (see Chapter 11).

D. Water needs

It is advisable not to water much in dry weather to stop spread. The plant is very thirsty and wilts. Use trickle system.

E. Flowers and fruits

Either abundant pollen or complete absence. Premature flowering, difficult flowering, difficult setting of the fruit.

F. Relationship

It is not only *Ferrum* preparations that are indicated in such diseases. The *Ferr-p*. debilitation and suppurative processes paint a perfect picture of the capabilities of *Phos*. to upset the epidermis with blackish ulcers. *Nit-ac*. and *Kali-c*., *Nat-s*., and *Nat-c*. may be indicated for similar symptoms. Although normally *Phos*. is the antidote of *Ferr*., here it is seen as a complement, because the normally antagonistic actions are here combined. This creates a

substance which not only acts on the capillaries - hence the rots - but is also a stimulant for flowering and fruit setting.

Ferrum sulphuricum

Sulphate of iron. Iron (II) sulphate. Ferrous sulphate. $FeSO_4$. Trituration of freshly prepared crystals or solution.

A. General

When a sulphate and any oxide of iron come into contact with decomposing organic matter, they surrender their oxygen and form a sulphate of iron. After more oxidation this further decomposes into sulphuric acid and a single oxide of iron. The acid is destructive to an extreme degree in plants and other living entities. Therefore it is not recommended even in potency in plants, since it will destroy life. In this capacity it may serve as a weed killer, but we recommend other remedies for this purpose. We are of the conviction that it is better to use pests to get rid of weeds, since they serve a useful purpose in that capacity.

Ferrum is important in plants for the transport of oxygen. Sulphur serves another purpose that is dependent on the presence of iron, copper or other minerals, since sulphur cannot act by itself in plants. Plants cannot take up sulphur without the help of other elements and thus sulphur can only be absorbed in compounds.

Sulphur is inimical to *Mang*. and the *Natrium* salts and is thus contraindicated in salty regions. Even *Nat-s*. cannot be used, because it will disrupt the processes in plants, hindering the uptake of manganese. Naturally, it is imperative that *Sulphur* compounds be monitored throughout the period of use, to avoid negative effects. Since it is a micronutrient, any excess will immediately set up reactions.

Ferr-s. corresponds, like *Calc*. and *Calc-f*., to the condition of cancer in trees. Nutrients are not taken up. It may be suited to removing mercury from plants, or modifying mercury uptake in plants. All symptoms are worse in summer, on warm days, at night and in the morning. Afternoons generally give the best appearance. The roots may appear discoloured, red, or have bright red papular eruptions. Swelling of parts of the roots. There is a dry feeling under the epidermis of the root (in healthy plants, this is moist). Nutrient uptake is impaired or absent. Moulds of all kinds: powdery mildews, downy mildew, grey mould of all species, sooty mould of all species, some black moulds.

The exception here is slimy moulds which, on account of similarity in appearance, have been grouped with snails and slugs and covered by *Helix*. To treat sodium arsenite toxicity, ferric sulphate can be used in crude form, 10 pounds per 100 square feet. Note that the ferric type should be used, not the ferrous type used to prepare the homeopathic remedy. This should be followed by gypsum application, to neutralise any remaining sodium traces.

B. Clinical

Impaired photosynthesis, deformed flowers, straggly, twisted, deformed appearance. Tree cancer. Moulds and mildews, black point (*Bipolaris* spp.), septoria blotch (*Septoria* spp.). (Fig. 6, 7).

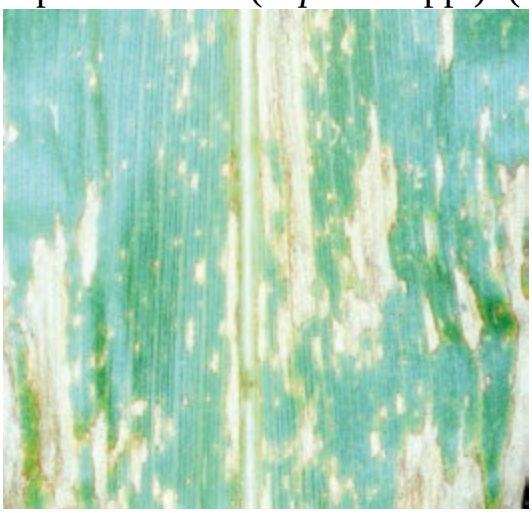

Fig. 6 Southern corn leaf blight and stalk rot, *Bipolaris maydis*, symptoms

C. Appearance

Grey mould (*Botrytis* spp.) (see Chapter 11)

This fungus produces sclerotia (resistant and masses) and can be present throughout the whole year in plant debris. Grey furry surface indicates spore formation. Cool, humid conditions are required. The spores are spread by wind. All above ground parts are affected, although there is an affinity for fruit. Pears develop a soft brown rot and the spores are typically grey and powdery, assuming conditions are favourable.

Sooty mould-black point (*Bipolaris*, *Alternaria* and *Fusarium* spp.) (Fig. 8) (see also Chapter 11)

Fig. 8 Black spot, *Alternaria* spp.

Also called black spot, this disease can be caused by several types of fungi that live on decaying grasses; it is very common. The embryo end of the growth darkens. It is better, when using infected seed, to spray shortly after seeding with *Ferr-p*. to reduce infection and thus have clean seed for the next crop. In this way, resistance is built up and carried into the next generation, thus making susceptibility obsolete. What takes enormous amounts of time and money through genetic engineering can be achieved cheaply and quickly through homeopathic treatment.

Septoria blotch (*Mycosphaerella* spp.) (see also Chapter 11)

Blotches on leaves, irregular in shape, tan to brown, occasionally silvery with yellow rims. Along leaf veins, blotches have straight margins. After three weeks to a month, small black fruiting bodies form on the leaves. This is the time to spray *Ferr-s*. In moist conditions spores are produced and are carried from leaf to leaf by rain splash. In heavy rainfall, crop loss of up to 30% has been recorded.

Septoria nodorum blotch (*Leptosphaeria nodorum*) (see also Chapter 11)

Blotches on leaves that are yellow or tan to brown, oval shaped, turning to grey as they enlarge. Leaves die with yellow tops. Chlorotic appearance. Fruiting bodies are grey-brown with specks within blotches.

Fig. 7 Septoria leaf spot and canker, *Septoria musiva*, symptoms

D. Relationship

Compare: *Sulph*.
Antidote to: *Calc*., *Cupr*., *Phos*.
Inimical: *Kali*., *Moly*., *Phos*.
Antidoted by: *Cupr*., *Mang*., *Zinc*.

Kalium carbonicum

Potassium carbonate. K_2CO_3. Solution. Trituration and solution.

A. General

The potassium salts form a large part of a plant's diet, and are therefore remedies of prime importance where nutrition is impaired or imbalanced. Although differences will be found in its respective constituents, as is the case with the *Calc*. and *Ferr*. preparations, the *Kalium* symptoms run throughout the pathogenesis (see also *Cham*.).
As with all tissue salts, caution is recommended, as indiscriminate use leads to disaster; witness the excess application of NPK, which has produced much disease in plants and consequently animals and humans. In potassium excess and deficiencies alike, *Kali-c*. works well, but how it is used will depend on the plant species concerned.
Potassium was seen in Europe (Denmark) to increase ear number, but reduce grain weight in higher than normal applications. Drought combined with excess potassium during ripening reduces yield. Both grain weight and number per ear were negatively affected. It stimulates leaf growth, thus increasing dry matter.

B. Potassium deficiency

Cotton varieties which fruit faster and have higher yields develop potassium deficiencies even with extra applications (Fig. 9). The cotton bolls will then withdraw potassium from the leaves, leading to their breakdown, as well as a reduction in the quality and quantity of cotton per plant. (Hake, 1991)

Fig. 9 Potassium deficiency, damage

Potassium carbonate, sometimes called “vegetable alkali”, exists in all plants, and was originally obtained from the ashes after burning wood. The potassium salts have a more specific relationship to the solid tissues than to the fluids in the plant. Both excess and deficiency can cause the following symptoms which correlate with the findings of Mason et al. (1975).

The fibrous tissue is especially affected. It corresponds to conditions in which these tissues are relaxed. It affects flowering and fruit setting, the capillary system, leaves, stems, twigs, branches and roots. It is indicated in situations where plants seem to “give out”. Chlorosis is an important feature. The plant is worse in windy or cold weather. Problems alternate, weak plants with epidermis watery and very pale. Plants feel better during the day, and may wilt at night. Vesicles on the roots. Acidic soils exacerbate the problem. There is a sudden collapse of the top layer of cells on the older leaves. There are waterlogged blotches, turning into dead patches. Chlorosis, extending from the margin inwards. The leaves and later the flowers wither and die. Total capillary collapse. Also puckering of the older leaves: wilting leaves have a dull sheen. (Mason et al. (1975)

C. The role of potassium in magnesium deficiency syndrome in cattle

This is caused by anomalies in the ratio of potassium to calcium + magnesium. This discrepancy serves as a guide to potentially lethal pastures.

It was found that when this ratio exceeds 2:2 in grasses, cattle death ensues. Different plant species as well as different soils give different critical ratios K/(Ca + Mg) values.

D. Clinical

Kali-c. is indicated in any plants that either lack or have too much potassium and calcium. In calcium-rich soils, where potassium gets "locked up", in soils with poor calcium content, nutrients do not assimilate.

Kali-c. is associated with many diseases, deficiencies and when soil is poor. Again, caution is important when using any *Kali* preparation.

Fibrous tissue is weak; flowering and fruit setting impaired. Capillary engorgement, chlorosis, worse in acidic soils.

E. Flowers and fruits

Flowers are either abundant in pollen, or have none at all. Fruits drop prematurely, fail to set or ripen. Leaves have a dry epidermis, feel brittle, and have yellow or red spots, which are corrosive and destroy surrounding tissue.

F. Relationship

Antidote to: *Bor-met*., *Bor*.

Antidoted by: *Calc*. and other *Calcareas*, *Natriums*.

Inimical: *Bor-met*., *Bor*., *Calc*., *Calc-p*., *Calc-sil*., *Calc-s*., *Ferr*., *Mang*., *Natriums*.

Kalium muriaticum

Chloride of potassium. KCl. Trituration. Solution.

A. General

Schuessler says of the salt:

> *It is contained in nearly all the cells and is chemically related to fibrin. It will dissolve white or greyish white secretions of the mucous membrane and plastic exudations. When the cells of the epidermis lose molecules of Kali mur., in consequence of a morbid irritation, then the fibrin comes to the surface as a white or whitish-grey mass; when dried this forms a mealy covering. If the irritation has seized upon the tissues under the epidermis, then fibrin and serum are exuded causing the affected spot on the epidermis to rise in blisters. Similar processes will take place in and below the epithelial cells.*
>
> (Schuessler cited in Clarke)

Clarke comments that *Kali-m*. manifests the action of its two constituents in roughly equal proportions. The keynote is whiteness of secretions, exudations

and eruptions of the tissues. The next important keynote is toughness; in plants, mildews are tough and thready.

As *Kali-m*. contains one of the main constituents of NPK, providing the potassium to the soil, it is evident that this remedy is of prime importance in the removal of problems originating from excess potassium. Excess of this element can block a plant's uptake of magnesium, because the potassium binds to it and it becomes unavailable.

Salinisation of soil (with excess salts) mainly involves sodium chloride (common salt), but potassium, calcium and magnesium ions are also involved. This is a complex environmental problem, caused by poor agricultural practices, land clearing and the rise of the water table, which can result in the creation of salt lakes and salt pans.

Sodium and chloride bind easily, and potassium too forms many compounds; *Kalium* remedies are the most numerous mineral group in our materia medica, *Kali-mur*. also being a chloride. This again reflects the complexity of salination problems.

All three major macronutrients (NPK) are related to levels of pest attacks, especially phosphorus, but also potassium. This led us to carry out a study of plants fed NPK, comparing those given or not given *Kali-m*. Subsequently attacks. This led us to carry out a study comparing manganese and potassium; levels were tested and susceptibility to pests and diseases was investigated. On aphids it had little or no effect, but a slightly positive result was seen with barley yellow dwarf virus (BYDV). (Fig. 10)

Fig. 10 Barley yellow dwarf virus on common wheat

The *Kalium* salts are the most extensively dealt with in homeopathy. This great variety shows us that potassium may lock up many more salts not known to affect plants, and the relationships potassium forms with other elements may lead us to new discoveries in plant chemistry and biology. Although we may not yet understand these relationships fully, it will certainly help if more research is directed at their unravelling.

It is true that minerals in plants function differently to minerals in the human body. We do not yet know the full details of how these different roles relate to homeopathic remedy relationships for plants. Our existing knowledge need not necessarily be completely discarded, since the clinical experience of many generations of homeopaths suggests that an antidote is always an antidote. However, it is also possible that a remedy which normally acts in an antidotal or inimical way could become a complementary remedy in plants. As always in homeopathy, the key principle here is individualisation. Each particular situation should be assessed in these terms and, as with any other living entity, it is the patient and not the disease which needs to be treated.

B. Kalium deficiency

This includes sudden or delayed collapse of the top layer of cells in older leaves, with waterlogged areas which later become dead patches. These leaves then become pale and turn yellow at the leaf margins, with discolouration extending towards the centre. The areas around the midrib and veins remain green the longest. The older leaves begin to die, followed by the younger ones. Flower heads wither and die, until the whole plant is affected and dies. Some plants are more susceptible than others, and even different species within the same family.

C. Clinical

Grey moulds, powdery mildew, downy mildew.

D. Appearance

Greyish white moulds

These appear on roots, stems or leaves. Plants are affected by mildew; roots may be affected too. Swollen capillary system. Dry flour-like moulds and mildews. Burns of all degrees.

Moulds and mildews

These represent the most salient types of plant disease related to the remedy *Kali-m*., and are influenced by potassium's interactions with other elements. Potassium is antagonistic to boron, thus reducing boron uptake and causing crown rot in turnips, and sickle leaf and hollow stem in cauliflower. Potassium and magnesium are mutually antagonistic; too much of either reduces the uptake of the other. Although corresponding relationships are not recorded within our existing materia medica, it might prove very helpful to follow up on soil analysis with the addition of an element that, homeopathically, will trigger the uptake. It is useless to apply high NPK and then follow with boron or magnesium; it will only add to the soil's woes, but in conventional agriculture, this type of practice is the only solution open to the farmer.

A homeopathic remedy will act on both plants and soil microbiology, because a microbe induced into inactivity by NPK will be activated by the homeopathic dynamis. In plants it will be visible in the restoration of health which is only possible if the deficient element has been taken up. Therefore the restoration of health in the plant automatically includes the diseases of soil microbial life as they are mutually dependent.

E. Flowers and fruits

Flowers mouldy, fruits with mildews. (Fig. 11)


Fig. 11 Grey mould, *Botrytis cinerea*

F. Water needs

Normal.

G. Relationship

Compare: *Nat-m.*
Antidote to: *Mag.*
Antidoted by: *Ferr., Mang., Nat-m.*
Inimical: *Nat-m.*

Kalium nitricum

Saltpetre. Nitrate of potassium. KNO_3. Trituration or solution.

A. General

Many plant diseases such as eye spot, powdery mildew and others are caused by excess nitrogen. It causes irregularities in flowering and fruit setting, photosynthesis irregularities, and fluid uptake difficulties. The roots may show mouldy patches. Plants are thirsty and wilt easily when fluids are used up during droughts.

This remedy can do much to balance the nutrients, lower the nitrogen content in the plant, aid photosynthesis and enhance the protein content. Excess pollination will be regulated and fruits will set and ripen properly.

Kali-n. can be helpful in sulphur deficiency, when there is excess nitrogen in the plant. This is only possible when at the same time there is also a potassium imbalance.

B. Clinical

Nitrogenous soils, excess or deficiency of nitrogen and related problems. Excess or deficiency of potassium. Yellowing from nitrogen deficiency.

C. Relationship

Compare: *Nit-ac.* and *Amoniums.*

Complementary: *Sulph*.

Kalium permanganicum

Permanganate of potash. Potassium permanganate. $KMnO_4$. Trituration and solution.

A. General

This is another potassium salt which is an oxidising agent, helping in photosynthesis and protein enhancement. The roots appear too dry under the epidermis. The plant is thirsty, as evidenced by a wilting appearance, yet watering does not seem to help. It has a similar action to iron (see *Ferr*. preparations). It has a marked power over oxidation.

The normal relationship of *Mang*. being the antidote to *Kalium* is totally suspended here, of course. Here the two substances complement one another, rather than having antagonistic effects.

In medicine, the strong oxidising properties of this substance are used for antiseptic purposes. It is used to treat fungal skin infections in humans and animals, and can be valuable for mildews and grey speck in plants.

Lack of oxidation brings on pests; they thrive on plants that have the type of wilting seen here, as it pertains to weakness. A plant lacking oxygen is as good as food for pests because it has no resistance. The taking up of oxygen enables the plant to process its food, while a lack brings on “constipation” or “diarrhoea”. This means that its carbohydrates are either unavailable – the plant cannot transport them from the roots to where they are needed – or are processed too fast, due to some enzyme imbalance.

B. Clinical

Excessive wilting, with no improvement from watering. Pale striping from manganese deficiency. Grey speck.

C. Relationship

Compare: *Mang*.

Inimical: *Ferr*., *Nat-m*., but not *Mang*.

Antidoted by: *Nat-m*.

Kalium phosphoricum

Phosphate of potassium. K_2HPO_4. Trituration. Solution.

A. General

By analogy, Schuessler tells us that *Kali-p*. produces irregularities in the capillary system. Nutritional problems; nutrients are not taken up the plant,

which is weak, gangrenous, and straggly. The immunity of the plant is greatly impaired; drought, stress, frost and temperature shock affect the plant profoundly.

B. Clinical

Chlorosis. Photosynthesis impaired. Potato gangrene. Bloated leaves, full of fluid. Purpling of leaves in phosphorus deficiency. Environmental stress. (Fig. 12)

Fig. 12 Phoma blight, *Phoma medicaginis*, symptoms

C. Appearance

Head tipping

Sterility from blasting and waterlogging are some of the environmental stress symptoms associated with *Kali-p*. imbalance. The generative sphere is strongly affected, flowers pollinate excessively or not at all whilst fruit setting is slow or only partial.

Purpling in barley

This is due to phosphorus imbalance, which is also the cause of susceptibility to environmental stress and flowering and fruiting irregularities. The capillary problems were positively affected in field tests.

D. Relationship

Compare: *Am-p.*, *Calc-p.*, *Cham.*, *Ferr-p.*, *Mag-p.*, *Phos.*
Antidoted by: *Ferr.*, *Mang.*, *Nat-m.*
Inimical: *Ferr.*, *Mang.*, *Natriums.*

Kalium sulphuricum

Potassium sulphate. K_2SO_4 . Trituration.

A. General

Kali-s. acts reciprocally with iron in the transfer of exhaled oxygen, and is found in all cells containing iron. A deficiency of *Kali-s.* results in

desquamation of the cells of the epidermis and epithelium which have been loosened because of excess oxygen remaining during the day. Useful after rust disease. When a sulphate and any oxide of iron come into contact with decomposing organic matter, they surrender their oxygen and form a sulphate of iron. After more oxidation this further decomposes into sulphuric acid and a single oxide of iron. The plants suffer most on hot days and during summer. From the pathogenesis, this remedy may be effective in the first stages of ergot disease, when the sticky, shiny droplets are produced during flowering.

B. Clinical

Impaired photosynthesis. Rust and its results. Chlorosis. Useful in the beginning stages of ergot (Fig.13). Banana rust thrips.

Fig. 13 Ergot

C. Appearance

Rust or chlorosis, first stages of ergot disease.

D. Water needs

Normal.

E. Flowers and fruits

In ergot, when the sugary, shiny droplets are formed during flowering.

F. Relationship

Compare: *Ferrums*.
Complementary: *Ferrums*.
Antidoted by: *Natriums*.
Inimical: *Ferr*., *Mang*., *Natriums*.

Magnesium carbonicum

Carbonate of magnesium. $MgCO_3$. Trituration.

A. General

Mag-c., like *Kali-p*., is sensitive to environmental stress such as temperature shock, to an even greater degree. Puny, sickly looking plants which do not thrive on acidic soils or have been given unsuitable nutrients. Nitrogen given in seedling stage leads to collapse. There are vesicles on the roots, which are too dry under the epidermis. The plants are very thirsty and wilt more in the evening when the sun sets. The flowers have incomplete or no stamens, causing impaired or absent fruiting. Photosynthesis is impaired, protein content is low. The capillary system is engorged, its action impaired.
Mag-c. is inimical to *Nat-m*. and *Kaliums* and an excess of either causes magnesium deficiency or, conversely, causes a reduction in the uptake of sodium in the coastal areas where salt water bores cause problems with salination.

B. Magnesium deficiency

The symptoms of magnesium deficiency appear rapidly. (*Acon*. and *Bell*.) Yellowing of the leaves, marbling between the veins. These spots become necrotic. The appearance is similar to yellow dwarf virus symptoms. The oldest leaves are most affected, later also the younger leaves. The veins and the midrib remain green. The leaves fold backward as they die. At the back of the leaves the interveinal areas are pink.
Magnesium is needed in rather large quantities, like NPK. In this sense it is closer to being a macronutrient than a trace element. Deficiency shows as yellowing of the leaf tips and margins, leaving a dark-green tongue at the leaf base. Chlorosis increases and leaf scorch sets in on the margin. Older leaves are most affected. This problem is prominent in apples: Lady Williams, Yates, Red and Golden Delicious, Jonathan and Abas.

C. Clinical

Wilting, temperature shock, frost shock (Fig. 14, 15). Chlorosis, dirty yellow. Windburn, damping off.

Fig. 14 Snow, ice, frost, cold, winter injury, damage

Fig. 15 Snow, ice, frost, cold, winter injury, damage

D. Liming

This may also cause *Mag*. deficiencies, especially when it is excessive. Delbet considers *Mag*. to be important in germination. *Mag*. is abundant in the seeds of plants while the corm contains more than the straw.

E. Appearance

Virus infections

These can severely affect plant nutrition levels. Nitrogen, phosphorus, magnesium and zinc concentrations usually increase while potassium levels decrease.

Magnesium can be positioned between the potassium and calcium compounds, and is strongly influenced by these elements. When it forms

compounds with potassium, it adapts its mode of action to this element. When it forms compounds with calcium, it behaves accordingly. Leeser considers *Mag*. to be of physiological significance most strongly in plants. In organic form it is found in the chlorophyll. It plays a role in the assimilation of CO_2 in the oxidation of the carbon compounds. It is inimical to sodium and potassium.

F. Relationship

Compare: *Acon*., *Am-m*., *Bell*., *Ferr-m*., *Kali-m*., *Nat-m*.
Antidoted by: *Mang*.
Inimical: *Calc*., *Kali-c*., *Kali-m*., *Kali-p*., *Kali-s*., *Nat-c*., *Nat-m*., *Phos*.
Complementary: *Calc*., *Kaliums*, *Nit-ac*., *Phos*., *Zinc*.

Magnesium muriaticum

Chloride of magnesium. $MgCl_2$. Trituration and solution.

A. General

Mag-m. has many features in common with *Nat-m*. and sea water. It has a very bitter taste. The roots of the plant appear swollen and are dry under the epidermis. The plant needs frequent watering. Photosynthesis is impaired, and leaves, besides being chlorotic, may show signs of rust.
The flowers may not develop fully or have distorted stamens, whilst fruit setting is greatly impaired.

B. Clinical

Salination problems due to salt water bores. Puny, rickety plants, severe and extensive chlorosis.

C. Relationship

Compare: *Nat-m*., *Kali-m*.
Inimical: *Calc*., *Kali-m*., *Natriums*, *Phos*.
Antidoted by: *Mang*.
Complementary: *Calc*., *Kalium* salts.

Magnesium phosphoricum

Phosphate of magnesium. $Mg_3(PO_4)_2$. Trituration. Solution.

A. General

Mag-p., according to Schuessler and by analogy in plants, is contained in the sap, the structural tissues and chlorophyll. Disturbance in the molecular structure results in paralysis of the capillaries. Because excess potassium will lock it into the soil, a lack of *Mag-p*. will result in disturbances of

metabolism, evaporation, and photosynthesis. It has a strong family resemblance to *Mag-c*. and *Mag-m*. The plants suffer most in cold, rainy weather, from waterlogging. Cankers of the roots, with cracked epidermis. The plant seems to wilt, or cannot hold itself upright. Vitality is greatly impaired.

From research it has become evident that phosphorus cannot be taken up without magnesium, nor can it be properly distributed. Without it, no living entity can live properly: they appear “clapped out”. In field tests, magnesium deficiencies were shown to be due to excess phosphorus.

B. Deficiency

The relationship between magnesium and phosphorus is a subject that has been overlooked by many soil and plant scientists. It is surmised that because magnesium is present in chlorophyll there cannot be a problem. It forms the second most abundant element in animals, and is maybe the fifth major nutrient in plants. Andre Voisin and Dr. William Albrecht (quoted by Hylton, 1974) have repeatedly warned that magnesium deficiencies would cause severe health problems in humans, animals and plants. For more than 25 years, their warnings have been ignored. In the late 70s the USDA acknowledged the importance of magnesium in agriculture. (Fig.16)

Fig. 16 Magnesium deficiency, damage

Without magnesium, phosphorus cannot be properly distributed in the cell nuclei, nor transported to other parts of the plant. A phosphorus deficiency cannot be rectified by any amount of phosphorus applied without magnesium. Thus, if the phosphorus content is to be increased, so must the magnesium. At the same time, excess phosphorus will render copper, potassium and zinc deficient.

C. Clinical
Chlorosis, yellowing, bronzing and shedding of the leaves.
D. Appearance
Leaves yellow, bronze and redden and consequently are shed. This creates a fertile environment for mites, providing conditions in which they thrive.
All symptoms are worse in cold winds and draughts of cold air, and rain. The plants thrive in heat, warm winds, and dry weather.
The roots may show bacterial canker, with cracked epidermis. The cankers look red and raw. They do not readily take up water, although the plant is very thirsty. The capillaries may be paralysed; nutrients, sugars, starches and proteins are not transported to their correct places.
Following the yellow, bronze or red discolouration, the leaves drop easily and the plant withers and dies. Photosynthesis is impaired due to lack of *Mag-p*. All metabolic functions are impaired due to the inability to distribute phosphorus where it is needed.
E. Relationship
Compare: *Cupr*., *Kaliums, Phos*., *Zinc*.
Complementary: *Phos*., *Ph-ac*., *Calc*., *Kaliums*.
Antidote to: *Phos*.
Inimical: *Phos*., *Cupr*., *Kaliums*, *Zinc*., *Calc*., *Nat-m*.
Antidoted by: *Mang*.

Magnesium sulphuricum
Sulphate of magnesia. Epsom salts. $MgSO_4$. Trituration.
A. General
Mag-s. has more prostration than any other *Mag*. preparation. Lodging of grains is commonly met by *Mag-s*. Contrary to *Mag-p*., the plant is excessively thirsty and the evaporation rate is very high. As described in the other *Mag*. preparations, its relationship to phosphorus is very important. The sulphur content is responsible for the chlorosis and lodging, as lack of sulphur causes these symptoms. Thus both the sulphur and magnesium components are significant here.
The roots are very dry with a rough epidermis. The high water need, with immediate evaporation, corresponds to diabetes in humans and the lack of sugars in the plant is a leading indication. Respiration is impaired, as well as photosynthesis. Consequently, all sugars stored in the roots will be used up,

causing weakness and lodging, which shows in the yellowing of the young leaves. The plant is susceptible to net blotch and other blotches, and has a wilted appearance.

B. Clinical

Chlorosis of young leaves followed in later stages by total yellowing. Lodging, wilting, withering. Net blotch. Blotches in general. Mildews. Damping off.

C. Relationship

Compare: *Phos.*, *Sulph*.
Complementary: *Calc*., *Kali*., *Phos*., *Ph-ac*.
Inimical: *Calc*., *Kali*., *Nat-m*., *Phos*.
Antidoted by: *Mang*.

Manganum

Acetate of manganese. *Manganum aceticum*. $Mn(C_2H_3O_2)_2$ solution.

Carbonate of manganese. *Manganum carbonicum*. $MnCO_3$. Trituration.

A. General

Manganese is a cofactor in many plant reactions. It is essential for chloroplast production.

Manganese was isolated in the year in which Priestly discovered oxygen. Hahnemann introduced it into the materia medica and made provings with the acetate and carbonate. The symptoms of the two will be discussed together. Manganese has a remarkable affinity for and in some respects resemblance to iron, with which it is frequently found. It has a similar capillary collapse to *Ferr*., and *Calc-f*., with which it should be compared. Manganese is an oxygen carrier in plants. Plants cannot stand upright, wilting often and soon. The roots are congested and look pale. Many blotches and blights on the leaves as well as moulds and mildews. The plant requires little water. The flowers are affected in pollination with little or no pollen and incomplete fruit setting. Photosynthesis is impaired, and there is capillary congestion and collapse, with weak stems that break or bend too easily.

B. Deficiency

Manganese occurs in the alliums, the *Cruciferae/Cucurbitaceae*, as well as the *Solanaceae*. *Nat-c*., which is the form of sodium carbonate used as a water softener (not the cooking ingredient bicarbonate of soda), is worthy of comparison. Highly alkaline soils show more deficiency. Both *Nat-c*., and

Calc. must be studied in this connection. Because of a reduction in chlorophyll, the photosynthetic capacity is impaired. The chlorosis begins pale green and can turn orange-red. Symptoms can appear both on the youngest and the oldest leaves depending on the plant species.
Cabbage: general mottled yellow leaves.
Beetroot: triangular leaves. This is known as speckled yellows.
Onions and sweetcorn have yellow stripes.
On acid soils, liming can cause manganese deficiencies. The sulphate of lime is used in its crude form (Ca SO4). Foliar spray can be used with much lower rates to be effective. Manganese is therefore best administered as a spray. It is best to spray the plants when still young, although equally good results can still be obtained halfway through to maturity.

C. Toxicity

Manganese toxicity can be reduced by an application of *Sil*. The conclusion is that Sil. is the antidote to *Mang*. It is also antidoted by *Kali*. If manganese is deficient, it increases susceptibility to take-all. Potassium excess can be inimical to manganese thus increasing the susceptibility to take-all.
External manifestations of manganese deficiencies show as a gradual paling and faint yellowing between the veins. The yellowing is most prominent on older leaves. The interveinal areas finally become very yellow whilst the veins remain a dark green (when younger leaves are affected, see *Zinc*.). The leaf shape remains normal. The colour is usually pale green (*Zinc*. turns yellow). Shaded leaves more affected. Worse on loamy soils.
It occurs in all fruit-growing districts. *Mang-s*. is usually used in a crude dose (500 g/100 l) to counteract this problem.

D. Clinical

Chlorosis. Pale striping in barley, moulds, mildews, e.g. Monilinia brown rot (Fig. 17), tan spot, blotches and blights, wilting. Soil pH neutral or alkaline.

Fig. 17 Brown rot, *Monilinia fructicola*

E. Relationship

Compare: *Kali-ma*.
Complementary: *Ferr*.
Inimical: *Calc*., *Kali*., *Phos*.
Antidoted by: *Calc*., *Sil*., *Kali*.
Antidote to: *Ferr*., *Mag*.

Molybdenium

Molybdenum the element. Mo. Trituration.

A. General

Soil acidity reduces the availability of molybdenum. Take particular care with acid soils liable to molybdenum deficiency. Ensure that there is an adequate molybdenum supply if you are applying acidifying fertilisers such as ammonium sulphate.

The soils usually contain more than adequate potassium, sulphur, copper and molybdenum for crops and pastures, with inadequate phosphorus and zinc levels being the only problems related to nutrient element deficiency when the soils were newly cleared.

Loam and clay soils, other than those mentioned in some zones, do not generally require copper, zinc or molybdenum, although isolated deficiencies of zinc have been reported. 60 g of molybdenum is contained in 150 g of sodium molybdate, or in 112 g of molybdenum trioxide. Nutrients have different mobility in the soil, and as seasonal moisture conditions vary, so too does the distribution of nutrients derived from applied fertilisers. Soils differ in their nutrient holding capacity, both generally and for specific plant

nutrients.

Natrium carbonicum

Sodium carbonate. Washing soda. Na_2CO_3. Trituration. Solution.

A. General

Nat-c. is the typical salt of the *Natrum* group. An excess of alkali burns off the superficial layers of the epidermis leaving the leaves dry and cracked. The roots are dry, sometimes mottled or ulcerated. The plant is excessively thirsty, whilst photosynthesis is impaired due to excess water stored in the plant.

The flowers come too early, resulting in sterility in cereals, and failure to form fruits in fruit-producing plants. The plant is weak and cannot remain upright as in eye spot. The spots and blotches are blackish while the leaves dry out. Also tan spot and halo spot can be treated with this remedy. As these diseases have been described elsewhere, they are not mentioned again here.

B. Clinical

Sterility. Chronic effects of sunstroke. Windburn. Blotch. Weak straggly plants. Eye spot.

C. Flowers and fruits

Flowers appear prematurely. Sterility in cereals. Failure to form fruits.

D. Water needs

Excessive.

E. Relationship

Compare: *Kalium* preparations.

Inimical: *Kali*.

Antidoted by: *Phos*.

Natrium muriaticum

Sodium chloride. Common salt. NaCl. Trituration and solution.

A. General

If *Nat-c*. is the typical sodium salt, as *Kali-c*. is of the potassium group, *Nat-m*. is the most important one.

> *The problems of Nat. mur. may be regarded in a sense as the pons asinorum of homeopathy. Those who can grasp, in a practical sense, the uses of this remedy will not meet with great difficulties elsewhere. Those who see nothing but common salt may conclude that they do not have the root of the matter in them.*

(Clarke)

It may be inconceivable to some that the attenuations of *Nat-m*. can act independently, whilst at the same time crude salt is applied in quantity, as is the case with many bores in the coastal regions. (Fig. 18)

Fig. 18 Damage caused by saltwater bores (seawater)

As with all tissue salts, excess is antidoted or otherwise modified and negative effects are counteracted in an almost miraculous manner. A large number of plants in the coastal regions are steadily poisoned with quantities of salt water. Without restricting the quotient given, *Nat-m*. 30X will antidote the effects of the substance in crude form. This has been repeatedly tested on turf in the coastal area of WA where saltwater bores are causing salination problems for bowling clubs. Good results have been obtained.

Schuessler adopted *Nat-m*. from homeopathy. Though arrived at by a different route, his indications are mostly identical to Hahnemann's.

> *Water, introduced to the plant through the roots, salty or not, enters through the epithelial cells by means of salt contained in these cells, for salt has the property of attracting water. Water is needed to moisten all tissues and cells. Every cell contains soda. The nascent chlorine which is split off the salt in the intracellular fluid combines with the soda. The sodium chloride arising from this combination attracts water. By this means the cell is enlarged and divides itself. Only in this way is growth through cell division possible. If there is no salt in the cells, then water remains in the intracellular fluid, and hydraemia results. The plant dries out, though it looks watery and bloated.*
>
> (Schuessler)

Common salt does not cure this problem since common cells can only receive salt in attenuated solutions. The salt is then redundant in the intracellular fluid, and produces epidermal problems such as scald, halo blight and stripe blight where the tissue is waterlogged. Disturbances in the distribution of salt in cells produce residues that become transparent like water on the leaves. These are the theories of Schuessler, altered by analogy to apply to plants. This theory is a useful means to string some characteristics of *Nat-m.* together, but it is by no means complete.

Nat-m. also corresponds to affections due to loss of fluids. *Nat-m.* and *Kali* are related and correspond in plant nutrition. *Kali-m.* can greatly reduce the effects of saltwater bores. These two remedies should be carefully compared. The nutrient functions in plants can be affected negatively when an imbalance between the two occurs in a plant. Either remedy can show excess or deficiency.

The type of irrigation and its frequency as well as the water quality have great influence on plant nutrient levels.

The capillary system is disturbed, resulting in chlorosis, which in turn affects photosynthesis and protein levels. Capillaries are congested and constricted. No matter how much NPK is given, the plants emaciate and become weak. Plants are very thirsty, especially after salt water from bores. Also it increases cadmium uptake.

B. Clinical

Halo blight on beans (*Pseudomonas phaseolicola)* (Fig. 19), scald, stripe blight, salination, salt water bores, chlorosis.

Fig. 19 Halo blight on common bean

C. Appearance

Thin, emaciated plants, despite repeated fertilisation. Flowers produce no pollen, or too early production of pollen. Salt damage due to saltwater bores. Salination problems. Black peach aphid (*Brachycaudus persicae*).

D. Flowers and fruits

The flowers produce no pollen and fruit setting is impaired. Pollen may also be too abundant and too early. Waterlogged areas on stems and leaves. Imperfect assimilation of nutrients.

E. Relationship

Compare: *Kali*.
Complementary: *Kali-m*.
Antidoted by: *Kali-m*., *Phos*.
Antidote to: *Nat-m*., most nutrients.
Inimical: *Kali*.

Natrium phosphoricum

Phosphate of soda. Na_2HPO_4.

A. General

Nat-p. is found in the sap, the cells of the cambium, and the intercellular fluids. Through the action of *Nat-p*., carbonic acid is formed. *Nat-p*. is able to bind itself to carbonic acid, receiving two parts of carbonic acid for each part of phosphoric acid. When it has thus bound the carbonic acid, it conveys it to the leaves. The oxygen taken up in photosynthesis liberates the carbonic acid, which is only loosely bound to the phosphoric acid. The carbonic acid is then exhaled and exchanged for oxygen which is absorbed by iron and manganese in the sap. During the day, this process is reversed. It is obvious that *Nat-p*. is the remedy par excellence for problems with photosynthesis. It can be used for rusts, and indeed in all cases where the leaves develop a golden yellow scab. It must be compared with *Aconitum*.
The normal antidote relationship is here totally suspended: *Phos*. has here the action of a complement. In this way, certain features of a remedy may be totally altered. What normally is a particular feature of a remedy can completely disappear. Although sharing some features of *Natrium* and *Phos*., this is a very different remedy to either, with its own particulars.

B. Clinical

Stripe rust (*Puccinia striiformis*), leaf rust (*Puccinia recondita*) (Fig. 20), photosynthesis problems, banana rust thrips.

Fig. 20 Rust, *Puccinia spp*.

C. Relationship

Compare: *Acon*., *Phos*., *Carb-ac*., *Ferr*., *Mang*.
Complementary: *Carb-ac*., *Ph-ac*.
Inimical: *Kali*.

Natrium sulphuricum

Sodium sulphate. Na_2SO_4. Trituration/solution.

A. General

Nat-s. was discovered by Glauber in 1658 and is known as Glauber's salt. Grauvogl describes it as matching a state in which there is extreme sensitiveness to damp, rain and waterlogging, or growth near bodies of standing water, such as dams or lakes.
The action of *Nat-s*. is contrary to that of the chloride. Both attract water, but for different reasons. *Nat-m*. takes up water destined to split up cells, necessary for growth. *Nat-s*. attracts the water formed during the retrogressive metamorphosis of cells and eliminates it from the system. It draws water from the superannuated serum cells, causing their destruction. *Nat-s*. stimulates the epithelial cells in the capillaries, thus eliminating superfluous water from the system. If the molecules of *Nat-s*. are disturbed,

the elimination of superfluous water is disturbed, and hydraemia is the result. *Nat-s.* is indicated in plants that are too rich in water, are always worse in damp conditions and get better when the weather is dry and warm.
The roots are dry whilst the plant is thirsty. They have a dirty grey-green or green-brown appearance from moulds. Through the yellowing of the leaves, there is impaired photosynthesis, with low protein content.
Drying out with waterlogging is a typical *Nat-s.* feature. Many rusts are favoured by this condition (see *Acon.*, *Bell.*). Some blotches require wet conditions for their development.

B. Clinical

Waterlogging, photosynthesis impaired. Destruction of leaf tissue, leaves turn yellow, stunted plants, chlorosis, ergot, rusts, aphids (Fig. 21), banana rust thrips.

Fig. 21 Apple aphid, *Aphis pomi*

C. Flowers and fruits

Flowers are affected, but no reports of crop loss or fruit failure have been recorded. In general, it can be said that with any disease caused by drying out of plants in moist conditions, particularly when the water is excessive, there can be great benefit from *Nat-s.*
As with all tissue salts, these remedies require very careful monitoring, absolutely minimum dose, and caution in prescription.

D. Relationship

Compare: *Acon.*, *Bell.*
Inimical: *Kali.*
Antidoted by: *Phos.*

Nitricum acidum

Nitric acid. Aqua fortis. Strong water. HNO_3. Solution.

A. General

When strong nitric acid comes into contact with the epidermis, it destroys the upper layers and turns them yellow, but as the protein coagulates, it forms a barrier against its own action. It regulates the excess uptake of phosphorus, as well as nitrogen. It is one of the chief antidotes to mercury: in soils where mercury poisoning is detected, plants can be safely grown, provided a dose of *Nit-ac*. is administered soon after planting, to prevent the uptake of mercury in the plant. *Nit-ac*. follows *Kali-c*. in photosynthesis problems, such as deficient chlorophyll. *Nit-ac*. acts on the roots, the flowers, especially the stamen, the bark, which fissures and cracks, and the leaves, creating problems in photosynthesis.

B. Clinical

Nitrogenous rich soils and plants. Phosphorus excess. Blotch, black point, mildew (Fig. 22), eye spot, purpling of stem and leaves.

Fig. 22 Powdery mildew, *Leveillula taurica*, damage

C. Appearance

Purpling of underside of leaves, pink/red. Yellowing of leaves (also in nitrogen deficiency). Tree bark cracks, (except on eucalypts, where bark sheds as a normal feature). Bark fissures.

Chlorosis

At the 2-4 leaf stage, chlorosis may appear. The midriffs turn pink, as well as the petioles. Later the stems turn purple or red. The older leaves turn yellow

to orange-red, with red veins. The leaves die and gradually the whole plant becomes affected. As a consequence there is a reduction in branching.
The roots have dark blotches or are green (except legumes). They usually have an offensive smell. They are swollen and have an ulcerated appearance.
The plant craves lime or alkaline substances.
The stem is either too rigid or too weak, and both are indications of excess nitrogen and phosphorus. The latter affects the flowers and stamens, which either pollinate too early or not at all. Fruiting is thus affected and crop loss may result. (see *Kali-n*.)

D. Relationship

Nitrogen fixation in beans and peas may be affected by a lack of molybdenum.
Complementary: *Moly*.
Follows: *Kali-c*.
Antidote to: *Moly*.

Phosphorus

The element phosphorus. P. Saturated solution in absolute alcohol.
Trituration of red amorphous phosphorus.

A. General

Phosphorus, (light bearer, morning star) was discovered in 1673 by Brandt, an alchemist of Hamburg, and, shortly afterwards, by Kunkil in Saxony.
Teste informs us that immediately afterwards, attempts were made to use it in medicine. Kunkil made it into his “Luminous Pills”.
Phosphorus has been called the “master key to agriculture”, because low crop production is more often due to a deficiency of this element than of any other nutrient. Deficiencies show up differently in different plants; in cereals, the leaves turn purplish, legumes become bluish green and stunted. Most plants, however, turn dark green with red or purple tints.

Waterlogging

This increases phosphorus availability in the soil. Also plant life affects the pH and the availability of nutrients. Plants can change the soil environment and its level of alkalinity or acidity. The occurrence of barley grass is correlated to the concentrations of organic calcium, transfer of nutrients and the presence of ammonium, available phosphorus, exchangeable cations and soluble salts.
High concentrations of phosphorus in the soil are also connected with

perennial ryegrass causing ryegrass toxicity in sheep. When potassium was increased, the ryegrass responded with an equal increase, while a low level of potassium reduced the occurrence of ryegrass in the paddock, and resulted in more growth of paspalum and browntop bent.

Sheep's sorrel, which is supposed to grow on acid soils, actually makes the soil more alkaline. It is an acid soil pioneer plant, which prepares the soil for plants which require a more alkaline soil.

Phosphorus sources

Phosphorus sources in agriculture consist of the following:

- Monocalcium phosphate
- Calcium phosphate
- Sodium phosphate

Phosphorus is also found in organophosphates which are used as pesticides. From the use of pesticides, it has been evident that the re-emergence of pests can be triggered by them, particularly aphids, as they like high phosphorus environments. Similarly, herbicides like 2,4D can make plants susceptible to pest and blight attack. This is because herbicides have a damaging effect on any plant.

Thus the whole edifice of chemical farming stands or falls on the premise that chemical fertilisers, pesticides and herbicides do not negatively affect the crop (Fig. 24). Yet residues of poisonous substances will be found on almost any type of food crop. In Australia the "allowable amount of residue" is stipulated by the "Clean Foods Act".

Fig. 24 Herbicide damage

Most chemical agricultural agents have a withholding period, to allow most of the poisons to run off before it is allowed on the market.

Organophosphates have a particular feature. They have a short half-life, which means that they break down relatively quickly. The resulting chemicals are more dangerous than the phosphate, but these break down faster still. In this way, the agrochemical companies are trying to forestall toxicity in the environment.

Homeopathic remedies, on the other hand, do not have these disadvantages: since the amounts used are so small, no residues are left that need breaking down. Homeopathic preparations do not work mechanistically, although mechanistic phenomena must result from their action. Rather, they work dynamically, whereby the mechanistic results are nothing but further proof of this dynamic action.

B. Excess

When phosphorus is in excess, the water balance in the plant is disturbed. The process described under *Nat-p*. becomes untenable, because the carbonic acid cannot keep up with the phosphoric acid which is bound to oxygen to form the acid. As oxygen is attracted to hydrogen, water is the result, and waterlogging takes place in the leaves, restricting photosynthesis and ultimately leading to total capillary system collapse.

The plant is very thirsty, sallow and bloated and wilts easily in dry spells. There are oedematous spots in leaves, as in halo blight and stripe blight. Despite the thirst, no nutrient is taken up, as the plant already has excess nutrients and suffers from ill-health as a consequence. The roots have shrivelled skins, feeling as though they are loose around the core of the root. Very dry; yellow with a brown core.
Flowers also appear prematurely where there is too much phosphorus.

C. Deficiency

Deficiency (Fig.23) can lead to problems with whitefly in the field and in potting mixes. In field tests mixed results were obtained, depending on the plant species and the potting mix used.

Fig. 23 Phosphorous deficiency damage

Phosphorus and iron interaction must always be considered when dealing with phosphorus imbalances. Phosphorus is an important element for enzyme binding in the Krebs cycle. A deficiency shows in discolouration of the leaves and stems to dark blue-green. Stunted growth, reduced quantity and quality of the seeds and fruits are the most observable symptoms. Increased senescence and abscission are marked.
Oedematous spots in leaves, as in halo blight and stripe blight.
Photosynthesis is impaired. Generally all diseases where the plants show watery cells and their concomitant problems.
Phos. is an excellent remedy for the effects of lead poisoning, seen so often on road verges both in the city and in the country.
Plants appear sallow and bloated. Flowers appear premature in excess phosphorus. *Phos*. given shortly before flowering causes increased flowering

and thus leads to greater yields.
Phos. profoundly affects the nutrition and function of every tissue, notably the hardest (cambium and bark) and the softest (flowers and fruits). It causes an increase in growth whilst continuous use later causes degeneration.
The plant is very thirsty and wilts easily in dry spells. As can be seen from *Nat-p*., it has a great affinity for photosynthesis and respiration. The leaves can be totally congested and capillary action paralysed, resulting in the collapse of the entire plant. When phosphorus is in excess, the process as depicted under *Nat-p*. becomes untenable, because the carbonic acid cannot keep up with the phosphoric acid which is bound to oxygen to form the acid. As oxygen is attracted to hydrogen, water is the result, and waterlogging takes place in the leaves, restricting photosynthesis and ultimately leading to total capillary system collapse.
The roots have shrivelled skins, feeling as though they are loose around the core of the root. Very dry; yellow with a brown core.
The plant is very thirsty, yet no nutrient is taken up, as the plant already has excess nutrients and suffers from ill-health as a consequence.

D. Clinical

Halo stripe, stripe blight, scald, impaired photosynthesis, necrosis, engorgement of the leaves, chlorosis with smaller leaves than usual with either excess or lack of phosphorus. Droopy appearance, weak plants, rusts, blotches, dry leaf problems, dry rots, soft rots.

E. Appearance

The diseases connected with *Phos*. are similar to *Nat-p*. and *Kali-p*. but more pronounced. Dry rots are similar to *Calc*., *Sil*., *Calc-f*. or *Lap-a*., soft rots, Armillaria root rots, collar rot citrus, bacterial soft rot, to name but a few examples.

Armillaria root rot (*Armillaria* spp)

Leaves may brown around edges, or they may yellow and fall. Wilting and dieback are common. Citrus may set a very healthy fruit crop in spring but collapse in the dry, hot summer.
The roots have a white sheath of fungal hyphae in or under the epidermis, which smells strongly of mushrooms. The woody part is either dry and powdery, or wet and jelly like. Long shoelace-like structures are typical and help spread from root to root and tree to tree.
The fungus is a weak parasite on native trees. It grows on old roots and

stumps, spreading from there. In fall when the weather is humid and the soil is moist, yellowish brown toadstools grow up from the rotted roots and appear on the soil surface. Plants affected: woody ornamentals (Fig. 25) and smaller plants like strawberries, and many fruit trees.

Fig. 25 Armillaria root rot

Bacterial soft rot (*Erwina carotovora*)

The bacteria that cause this affliction are very common in soil or on plants. They prefer succulent plants. In damp weather they cause the most trouble. Plants recovering from pest attack or other disease are also prone to soft rot. The rot is always soft, and smells fetid, with a slimy appearance.

Plants affected

Potatoes

The first symptoms are soft, depressed areas around lenticels. It is easy to distinguish from gangrene by the peculiar softness. Potatoes, and also carrots, are contaminated at harvest time and rot in storage.

Calla lilies

The disease starts below the ground. Water-soaked areas appear at the bottom of flower and leaf stalks, which rot and fall over.

Sweet corn

This has a similar picture; the stems just above the soil becomes water-soaked, dark brown and slimy, and then collapse.

Additional plants

Fleshy parts of succulent plants, roots, tubers, fleshy leaf bases, fruit buds and stems, crucifers, celery, lettuce, ornamentals, irises, dahlias.

Citrus collar rot - (*Phytophthora citrophtera*)

This disease is caused by fungus which inhabits the soil and is only active in

certain conditions. When the leaves go yellow and the tree looks unhealthy, it might have collar rot.
The first sign is gum oozing out of the bark near ground level. After some time, the bark may look wet. Still later, it becomes dry, brittle and split. If not treated, the rot will ringbark the tree. It grows only in damp conditions, when waterlogged or when vegetables or weeds have been allowed too close to the trunk. (Fig. 26)

Fig. 26 Phytophthora root and crown rots

Plants affected

This list begins with the most susceptible and ends with the most resistant: Eureka and Lisbon lemons, Washington navel grapefruit, Valencia rootstock and mandarins. Trifoliata, Citrauge, Troyer and Carrizo are completely resistant.

F. Flowers and fruits

The flowers are abundant and fruits are big with tough skins, but have a watery interior and little taste. In excess phosphorus, flowers come too early and fail to fully develop the stamen. Sterility is the result. Reproduction is fine if *Phos*. is given at the right time.

G. Relationship

Compare: *Ferr*.
Antidote to: Lead poisoning. *Natriums*.
Inimical: *Alum*., *Calc*., *Ferr*., *Mag*., *Mang*., *Zinc*.

Silicea

Pure flint. *Silicea terra*. Silex. Silicon dioxide. SiO_2. Trituration of pure precipitated silica.

A. General

Sil. is one of the key remedies in agricultural homeopathy, as our tests have so far confirmed.

Outside homeopathy, flint as a remedy for internal use is unknown, except in biodynamic agriculture. Hahnemann introduced it into medicine. Through his method of attenuating insoluble substances, its medicinal powers have been liberated and revealed. A large proportion of the earth's crust is composed of silica. Sea sand (*Silicea marina*) is mostly composed of it. Silica is taken up by plants and is deposited on the interior of the stems as well as forming the sheath or bark that holds the plant upright. "Want of grit" is the leading indication for *Sil*.

Sil. type plants grow in sandy soils and there one will find few problems. It is plants that do not belong in those soils which experience problems.

Silicic acid is a constituent of the cells of the connective tissue. The epidermis forms the protective sheath around the cambium where *Sil*. gives strength to the long molecules of the fibre. Excess silica will cripple bark in healthy trees causing death. The suppuration it can trigger is sufficient to destroy a plant or tree. Its indication in die-back has been confirmed in practice with remarkable results. A sapling with die-back, which had only one quarter of the bark left, which was loose and drying out, was given one dose of *Sil*. 6X and the next day, the bark was reattached to the cambium, and after one week, the top branches were growing new shoots and leaves.

Homeopathy has many other uses that can improve the quality of life or even of the products that we make. The idea is a lot less fanciful than it may first appear.

If one understands *Sil*. and its extensive range of action, one will not meet with many difficulties elsewhere. No other remedy has a deeper action on the life of plants, and no other remedy has so wide a spectrum. It is the true polychrest of agriculture, much more so than any other nutrient. Let us have a look at its incredible range.

1. Without *Sil*., no plant can stand upright. It acts on every cell and tissue of the whole plant, giving grit and strength, regulating all cellular processes including reproduction. Silicate minerals make up most of the earth's crust and upper mantle (the lithosphere) and there are millions of tons of silicic acid in lakes and seas, as well as in living organisms. In plants silicic acid forms the supportive substance. It is abundant in algae,

Equisetum and *Polygonum* spp. and the grasses (*Gramineae/Poaceae*.). In birds the ashes of the feathers have a particularly high content.

2. In plants it is not restricted to a supportive function only. As a hydrophile colloid, it has water retention properties, to the extent of multiples of its own weight. Plants growing on stony or arid soils are able to create considerable water reserves, due to this water retentive property. The increased absorption on silicate-rich soils in desert biomes, such as found extensively in Australia, proves its capacity to delay drying out.
3. One single dose is usually sufficient to help generate the seeds of perennials and biennials so that they can lead healthy lives right from the moment they are sown. Silicon is an element of the moon, that is, it has great formative powers. Silicon as a building block ranks with carbon in its importance to plant life and in the production of protective tissues. *Sil*. generally shows aggravation and sometimes amelioration at the full and new moon phases. This confirms its relationship to the moon.
4. Another feature of *Sil*. is its capacity to set up premature flowering. This opens up possibilities as a herbicide, as it prevents seed formation in annual weeds. Here it must be used twice in 2 days. To prevent weeds coming up, or causing problems in broad-acre, spray *Sil*. twice, or more in 10 days, to prevent seed forming, then sow the crop with the last application.

Steiner already warned fruit growers not to use *Sil*. twice, since then there would be no fruits. While this may be excellent for the eradication of weeds, it is also valuable for those who grow flowers as a crop, since it will increase the number of flowers grown.

Tests from cannabis growers in both Australia (SA and NT, where growing is legal for personal use) and Amsterdam, Holland (where in the entire country growing is legal for personal use) have proved that this is indeed the case. From these results we can extrapolate that other plants also should produce more flowers.

Hence chrysanthemum, tulips, roses and other flower-producing plants could give a larger harvest of flowers. If the 30-50% increase in the cannabis harvest is anything to go by, then it is well worth the further experimentation.

5. Another indication is as an aid to germination. Here it must be given only once at planting time. The plant will grow strong roots and firm shoots and leaves.

6. A further application is as a general tonic for weak plants that are puny and small.
7. Given after flowering, *Sil*. will help fruit setting. All these applications have been tested in the field whereby many of the features came as unanticipated reactions. They confirm the findings of Steiner and have given a few more indications. They went far beyond expectations and showed that *Silicea* ranks as one of the most important remedies for which tests have been conducted.
8. On sandy soils *Sil*. works wonders and in spite of a harsh environment (or perhaps thanks to such circumstances), *Sil*. can make plants thrive. It can be used in soils where all appears normal, yet puny plants persist, and on any plant at sowing time, or as protection against mildew and mould, weak cells, exhaustion, fruit setting, striking, transplanting, green manure provision, all bark diseases and die-back.

In short, like no other remedy, *Sil*. and *Sil*. preparations have an effect on every stage of a plant's life, and can be applied correspondingly; they have a profound action, with long duration, from one single application. *Sil*. is a soil remedy of the first order. It is the antidote to *Mang*. in manganese toxicity. In sandy soils it changes the ionisation of the particles from water repellent to water absorbent. The negative effects of sandy soils are counteracted, and plants immediately begin to thrive. It is from tests with this form of application that the idea of using it as a germination aid was conceived, and this was visibly demonstrated in the germination of grass.

From the materia medica we can learn some of the specific uses of *Sil*. It looks possible to attempt to combat desertification with less heartache and speculation with the help of *Sil*. and *Calc*., *Equis*. and *Polygonum*.

Hahnemann gave us the hint that the environment in which the patient lives must be given high priority. A desert is mainly sand, especially in Australia. The earlier statement of Hering, about the previous medicinal power with the strongest influence, alluded to the consequent treatment.

Sil. preparations must be used with caution because, just as *Sil*. can help green a desert, it can equally quickly create one, with devastating effects. *Sil*. is one of the great powers in nature, capable of destruction as well as healing, depending on the skill of the practitioner.

Sil. gave excellent results at Port Bouvard Bowling Club, where patches of bare ground were covered in turf in less than two weeks. 10x4m patches were

quickly covered with strong grass, which has little or no problem with the ever-present fairy ring spot (Fig. 27). We do not hesitate to use it when circumstances demand it.

Fig. 27 Fairy rings

To date, bowling greens are greener, dollar dead spot is cured, timber grass is taller and stronger, plants stay healthier and timber is harder and denser, thus more termite-free. Trees are less prone to die-back, die-back is cured, plants are resistant to pests and diseases and firmer, larger fruits are produced, all thanks to *Sil*.

B. Clinical

Die-back. Premature flowering, herbicide, germination aid, general tonic, transplant shock, soil remedy, weak straggly plants, puny growth, bark and sheath diseases, chlorosis, aphids, bud worm, citrus mite, dried fruit beetle, weeds.

C. Appearance

Chlorosis

Weak, stunted plants that fail to thrive. Failure to regrow after transplants, the plant is green but does not take. Slimy roots. Need for nutrients, but inability to assimilate. Brittle stems and twigs, breaking under strain. Weakness in the generative sphere; small puny flowers, little or no pollen, immature stamen,

fruits refuse to mature and fall before maturity. Hardness of leaves and bark, leather leaf, red spots, ulcerating wounds from pruning, storm or mechanical damage. Burrowing under bark galls, tree cancers.

D. Flowers and fruits

Weakness in generative sphere, immature flowers and fruits, no seed forming, bud worm.

E. Water needs

Need more nutrients than water.

Note

Sil. has many uses. However, the selection of *Sil*. must follow the criteria stated and it must be used with caution.

F. Relationship

Compare: *Lap-a*.
Antidote to: *Mang*.
Complementary: *Calc*.

Sulphur

Brimstone. S. Sublimated sulphur. Trituration of "flowers of sulphur". A saturated solution in absolute alcohol constitutes the mother tincture.

A. General

Sulphur is a chemical element, occurring in nature as a brittle crystalline solid, burning in the air with a blue flame, being oxidised to sulphur dioxide. The reputation of Sulphur as a remedy is perhaps as old as medicine itself. Hahnemann says:

> *As early as 2000 years ago Sulphur has been used as the most powerful specific agent against the itch.*
>
> (Hahnemann)

The domestic use of sulphur as a spring medicine is based on its antipsoric properties. It is this property of sulphur, to divert to the surface constitutional irritants, which renders it the chief of Hahnemann's antipsorics. It is a powerful antiseptic, in no way limited to psora. Cooper states that workers in sulphur mines, though in malarial districts, remain immune from intermittent fevers.

In plants the capillary system is disturbed so as to cause irregular distribution of circulation: congestion, inflammation – as in rusts – blotches and redness run through the remedy. Sluggish circulation. Defective assimilation, emaciation, thin straggly plants that get plenty of nutrients. Dried up plants

which are yellowish and flabby. Photosynthesis is greatly impaired and disturbed. Worse in the heat of summer, worse at night, periodicity of 12 hours.
A dose of sulphur in its crude form improves the qualities for milling and baking in wheat when given shortly before the harvest. Sulphur gets fixed by excess levels of nitrogen or ammonia. It is through the remedies with either ammonia or nitrogen in their composition that these effects can be antidoted. *Kali-n*. can only be used in this respect when there is also a potassium imbalance.
Sulph. is the chronic of *Acon*. in rusts and where *Acon*. fails to cure, *Sulph*. will rapidly cure.
Sulph. acts on all aspects of photosynthesis, from the leaves to the storage of protein.
It has an alternation between problems with photosynthesis and rust eruption. The plant is always worse after rain. Congestion of single parts: roots, stems, leaves or flowers.
In 1966 Wannamaker treated seedlings with dilutions of *Sulph*. from 12X to 20M, using controls. The weight and dimensions of the seedlings plus their contents of sodium, potassium, calcium and magnesium were affected in a significant fashion.
Sulphur does not give a response as a fertiliser component in plants, unless accompanied by phosphorus, calcium or sodium. (See *Calc-s*., *Nat-s*.) A sulphur deficiency is notable when the level of sulphur is lower than 300 ppm. Sulphur of deficient plants had levels of sulphate of 120 - 220 ppm. The amount of dry matter is the standard measurement in most tests, for either toxicity or deficiency. Sulphur deficiencies in the field can only be determined by reduced or limited growth.
Sulphur needs to be processed in the soil, as plants only take up the sulphate. Thus calcium sulphate or sodium sulphate are some of the forms in which it can be applied. Calcium sulphate on alkaline and acid soils can help the plants recover in a short time. In salt-affected areas, sodium sulphate will be indicated. In sandy soils little sulphate is available, due to both retention problems and difficulties with absorption. Leaching is the main problem on sandy soils, which can be reduced through the buildup of a generous organic content in the soil.

B. Sulphur deficiency

Visual symptoms of sulphur deficiency may vary widely, even between different subspecies within the same genus or species of plants. At the 2-4 leaf stage, there may be pinkish discolouration on the leaf midribs or parallel veins. This is usually browner on nitrogen-deficient plants and there is no discolouration on stems and cotyledons as in nitrogen deficiency. Sometimes the leaves curl inwards. Purpling then increases in the interveinal areas. The leaves that newly develop are narrower than normal. The flowers are pale. The purpling spreads to the stem, petioles and midribs. Sometimes the pink is deep coloured, especially the underside of the leaves. New leaves are poorly developed while older leaves turn orange before dying.
Sulphur-based herbicides such as sulfonylurea can reduce the uptake of copper.
Chlorosis and retardation of growth and maturity are the main symptoms in cereals. All cereal crops are highly susceptible to sulphur deficiency.

C. Clinical

Droopy plants, worse after rain. Capillary congestion. Plants emaciated, straggly, thin, weak. Ailments from raw, cutting winds. Worse from warmth, sun, rain, cold and damp weather. Root nematode, root gall, crown gall, spots, rust, blotch, blight, mildew, moulds, rots, both dry and slimy.

D. Appearance

The roots are dry or slimy, with blisters or vesicles. Epidermis comes off the roots as in root nematode, root gall, crown gall. Plants very thirsty. Great need for nutrients with impaired assimilation. Photosynthesis is impaired, lack of oxygen carriers and subsequent congestion of the leaves. Violent capillary congestion, fluids stagnate, sugars not produced, no nitrogen uptake from the atmosphere. Premature flowering, before season, defective pollination. Sterility, no fruit, seed or grains produced.
Sulph. is the greatest general remedy for eruptions. Rust, blotch, blight, mildew, moulds and stripe. Herbicide damage (Fig. 28). Rots, both dry and slimy.

Fig. 28 / 1-2 Herbicide, damage

Chlorosis

Chlorosis and retardation of growth and maturity are the main symptoms in cereals. Nitrogen is of importance as an inimical to sulphur The plant becomes entirely yellow while the stems redden. Nitrogen has similar symptoms but affects the older leaves first All cereal crops are highly susceptible to sulphur deficiency.

Sulphur is a constituent of amino acids. It is essential in the formation of proteins. Sulphur is partially mobile in plants, hence the symptoms are visible in both the young and the older leaves. Ailments from heavy metal poisoning, regardless of the metal: cobalt, lead, arsenic, zinc, cadmium. *Sulph*. is frequently needed where acute diseases do not clear up completely.

Leather leaf

Spots with buff centres surrounded by a diffuse red brown aura are characteristic. As the disease progresses, whole leaves may be covered. The leaves become stiff, rolled and have a leathery appearance. The disease is most severe in high rainfall areas such as the south east of South Australia and western districts of Victoria. Dry spells will curb the disease spread.

E. Relationship

Inimical to: *Cupr*., *Ammoniums*, *Moly*., *Nit-ac*.

Complementary: *Acon*.
Follows well: *Acon*.
Antidote to: *Calc.*, *Cob.*, *Cupr.*, *Cadm.*, *Plb.*, *Ars.*, *Merc*.
Antidoted by: *Zinc*.

Urea

Carbamide. The chief solid substance in the urine of mammals (white crystals). $CO(NH_2)_2$. Trituration or solution.

A. General

Urea has been used in agriculture as a fertiliser. Without it plants are chlorotic with concomitant photosynthesis problems and sluggish circulation in the capillary system resulting in engorgement and puffiness. Cooper mentions that a celebrated breeder of cattle and horses succeeded in getting his animals' skins into an astonishing condition of fineness by giving his animals a tablespoon of old human urine with each meal.
Urea can also be used as a weedkiller.

B. Clinical

Problems with photosynthesis, capillary system and leaves (chlorosis).

C. Relationship

Compare: *Ammoniums.*, *Nit-ac.*, *Kali-n.*
Antidote to: *Moly*.
Complementary: *Moly*.

Zincum metallicum

Elemental zinc. Zn. Trituration.

A. General

Zinc belongs to the magnesium group of metals. It has long been known in the arts. Together with copper it is used in the manufacture of brass. Zinc poisons the brain and nerves in humans and animals. In plants the tissues are worn out faster than they can be replaced. The so called Scrapie in sheep and Mad Cow disease are possibly due to zinc poisoning and can be treated successfully with zinc preparations.
Zinc is essentially a trace element. It is essential to the auxins in cell division and multiplication and in the breakdown of carboxyl compounds, which in excess are toxic to plants. The visible symptoms show as pale-green and yellow leaves. In severe cases they turn dark green. Older leaves are first affected and this may later extend to the younger leaves and shoots. The leaf

tip turns yellow and as the symptoms spread the tips may turn orange, then red, and finally grey and black. All stages of this colour change may be present in a single leaf.

B. Deficiency

In plants this causes a yellowing of leaves in the same direction as the veins, beginning close to the veins and spreading over the leaves. It is different from chlorosis due to lack of iron, in that the yellow is more of a tan colour, thus offering a way to differentiate between the two remedies. Zinc has a strong action on the generative sphere. In flowers, it causes premature pollination and consequent sterility and fewer fruits. The capillary system is engorged in the leaves; the veins stand out. The roots have vesicles, for example in potato scab, and root-knot nematodes. Plants are thirsty, leaves show chlorosis with impaired photosynthesis and capillary engorgement.

Some sulphur-based herbicides will result in a lowering of the uptake of zinc in the plant.

Zinc deficiency can cause reduced growth in the side shoots and so-called “little leaf” syndrome, with particularly small leaves. The shoots can have shortened internodals. At the shoot tips, rosettes form. The coming into leaf of the plants is delayed or fails completely. There is loss of leaves. Chlorosis between the veins with pointed, attenuated leaves. Shoots die off. Flowering is delayed or fails completely. Fruit drops late. No fruit setting.

Zinc deficiency can also result in stunting. Spot symptoms on the upper leaves, spreading into necrosis of the leaf.

Copper and zinc have been added to many fertilisers. The content of these trace elements should be checked when deciding on fertilisers to be used in potentially deficient areas.

C. Clinical

Potato scab, apple and citrus scab, powdery scab, rhizoctonia scab (Fig. 29), violet scab, turf and root nematodes.

Fig. 29 Rhizoctonia damping-off and rot, *Rhizoctonia solani*

D. Appearance

Oat glumes

These are darkened and leaves will twist from the tip down. Oats are more susceptible than wheat and barley. Less than 12ppm is considered deficient. 20ppm is seen as normal.

Wheat

The symptoms are more severe in cloudy weather and wet and cool soils. The signs start on the middle leaves and extend to the new growth. Along the midvein of fully emerged leaves a pale strip is visible, which later turns brown and becomes necrotic. Then the colour turns grey. Chlorosis is sometimes prominent. The leaves may look succulent, i.e. waterlogged. Yellow mottled areas may surround the necrotic patches. The plants then show drooped leaves. (Brennan 1986)

Common scab (*Streptomycin scabies*)

This disease, also known as potato scab, begins as small brown dots on the tubers. As the tuber grows, the dots increase in size and can cover most of the surface. Symptoms may vary from raised corky areas to deep pits. It is usually brought in by infected planting stock. The leaves are first to show signs, with green spots, a different colour from the normal leaf, 3 mm/0.1 inch across. Limestone and alkaline soils and in dry seasons. Zinc deficiency promotes it.

Plants affected: potatoes, turnip, beetroot.

Apple scab (*Venturia spp*.) (Fig. 30)

Fig. 30 Apple scab, *Venturia inaequalis*

This disease is also known as black spot. The initial infection begins with dark green velvety patches on the leaves and developing fruit. Later the leaf lesions become black and slightly raised. By harvest, fruit infection spots are brown and cracked with a grey/black halo. The spores are spread by rain splash. It develops in fallen leaves during winter. In spring, spores infect new growth through wind dispersion. In damp weather at around 15°C/60°F, wet leaves become infected. In some regions, infection time is broadcast so that spray programmes can be accurately timed. Also here zinc plays an important role in both toxicity and deficiency.

Plants affected: Granny Smith, Delicious, Jonathan, Gravenstein. Pear scab is similar but cannot cross-infect apples and vice versa.

Root-knot nematode (*Meloidogyne spp.)*

These nematodes seem to cause more problems in light soils and warm climates. They are 0.5 mm long and cannot be seen with the naked eye, due to thin transparent bodies. The males are in the soil, whilst the females are found in the roots. Eggs are deposited in the soil in a gelatinous mass or in the outer layers of the roots. Up to 2,000 eggs are produced by the female. After hatching, the larvae enter young roots near the tip.

Their saliva causes super large cells, as in cancer, so that the root becomes bumpy. The roots then branch, and the nematodes attack the tip so that a knot is formed. Potato tubers will become bumpy as in common scab. These tubers cannot feed the plant above ground which appears slow-growing, and stunted, wilting readily in hot weather. Leaves are paler green than normal. These nematodes spread through running water, tractor wheels, shoes, spades and ploughs and infested plants.

E. Relationship

Antidoted by: *Sulph*., *Zinc*.
Inimical: *Kali*., *Moly*.
Antidote to: *Ferr*., *Sulph*.
Compare: *Nematodes*, *Calen*., *Tanac*.

9. Companion Plants as Homeopathic Remedies

Allium cepa

Common red onion. Family: *Amaryllidaceae/Liliaceae*. Tincture of the onion, or of the whole fresh plant. Gathered from July to August.

A. General

The onion has been used since ancient times to combat pests in plants. Its use for this purpose goes back to Greek and Roman times. Present-day knowledge is restricted to what we have found in companion plant manuals and old herbals, picked up by some who have made a spray with the crude substance. These brews are often enhanced with garlic (*Allium sativa)*, eucalyptus oil or tea tree oil. As well as providing some protection, they often hamper or kill the predators.

Knock-out pesticides achieve similar ends and while the label "environmentally friendly" is attached to them, this can mean different things to different people. As we alluded to in the introduction, chasing the bug is a never-ending process, since the bugs are but symptoms of a much wider problem. Wrong spacing and excessively large plots of the same species are an invitation to pests and diseases. The latter often occur as a result of bare-soil cultivation where, due to absence of humus, bacteria and fungi in the soil lack their normal sources of nutrition and resort to attacking living plants. Pests are attracted to large plots of the same species, since the balance is severely distorted. Hence by fooling nature into believing there is not a monoculture but an evenly-spaced plot with several plant species, the insects will no longer be attracted to such a plot. If moreover a pheromone gives the impression that large numbers of enemies are present, in the form of predators, nature has been fooled completely.

Warning

Do not use on antagonistic plants such as beans and peas! Only known companion plants should be treated, as nothing is known about its effects on the other plants.

B. Clinical

Onion fly and carrot fly. Good companion to carrots. Rabbits, mice and rats. Weevils (Fig. 31), mites. Helps roses. Scales, aphids, thrips, mites.

Fig. 31 Vegetable weevil, *Listroderes costirostris obliquus*, adult

Hyssopus officinalis

Hyssop. *Lamiaceae/Labiatae*. Tincture of the whole plant.

A. General

Originally a native of the hilly regions of Italy.

Hyssop is a good companion plant for grape vines, increasing their yield. Steiner used a tea on bacterial diseases. In potency it should prove to have wide-ranging action, considering its variety of uses in its crude form. Hyssop and radish are incompatible. Blue hyssop is the best insect repellent, followed by pink and white. This information is found in companion plant manuals and the potencies should confirm it.

It is, on account of its herbal properties, also effective in respiratory ailments. By signature, it must do the same on plants and is therefore indicated in respiratory insufficiency. We see everywhere examples of the Law of Similars, which works in a quintessential way. Like produces like, like attracts like, like cures like, like imitates like and like neutralises like. Therefore, the Law of Similars is applicable in similar situations as much as it applies to diseases and birds. Processes that are similar also work in medicine for plants. The process of prey-predator relationships can be applied as remedies as easily as in remedy-disease relationships, because they are entirely similar.

B. Clinical

Bacterial rots, blights, cabbage butterfly trap, general insect repellent. Respiratory problems. Best action in viticulture.

Mentha viridis/piperita/sativa spp.

Spearmint (*Mentha viridis = Mentha spicata*). Peppermint (*Mentha piperita*) and other garden mints and their wild relatives. *Lamiaceae/Labiatae*.
Tincture of the whole plant.

A. General

Grows on banks of river and damp watery places. *Menth*. is to respiratory problems what *Arn*. is to injuries and *Acon*. to inflammations. Singers will hold their voice when given *Mentha* shortly before a performance. As the bulk of the symptoms falls within the respiratory sphere it may prove to be helpful in plants that suffer from acid rain (loss of leaves and needles; gradual death of whole forest). There are some concomitant spots, specks and blotches, while injuries cause rots.

The various species of mint have much in common and have been held in high medical esteem since ancient times. Cultivated mint is susceptible to disease itself.

Grieve's herbal mentions that it is liable to attacks of rust which in her time was "incurable".

From the homeopathic viewpoint, no disease is incurable, provided the proper remedy is selected. *Acon*. or *Bell*. can cure this disease. Although *Puccinia menthae*, the fungus responsible for rust in mint, develops inside the plant, *Acon*. and *Bell*. are taken up by the plant and can easily cure it. This contrasts with what happens when using conventional agricultural chemicals, which do not penetrate, but are contact sprays.

The various species of mint are effective in keeping pests off cabbage and other *Brassicaceae*. Another use for *Mentha* is to repel of flies, mice and rats. In this capacity *Mentha* is to be used as a diluted essence.

The *Labiatae* all have healing properties for plants and as a family do much good in the garden. A more universal remedy, combining the *Labiatae* into a single remedy for vegetables in general is highly desirable. Although mixtures of homeopathic remedies are not used, it is only so with complexes, as these are not made up of already potentised single substances.

With new preparations, mixing is done at the crude stage. Thus the whole plant of each species of *Labiatae* is mixed, out of which a mother tincture is made. From this tincture, potencies are prepared which deserve a separate proving.

This is because many potentised substances antidote each other, especially so in the same natural order, especially in the complexes, made up of already

potentised substances. When mixed at tincture stage, before the potency is made, it should prove to be a remedy in its own right, much like *Hep*., which is neither *Calc*., nor *Sulph*., although providing symptoms pertaining to both.

B. Clinical

General pest control on the *Brassicaceae*. Fleas on livestock. Mice and rats. Ants, aphids, flea beetles, mosquitoes, gnats, cabbage white butterfly, caterpillars (Fig. 32, 33).

Fig. 32 Cabbage white butterfly, *Pieris rapae*, larva

Fig. 33 Cabbage white, *Pieris rapae*, egg

Tropaeolum majus

Nasturtium. *Tropaeolaceae*. Tincture of the seeds/whole plant.

A. General

Nasturtium is a companion plant that has the proven ability to protect other species against different species of aphids, according to Hylton, Grieve and others. Thus a homeopathic dilution ought to be able to confer on plants a

type of immunity to aphid infestation.
From experiments with plants it was noted that aphid infestation was only slightly influenced by *Trop*. in the 3X potency. More provings need to be conducted to establish with certainty the effects of the remedy. Experiments carried out on fennel infested with black aphid have been conducted. Tests and provings on a larger variety of plants in different potencies are warranted.

B. Clinical

White aphids, squash bugs, whitefly in tomatoes. Nematodes (Fig. 34). Mealy bug (Fig. 35).

Fig. 34 Wheat seed-gall nematode, *Anguina tritici*

Fig. 35 Woolly apple aphids

Ocimum spp. minimum/basilicum

Basil. *Lamiaceae/Labiatae*. Tincture of the whole plant.

A. General

Basil, as a companion plant, protects tomatoes from both pests and diseases

… almost as if giving them a wrap-around shield …

(Hylton)

For those who grow tomatoes as a commercial crop, and who have little space, making companion planting impractical, homeopathic remedies can solve the problem.
Thus, bud worm, russet mite, whiteflies, tomato mite, red-legged earth mite and also the two-spotted mite can all be treated with *Oci-b*. Anthracnose (Fig. 36), bacterial canker, fusarium wilt, spotted wilt (Fig. 38), mosaic virus and blossom end rot can also be treated. It may not be suited to the treatment of other plants, because it is a companion plant to tomatoes.

Fig. 36 Anthracnose on tomato, caused by *Colletotrichum coccodes*, symptoms
Oci-b. is a constitutional remedy for tomatoes because of its special affinity. In companion plants, this phenomenon is frequently encountered, and can provide new insights into the relationships between the different remedies in the context of human treatment. From further study, much can be learned about the internal relationships between many different remedies that to date have not enjoyed such extensive scrutiny.
Other varieties of *Ocimum*, like *O. canum*, *O. gratissimum* and others are equally efficacious and may be substituted for *Ocimum minimum* in their native countries, such as India, Japan, Indonesia, Malaysia, Persia and Africa, or South America.
Basil will also improve the taste of the tomato crop.

B. Clinical

All pests and diseases of tomatoes. Bud worm, russet mite. Flies. Mosquitoes. Tomato mite. Red-legged earth mite. Two-spotted mite. (Fig. 37)

Fig. 37 Spider mites, infestation

Ricinus communis

Castor oil plant. Palma christi. *Euphorbiaceae*. Tincture or trituration of fresh seeds or fresh plant.

A. General

From Clarke's Materia Medica we learn that the leaves of this plant have an especially powerful effect on the breast and the generative sphere. From this fact one can deduce the action on the flowers and fruits on plants. As it is a good companion to grapevines, its action on grape flowers and fruits is borne out by the provings. As with all plant pest and disease remedies, analogy is the most often used means of determining its effects on plants. Subsequent provings usually – but by no means always – confirm the analogy.
Sometimes however it proves to have additional features not arrived at through analogy, but through either clinical experience or provings.
From the materia medica it has become clear that it acts as a vermifuge. However, it needs to be used with caution, as too high a dose can severely purge the animal and debilitate it to a great extent. Its action on nematodes is analogous.

B. Clinical

Pests in viticulture: vine mite, rust mite, grapevine moth, hawk moth, scale.
Pests in *Cucurbitaceae*. Worms.

Fig. 38/1 Capsicum affected by tomato spotted *Wilt virus, Tospovirus* (TSWV), symptoms

Fig. 38/2 Tomato spotted *Wilt virus,Tospovirus* (TSWV), symptoms


Fig. 38/3 Tomato spotted *Wilt virus,Tospovirus* (TSWV), symptoms

Salvia officinalis

Sage. *Lamiaceae/Labiatae*. Tincture of fresh leaves and blossom tips.

A. General

Salv. is another remedy from the order of *Labiatae* and is as effective as the other species. Because its range is limited to the *Cucurbitaceae* and *Brassicaceae*, we need to develop a remedy from the different species mixed together at the mother tincture stage, to produce a plant pest remedy of wide range, thus creating a plant pest polychrest.

Because many remedies antidote each other in the potencies, complex prescribing is folly. Yet before potentisation, these plants do not antidote in their crude form and as such can be made in a special tincture that comprises all pest remedies of this order.

To this end, equal parts of each plant in both weight and volume are put together to produce the mother tincture, from which the potencies are produced. Provings will be conducted with these potencies on all types of plants and a diverse range of pests and disease will receive clinical tests.

Muller and Haines (1964) of the University of California at Santa Barbara observed that the dew gathered from *Salvia* contains a germination inhibitor. In potency it can be used in weed control.

Do not apply on young plants.

B. Clinical

Cucurbitaceae and *Brassicaceae* pests, mites, moths, aphids, cabbage fly. Other crops of *Cucurbitaceae* such as melon, cucumber, squash etc. Carrot fly (Fig. 39). Weed control.

Fig. 39 Carrot (rust) fly, *Psila rosae* (=*Chamaepsila rosae*), larvae

C. Compare

Foen. in weed control.

Sambucus nigra

Elder. *Caprifoliaceae*. Tincture of fresh leaves and flowers.

A. General

Grows in hedges in moist places. The leaves of *Samb*. have an unpleasant odour when bruised, which is offensive to most insects, and a decoction of these leaves is sometimes used by gardeners to keep caterpillars from delicate plants. It was the favourite medicinal plant of Hippocrates. The active ingredient in its crude form is hydrocyanic acid.

Samb. was confirmed in the field after its description in the companion plant manuals.

If sheep with rot can get at the bark and young leaves, they will soon cure themselves. Millspaugh says that a decoction or ointment of flowers and leaves was applied to large wounds

> *… to prevent deleterious effects from flies.*
>
> (Millspaugh)

There is a relationship with *Valer*. and *Vib*. on account of an identical acid present in the plants. We will consequently include pathogenesis of *Valer*. and *Vib*.

Oedematous swellings, especially in twigs, stems and leaves. The capillaries do not give passage to sap, and waterlogging results in these places. The plant can take up carbon dioxide but cannot release oxygen. Evaporation is increased during the day, but ceases entirely at night.

B. Clinical

General insect repellent, particularly against caterpillars. Bud worm, army worm. Sawflies. Diamondback moth (Fig. 40). Web worm, cut worm. Potato moth. Cluster caterpillars. Spitfire. Fly strike and rot in sheep. Aphids.

Fig. 40 Diamondback or cabbage moth, *Plutella xylostella*, larva

C. Relationship

Compare: *Bomb-pr*., *Valer*., *Vib*.

Satureia hortensis

Savory. Summer savory. (Winter savory is *Satureia montana*.)
Lamiaceae/Labiatae. Tincture of the whole plant.

A. General

In terms of companion planting, it is regarded as less effective than basil. We have not been able to verify this, but as the process of potentisation brings out increased medicinal power, the homeopathic preparation does not have the disadvantage found in the companion plant. The recommendations of companion planting books, to go over the beans regularly, wiping off eggs and larvae of the Mexican bean beetle, are not necessary when using the potency, thus saving many person-hours of labour.
From tests it has proved to be equally effective for all pests and diseases in beans.

B. Clinical

Diseases and pests of beans. Mexican bean beetle (Fig. 41), blossom thrips, bean fly, pod borer, angular leaf spot, anthracnose, bacterial brown spot, halo blight, leaf roll, rust, wilt. General insect repellent.

Fig. 41 Mexican bean beetle, *Epilachna varivestis*, adult

C. Relationship

As a prophylactic *Sal-ac*. can be used.
Compare: *Nat-sal*. and/or *Sal-ac*.

10. Plant Pests

Introduction

We first have to define what a plant pest really is. A pest is an entity which, by its behaviour and lifestyle, is damaging to the food plants we grow. There are a range of insects, arachnids, rodents and other animals that could be called pests in this narrow definition of the word. Generally, in agriculture we consider every such creature that damages the crop a pest. In conventional agriculture, the aim is to eradicate the pest, without addressing the conditions that gave rise to it in the first place.

The first condition has to do with spacing. In nature, all plants grow in a manner that leaves sufficient space for other plants; even if plants grow closely together, there will be scope for the harmonious development of other types. Moreover, circumstances generally prevent large numbers of the same species crowding a particular spot or even a larger surface, except when conditions and circumstances demand or allow it. Hence variety is the spice of life for nature.

Humankind has the need and the tendency to grow just one crop in a relatively small space, to enable the largest return with the least possible effort. However, such an approach also has certain drawbacks, the first of which is that we do not seem to have any control over the conditions and circumstances influencing that crop. Secondly, since this is so, it is almost impossible to avoid the loss of at least part of the crop. While 5-10% is reasonable and acceptable – insects have to live too – we note, however, that a crop loss of 20-30% is the norm, regardless of the amounts of poison used to kill the supposed pests.

It is therefore imperative and self-evident that we need a different approach to the entire problem, since the conventional methods of control are largely ineffective, and they also poison our food and environment. The pests only develop resistance, creating the need to use ever-stronger poisons, in ever-increasing doses, which will only affect us and the environment in an increasingly negative manner.

In this book, we show the reader not only a different approach but an entire range of new remedies to control pests in the garden and as a commercial grower in the field.

We have seen fit to improve on the first edition by making two significant

and simultaneous improvements. The first is the grouping together of all the remedies used for one or several types of insect pests, making the finding of a remedy much simpler. By abandoning the alphabetical approach in favour of the grouping by problem, we have sought to make the book even more useful. You will also find a second division in the book: into natural orders of crops. This is based on the fact that certain orders and families attract particular types of pests.

The *Graminae* have little more than aphids and locusts to deal with, while the *Brassicaceae* are plagued by caterpillars, whitefly and aphids. Hence some remedies are useful only on certain plants and not on others. If a remedy is useful for more than one order of plants, it will be mentioned under that order, but referring back to the complete description. Hence a remedy that can be used on several food plants of different orders will be mentioned under each order.

The remedies are grouped in order of importance, which means that the most important remedy or remedies are mentioned first. Progressing through the remedies, they become less and less important, but this does not mean they should be seen as less valuable. The very last remedy mentioned may be the exact one that you need for your particular problem. Hence rank only means that this remedy is more useful because it can treat problems that are more commonly found.

Naturally, we have sought to expand on the number of remedies that can be used in this way. To achieve this, we have scoured the literature on the use of companion plants and expanded the research into the use of predators as possible remedies. We have also directed research towards the elementary substances, since they had not been tested extensively before the appearance of the first edition. The indications mentioned there are nearly all founded upon toxicity and deficiency reports.

Under the former we have included such remedies as *Allium*, *Phaseolus*, *Ocimum* and *Mentha piperita*. It is difficult for farmers to grow the companion plant together with the crop, since this poses problems at harvesting. To enable the same protection, these plants have been turned into remedies and used for that purpose. The latter we proposed in the first edition to provide a possible principle. We discovered this is indeed the case.

We have been interested mainly in those remedies that are promoted as live insects and arachnids to combat the pest in either the greenhouse or in the

field. This approach is called Integrated Pest Management or IPM for short. There are several drawbacks to IPM, which do not exist with the use of homeopathic remedies.

The first concerns the difficulties encountered in rearing these predators or parasites. Due to demands for constant climatological conditions during their generation, the times when the pest-controlling species is ready for use may not coincide with the appearance of a pest, since natural weather conditions may delay or speed up their development.

Moreover, the the excessive use of fertilisers like phosphorus and potassium may trigger pest population explosions if the pest-controller is not available.

The second problem is that predators and parasites behave differently during different stages of their life cycles. They may attack pests as larvae, but in some instars or in the adult phase they may have no action on pest populations. The pests, too, may vary in their vulnerability to specific enemies at different life stages. This limits the success rate and the time period in which they can operate.

The third is that they are often migratory in the adult stage, so that at each new infestation they have to be reintroduced.

Finally, prevention of infestation or reinfestation is not always possible with this method.

To be certain all stages are covered, we could make these remedies from all the different instars of the predator or parasite. However, experience with the remedy *Coccinella* suggests that a remedy made from any life cycle stage will act effectively; *Coccinella* is made from the adult beetle, yet gives all the protection necessary.

Fungal and bacterial organisms responsible for natural diseases of insect pests are also used in IPM to attack pest species. These are also promising for homeopathic application. *Bacillus thuringiensis*, described below, is an example of a microorganism obtained from an IPM firm and tested as a remedy in homeopathic form.

10.1 General Insect Remedies

General Remedies

A. Latrodectus spp. katipo/hasselti/mactans

Katipo spider (*Latrodectus katipo*), Australian redback spider (*Latrodectus hasselti)*, American black widow spider (*Latrodectus mactans*). Class: *Arachnida*. Order: *Araneae*. Family: *Theridiidae*. Tincture of the live spider. Trituration of the live spider.

General

The redback spider is a ferocious predator whose poison is even dangerous to man. Those bitten by this spider require direct help from a poison centre, since the poison decomposes the blood and causes its degeneration. Its poison is related to that of the papal cross spider, *Aranea diadema* and to the black widow spider. It resembles the black widow closest both in effect and in appearance.

The animal is reasonably sized and can be immediately recognised by the red spot on its back. When this predator is present in the garden, it is best to not disturb it, because it is not only aggressive, but its presence is beneficial.

As a remedy it is very useful against most pests, since the spider is a voracious hunter. Therefore, it is of almost universal use in the garden and at home, for a large variety of pests that plague food crops and our ornamental plants.

All three Latrodectus remedies used in homeopathy, including the lesser-known Katipo species native to New Zealand, are effective.

B. Porcellio and Oniscus spp.

Common slater. Woodlouse. Sow bug. *Porcellio scaber*. *Oniscus asellus*. *Oniscus armadillo*. Subphylum: *Crustacea*. Order: *Isopoda*. Trituration of the live creature.

General

Oniscus and *Porcellio*, along with *Armadillidium* roly-poly pill bugs, are related isopod species. Clarke describes the traditional reputation of *Oniscus* in epilepsy.

Adult woodlice are 9-15 mm/0.3-0.6 inch long, oval in shape and reasonably flat. They are found in grey, brown and pink varieties, depending on age. They feed on organic matter, chewing the stems and cotyledons of seedlings. They can be serious pests.

Excellent control was achieved for up to three months from a single dose of the freshly prepared 6X potency.

Clinical

Infestations of common slaters or woodlice. (*Porcellio scaber, Oniscus asellus* and similar spp.). Pill bugs, roly-polies (*Armadillidium vulgare* and similar spp.).

Compare

Compare: *Canth*.

C. Tarentula hispanica/cubensis

European wolf spider (*Lycosa tarantula = Tarentula hispanica*). Unknown Caribbean spider (*Tarentula cubensis*).

General

The term “tarantula” is now normally used to describe large, hairy spiders mainly from the *Theraphosidae* family. It was originally applied to a wolf spider found in southern Europe (hence the name “*hispanica*” and the name derived from the Italian town of Tarento). This was famous – or infamous – for a bite reputedly causing tarantism, which forced one to dance at the slightest sound of music.

For historical reasons, the spelling “*tarentula*” is found in homeopathic literature. The identity of the decomposed specimen used to prepare the remedy known simply as *Tarentula cubensis* (“Cuban tarentula”) is unknown.

The tarantula spider bite causes a wound that takes up to six weeks or even longer to heal and which causes an ulcer-like inflammation of the tissues that returns every year on the exact date of the initial bite.

This is an important observation that provides a possible signature for its use in plants. This is a useful indication, because it might be possible to apply it in such a dose as to avoid this recurrence in plants after pest infestations, thus providing a form of permanent protection against such pest attacks. However, because this has not been tested in the field, it is no hard and fast rule that must be followed, but merely an observation that deserves further study.

D. Theridion

South American widow spider. *Latrodectus curacaviensis = Theridion curassavicum* (“Theridion from Curaçao”). Class: *Arachnida*. Order: *Aranaeae*. Family: *Theridiidae*.

General

This spider has orange-red markings and is often found on orange trees from the Caribbean southwards. It is another useful remedy against plant pests. The spiders form an important class of remedies, because they are – like polychrests – effective against a broad range of pests. In the treatment of humans, the symptoms are generally rather similar, with differences in their modalities of time, severity, place and repetition. They also differ somewhat in terms of the mental symptoms.

Mind symptoms in plants

While such mental symptoms may at first appear not to have much significance in plants, we must not forget that many of our food plants and kitchen herbs and spices show extensive mental symptoms when processed as homeopathic remedies. Therefore, it is no exaggeration in declaring that such mentalities are also present in living plants. Indeed it is a logical conclusion.

The relationships between remedies have therefore a stronger and more important role when we consider them in relation to the plants we grow for food and as spices. After all, if these plants show such strong mental symptoms in their potentised form, it is logical to suppose that they also have this mentality as living entities. We may use the example of *Chamomilla,* to illustrate the point.

Cham. has a strong tendency to anger and irritability when used as a remedy. Hence the remedies that are its antidote in the materia medica will also have a strong action on the living plant. It is useful to conduct experiments to ascertain these effects on the plant and the remedy produced from such treated plants. The influence on the mentality of *Cham*. as an entity must be evident from its processing into a remedy – it can either increase irritability and anger or it may completely neutralise it.

Steiner used *Cham*. as a composting agent: it starts the composting process and helps it along when it stagnates. Composting is similar to digesting and it is significant that *Cham*. has a strong influence on colic in babies, colic being a digestive disturbance. Composting may thus be seen as a way in which nature organises its anger in a positive and constructive manner.

Any remedy that is the antidote, follow-up, complement, chronic state or inimical to *Cham*. must therefore have influence on its capacity to produce being potentised as a remedy.

From this example it is evident that such relational actions must exist in all plants we grow for food and use in the garden as remedies. While a remedial action always involves a change for the better and is thus positive, we can easily conceive of wrong use having a negative influence. It seems that interesting experiments can be conducted to either prove or disprove the ideas set out in these paragraphs. From experience and intuitive realisation, the likelihood that such experiments will confirm these notions is however greater than 50%, simply because consciousness lies at the foundation. Dead matter will always act in an expected and prescribed manner, simply because it lacks life and consciousness as its most important symptoms. Living entities do not always react in the expected manner, because of individuality, but since remedies act in fixed recognisable patterns, their symptoms can be used as guiding principles. As Hahnemann noted in the Organon:

> *Each life-impinging potence, each medicine, alters the tuning of the life force more or less and arouses a certain alteration of a person's condition for a longer or shorter time.*
>
> (Organon § 63)

This is because:

> *Every true medicine works at all times, under all circumstances, on every living (human) being, and arouses in him its peculiar symptoms. These symptoms will be distinctly conspicuous if the dose is large enough.*
>
> (Organon § 32)

Treatment of Crucifers (*Cruciferae/Brassicaceae*)

A. Mentha viridis/piperita and similar spp.

Spearmint (*Mentha viridis = Mentha spicata*). Peppermint (*Mentha piperita*) and other garden mints and their wild relatives. *Lamiaceae/Labiatae*. Tincture of the whole plant.

General (see also Chapter 9)

The various species of mint are effective in keeping pests off cabbage and other *Brassicaceae*. Another use for *Mentha* is the repelling of flies, mice and rats. In this capacity *Mentha* is to be used as a diluted essence.

Clinical

General pest control on the *Brassicaceae*. Fleas on livestock. Mice and rats.

Ants, aphids (Fig. 42), flea beetles, mosquitoes, gnats, cabbage butterfly (Fig. 43), caterpillar.

Fig. 43 Cabbage white, *Pieris rapae*, adult

B. Bacillus thuringiensis

A soil bacterium. *Bacillaceae*. Order: *Bacillales*. Family: *Bacillaceae*. Tincture of the commercial brew.

General

The introduction of the soil bacterium *Bacillus thuringiensis* (Bt) for pest control looked at first to be very promising. It appeared to kill serious pests, like caterpillars, beetles and fly larvae, while being non-toxic to humans, spiders and other predators. By transferring the genes and encoding these in crop plants, it was assumed that the plants themselves would be the insecticides.

Bt has a disadvantage that is all the more glaring, considering its limited period of usefulness. This is due to the dosage, which is aiming at a knock-out effect. While this may work the first few times, after a period the pest begins to develop resistance, simply because it must somehow perform its job – rebalancing the unnatural spacing caused by interfering humans.

Complete control can never be achieved, simply because in nature there is also no complete control. Each species of plant has to sacrifice 5% of its numbers to maintain the insect populations, which are necessary, once the balance is lost, for its restoration. Naturally each farmer must accept the fact that 5% of his crop will be lost to disease, damage from storms and insects or other influences.

Bt in potency has none of the disadvantages of its crude form, since it works at the subtle rather than the material level.
Minimum dose means the smallest possible amount. All effects produced in nature are always caused by the smallest possible expenditure of energy. Nature does not like waste, therefore the waste of material doses will create the opposite effects to what we want to achieve – sooner or later, depending on the sensitivity of the entities involved and the volatility of the product used. With volatility we mean here the severity of the effect produced.
Of course it is to be expected that insects will develop resistance, since the method used to get rid of them is the wrong method. Homeopathic remedies do not have the disadvantage that resistance develops, simply because they are aimed at the plant, not at the insect. If we were to seek to destroy the insects with our remedies, everyone who used them would soon find the same resistance problem rearing its ugly head. The advantage of the homeopathic approach is in the fact that the insect is interesting only as a symptom and never as something that needs to be removed by being killed.

Clinical

Caterpillars. Beetles, flies and fly larvae, such as whitefly, cabbage moth and cabbage fly, carrot fly. (Fig. 42, 43)

Fig. 42 Green apple aphid, *Aphis pomi*

C. Pyrethrum

A product of certain chrysanthemums, especially *Chrysanthemum (Tanacetum)* and *Chrysanthemum* (*Tanacetum*) *coccineum*. Family: *Compositae/Asteraceae*.
Tincture of the commercial brew, also known as pyrethrin.

General

Chrysanthemums generally have a natural resistance to pests, hence their popularity with flower growers. They have been used to protect crops from

insects and kill lice for centuries. Some organic gardeners make “teas” from the flowers to spray their plants with, making sure the dilution rate is sufficiently high that the insects do not develop resistance.
In an attempt at being “ecologically sound” the agribusinesses have tried what growers already knew – using plants to combat pests. They have isolated the two forms of pyrethrin and concentrated them in order to increase the strength of action. Related synthetic forms have also been developed. Although the idea of “natural” insecticides has appealed to producers and buyers, experience in the field has demonstrated that resistance rapidly develops. Again, we believe that the practice of massive dosing is the main factor responsible for this problem. Therefore we have potentised the pyrethrins and discovered that such build-up of resistance is either non-existent or, if it does occur, progresses so slowly that remedial measures can be taken before the treatment becomes completely ineffective.

D. Salvia officinalis

Sage. *Lamiaceae/Labiatae*. Tincture of fresh leaves and blossom tips.

General (see also Chapter 9)

Like mint, sage is another useful member of the *Labiatae/Lamiaceae* family. However, the range of *Salvia* is limited to the *Cucurbitaceae* and *Cruficerae/Brassicaceae* families.
Muller and Haines (1964) of the University of California, Santa Barbara observed that the dew gathered from *Salvia* contains a germination inhibitor. In potency it can be used in weed control.
Do not apply on young plants.

Clinical

Cucurbitaceae and *Brassicaceae* pests, mites, moths (Fig. 44), aphids, cabbage fly. Other crops of *Cucurbitaceae* such as melon, cucumber, squash etc. Carrot fly. Weed control.

Fig. 44 Codling moth, *Cydia pomonella*, adult

Compare

Foen. in weed control.

E. Hyssopus officinalis

Hyssop. *Lamiaceae/Labiatae*. Tincture of the whole plant.

General (see also Chapter 9)

Hyssop is the third of a trio of labiate remedies found to be effective in treating crucifer pests, along with its herbal relatives mint and sage. Its usefulness as a grapevine companion plant also indicates its versatility, though it is incompatible with radishes.

The homeopathic application of herbal remedies and the use of companion plants information on the remedy (in terms of bacterial diseases of gravevines, respiratory ailments and the relative performance of different-coloured varieties as insect repellents) is discussed in the chapter on companion plants.

Clinical

Bacterial rots, blights, cabbage butterfly trap (Fig. 45), general insect repellent. Respiratory problems. Best action in viticulture.

Fig. 45 Cabbage white, *Pieris rapae*, adult

Treatment of Cucurbits (*Cucurbitaceae*)

A. Thuja occidentalis

Yellow cedar. *Arbor vitae*. Tree of life. *Coniferae*. Tincture of fresh green twigs.

General

Grows upon the rocky banks of rivers, low swampy spots.

The volatile oil is used in the West Indies as a powerful insecticide.

Teste mentions in his materia medica that thuja wood does not decay. He also agrees with Hahnemann’s idea of signature, given that the

> *… resinous callosities of the stems and leaves of thuja might have seemed an indication that the plant is a specific for sycosis and warts.*
>
> (Teste)

According to Hahnemann, sycosis is the constitutional disease resulting from constitutional (i.e. hereditary) gonorrhoea. The characteristic manifestations are warts, either dry or soft, cancers and cauliflower-like excrescences.
From the provings it appears that Hahnemann was right and this is corroborated by Kent. Hering says that it acts on the fluids causing:

> *… dissolution of the fluids, which become acrid. It disturbs the digestion.*

In the vegetable sphere:

> *A surplus of producing life; nearly unlimited proliferation of pathological vegetations, condylomata, warts, sycotic excresences, spongy tumours. All morbid manifestations are excessive, but appear quietly, so that their beginning is scarcely known.*
>
> (Hering)

Through analogous diagnosis, this can easily be related to galls, either hard or soft, or even soft cancerous growth on trees. A good example is the fungus gall of wattles (*Uromycladeum* spp.).
Many borers can be treated with *Thuj*., as it is a remedy that can neutralise "animal poisons", such as vaccination and its negative effects in humans. Thus many insects that attack plants and trees will respond to this remedy, especially if disease is the result of pest attack, like barley yellow dwarf virus, mosaic virus and other viral and bacterial disease.
Extensive testing must be carried out to confirm this, although analogy is also here the leading feature for its indications. Giving *Thuj*. "internally" – i.e. watering the roots, so it can be taken up – produces more striking effects than spraying, as was found in some of the tests.

Clinical

Pests in general, mites, hawk moth, scale, blister mite, rust mite. Pests in *Cucurbitaceae*. Cancer in trees. Curly top on peach. Galls. Farcy and grease in horses. Fungus gall.

Here is a test report from India on control of tobacco mosaic virus (TMV) from the journal Homeopathica, September 2003 by B. P. Singh, G. Gupta and K. M. Srivastava.

Homeopathic drugs inhibit TMV

The control of plant virus diseases by homeopathic drugs has been tried by a number of workers in the past, and in view of the encouraging results obtained against tobacco mosaic and papaya mosaic viruses a few more drugs have been tried in the present investigation.

Arsenicum album, *Thyroidinum* and *Uranium nitricum* of 3X potency were raised to 7X potency and converted into a liquid base using distilled water. *Sulphur* 100C, *Carcinosinum* 1M, *Morgan* 30C, *Dolichos* 6C, *X-ray* 30C, *Influenzinum* 200C and *Vaccininum* 30C were raised to the next potency by adding 99 ml of distilled water to 1 ml of the drug.

Culture of tobacco mosaic virus was maintained on *Nicotiana tabacum* var. White Burley, but the experiments were carried out on *Nicotiana glutinosa*, a hypersensitive host of TMV. *Sulphur*, *Carcinosinum*, *Morgan*, *Dolichos*, *Thyroidinum*, *Arsenicum* and *Uranium nitricum* were sprayed on the plants after 15 minutes and 24 hours after virus inoculation while *Influenzinum*, *X-ray* and *Vaccininum* were sprayed twice (48 hours and 24 hours) before virus inoculation.

Inoculum of TMV was prepared by macerating young infected leaf tissue in a pestle and mortar with an equal amount of pH 7 phosphate buffer. The slurry was centrifuged at 5,000 rpm for 17 minutes and the supernatant thus obtained was used as inoculum. Inoculations were made by rubbing on leaves dusted with carborundum powder. Lesions were counted on the fourth day of virus inoculation and the percentage of inhibition was calculated by comparing with control plants.

Influenzinum, *Vaccininum* and *X-ray* when sprayed before virus inoculation on *N. glutinosa* plants did not provide any kind of protection. Instead, the number of lesions were greater in treated plants than in controls.

Out of seven drugs tried from the therapeutic point of view, *Arsenicum*, *Thyroidinum* and *Uranium nitricum* were found to be more effective in reducing the number of local lesions compared to *Morgan*. Sprays of *Dolichos*, *Sulphur* and *Carcinosinum*, however, had no marked effect in reducing the number of local lesions. (Table 1)

Table 1
Effect of post-inoculation sprays of some drugs on number of local lesions produced on N. glutinosa by tobacco mosaic virus.

Drugs	Potency	Percent reduction in number of lesions over control
Thyreoidinum	7X	45
Arsenicum	7X	44
Morgan	31C	21
Uranium nitricum	7X	46
Dolichos	7C	0
Sulphur	101C	0
Carcinosinum	1001C	0
Influenzinum	201C	↑
Vaccininum	31C	↑
X-ray	31C	↑

The search for inhibitors of plant virus multiplication has not been very successful in spite of continued efforts spanning several decades. Our investigations as well as previous records have yielded enough encouraging results to explore the use of homeopathic drugs for prevention and control of plant virus diseases.

It is obvious that a systematic approach towards control of viral maladies of the plants through homeopathic drugs might yield some reliable and concrete data. It would be worthwhile to work on two fronts:

(i) to prepare drugs from infected plant tissue in accordance with the theory of homeopathic nosodes, observing their prophylactic effects against plant viruses

(ii) to screen various available drugs on healthy plants for development of virus- like symptoms (proving) with a view to selecting the drugs for controlling different viral diseases. Such an approach might enable us to make headway in the future towards the control of plant viruses which are otherwise difficult to manage.

References

Abidi, S. M. H., Srivastava, K. M., Gupta, R. P., Singh, B. P. (1977): Effect of Some Medicinal Drugs on Distortion Ring Spot Virus of Papaya,

New Botanist, IV: 13-14.
Khurana, S. M. P. (1971): Effect of Homeopathic Drugs Against Plant Viruses, *Planta Medica*, 20: 142.
Verma, H. N., Verma, G. S., Verma, V. K., Ram Krishna and Srivastava, K. M. (1969): Homeopathic and Pharmacopoeial Drugs as Inhibitors of Tobacco Mosaic Virus. *Indian Phytopathology*, 12: 188.
This research was conducted at the Plant Virology Laboratory, National Botanical Research Institute, Lucknow, India, in 1979.

B. Bufo

The toad. *Bufo rana = Bufo bufo*. Class: *Amphibia*. Family: *Bufonidae*.
Tincture of the poisonous secretion of the skin in rectified spirit.

General

The use of this remedy is very ancient and goes back to Greek and Roman times. It was also mentioned in a book on pest control dating back to the 1700s. It recommends keeping a toad in a bucket with shallow water; when diluted further, this would provide a repellent even for voles, mice, rats and other rodent pests of the house and farm. On crops it was used against caterpillars and whitefly as well as aphids and scale. Of course, having a toad in the garden also helps to control insect pests, but the toad will be as indiscriminate as a pesticide and will also kill other useful predators. Naturally, the poisonous secretions of the toad can better be used in potency to protect plants against insect pests.

Clinical

Insect pests in general. Caterpillars, whitefly, aphids and scale. Possible a rodent repellent.

Appearance

Infestations of insects like aphid and whitefly, which after infection will become fluffy and white, soon turning to bright orange. It controls in regular biological control about 75% of the population. In the potency it controls 99%.

Water needs

Relatively high, because of insect infestation.

Relationship

Compare: *Bomb-pr*., *Samb*., *Mant-r*.
Complements: *Carc*., *Chrysop*., *Cocci-s*., *Staphycoc*.

Treatment of True Grasses (*Gramineae/Poaceae*)

Viburnum opulus

High cranberry bush. Cramp bark. Water elder. *Caprifoliaceae*. Tincture of fresh bark.

General

Grows on river banks.

In America, the wild species, says Hale, is called “cramp bark”. Native Americans used it in spasmodic diseases. Viburnum smells like *Valer*. or *Samb*. and has equal repellent qualities to these two. By analogy from Hale’s reports of its use to prevent miscarriage, it can prevent early dropping of grains or fruit if applied at the first sign of this problem.

When this problem occurs, the roots look pale and the epidermis may be dry. Nutrients may not be taken up, CO_2 is also defective and the plant is low in protein or starch. As with *Samb*. and *Valer*., *Vib*. has profuse evaporation. The leaves do not release CO_2 at night. Photosynthesis and respiration are not up to par. The whole digestive system is severely affected whilst the capillary system appears inactive. The female parts of the flowers are affected, resulting in early dropping of fruits. Timely application of *Vib*. will help fruits to mature and ripen before they fall.

Clinical

General insect repellent.

Water needs

Normal to higher need.

Relationship

Compare: *Bomb-pr*., *Samb*., *Valer*.

Treatment of Pulses (*Leguminosae/Fabaceae*)

Satureia hortensis

Summer savory. *Lamiaceae/Labiatae*. Tincture of the whole plant.

General (see also Chapter 9)

From tests it has proved to be equally effective for all pests and diseases in beans. (Fig. 46)

Fig. 46 Limabean vine borer, *Monoptilota pergratialis*

Clinical

Diseases and pests of beans. Mexican bean beetle, blossom thrips (Fig. 47), bean fly, pod borer. General insect repellent.

Fig. 47 Thrips (*Thysanoptera* order), damage

Relationship

As a prophylactic *Sal-ac*. can be used.

Compare: *Nat-sal*. and/or *Sal-ac*.

Treatment of Nightshades (*Solanaceae*)

Sambucus nigra

Elder. Family: *Caprifoliaceae/Adoxaceae*. Tincture of fresh leaves and flowers.

General (see also Chapter 9)

The leaves of *Samb*. have an unpleasant odour when bruised, which is offensive to most insects, and a decoction of these leaves is sometimes used by gardeners to keep caterpillars from delicate plants.

Samb. was confirmed in the field after its description in the companion plant manuals.

Clinical

General insect repellent (Fig. 48), particularly against caterpillars. Bud worm, army worm. Sawflies. Diamondback moth. Web worm, cut worm. Potato moth. Cluster caterpillars (Fig. 49). Spitfire. Fly strike and rot in sheep. Aphids.

Fig. 48 Spitfire grubs, *Perga* spp., larva

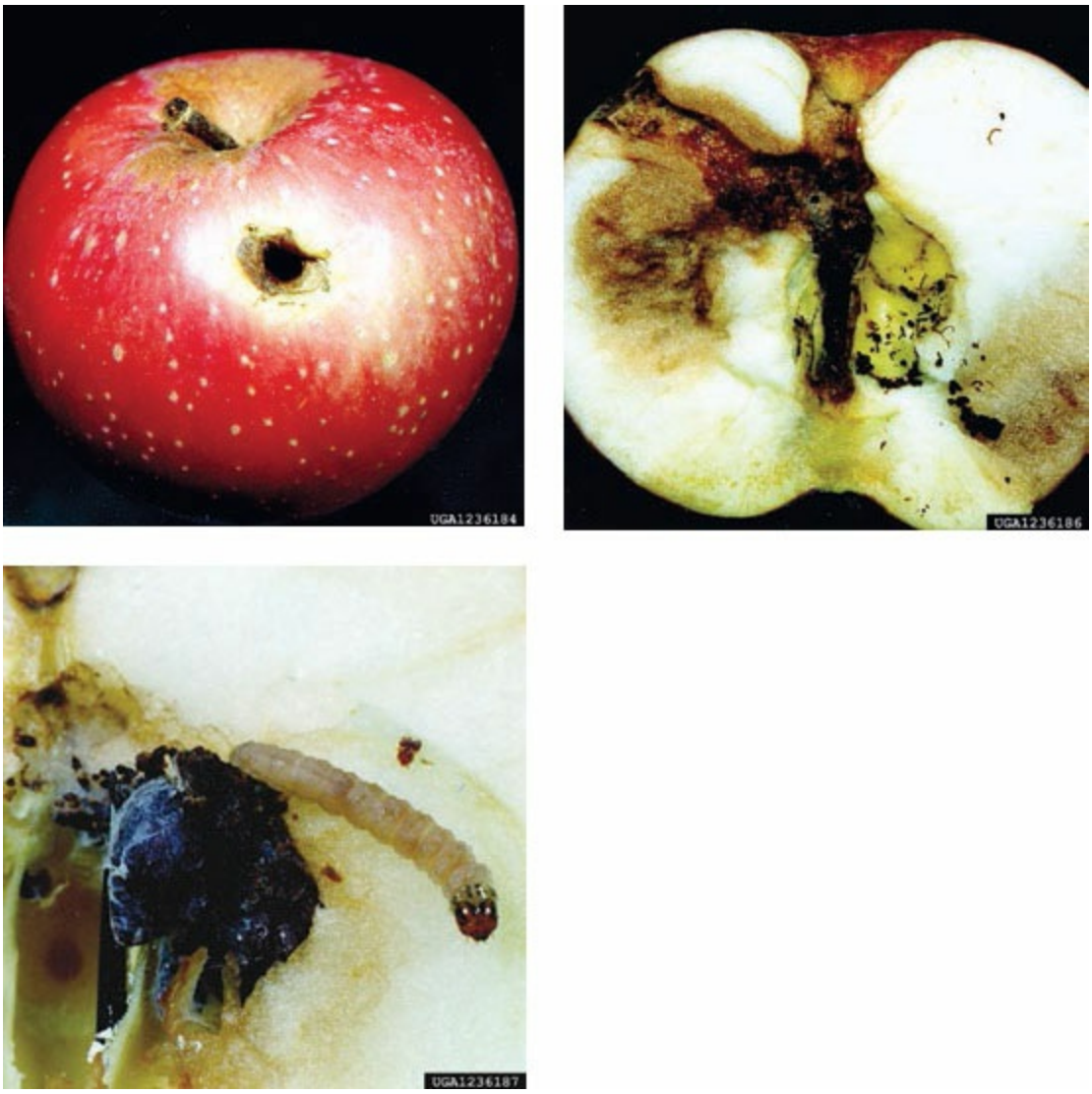

Fig. 49 Codling moth, *Cydia pomonella*, symptoms and larva

Relationship

Compare: *Bomb-pr*., *Valer*., *Vib*.

10.2 Remedies for Aphids and Scale Insects

These insect pests are 1-2 mm/0.04-0.08 inch long in general, although larger species also exist (4-5 mm/0.15-0.3 inch). Different species have different colours, green, blue, pink, deep yellow, lemon-coloured, grey, white or black. Some species have wings. Others have a winged and a wingless stage. When over-crowding occurs, they grow wings, flying to other plants or other parts of the same plant. Near the end of the body two tubes protrude, called cornicles, a feature particular to aphids. Aphids are viviparous, i.e. bearing live young, resulting in possible population explosions.

Aphids pierce and suck, drawing sap from plants, preferably young shoots and buds, the latter producing deformed flowers as a result. Some aphids form galls, attacking the root system as well. Others carry yellow dwarf virus. Aphids are protected by ants and produce honey dew for them.

Population size depends on temperature and nutrient levels. At 15°C (60°F) the females produce three young per day, which increases to six at 25°C (77°F) and with high potassium and/or phosphorus levels this can increase to ten. Hence population explosions occur mostly during warm to very warm weather, when humidity is around 40 to 50%.

Treatment of Crucifers (*Cruciferae/Brassicaceae*)

A. Aphidius spp.

A type of parasitic wasp. Order: *Hymenoptera*. Family: *Braconidae*. Sub-family: *Aphidiidae*. Genus: *Aphidius*. Tincture of the live insect.

General

> *All aphid parasites are Hymenoptera or wasps in the broad sense and belong to two families; the Aphidiidae, which are the most important and are all aphid parasites, and the Aphelinidae, which also parasitise other insects such as scale and whiteflies.*
>
> *The Aphidiidae include many important genera; Aphidius, Praon, Ephedrus, Lysiphlebus, Monoctus and Trioxys. The adults are small, slender wasps with black, brown, orange or yellow colouration.*
>
> (Hussey & Scopes)

While in nature the wasp oviposits the aphid and still takes a few days to hatch, the remedy will act immediately, gaining crucial time to prevent aphid

devastation. For the different instars of the parasitic wasp do not interfere with the development of the aphid. Only at the fourth instar does the predator become active enough to stop the aphid's development and life.
These drawbacks do not exist with the homeopathic potencies, which do not require breeding time, are not influenced by the life cycle of the pest or the weather conditions and are thus applicable at the time the infestation is acute. The immediate response is another feature with which the remedy shows superiority over even IPM.

Clinical

Aphid infestations of all types on nearly all types of plants. *Chrysopa* prefers *Brassicaceae*, but will take aphids from almost any plant. (Fig. 50)

Fig. 50 Russian wheat aphid, *Diuraphis noxia*, imported pest of small grains, infestation

B. Chrysopidae spp.

Chrysopae, *Chrysoperla* and similar species. Green lacewing. Gauzefly. Order: *Neuroptera*. Family: *Chrysopidae*. Trituration of the live adult fly. Tincture of the live insect. (Fig. 51)

Fig. 51 Green lacewing, *Chrysoperla carnea*, larva

General

Aphid infestations on the plant or crop. These lacewings subsist mainly on aphids. They are generally active at dawn and dusk. They can be recognised by their glass-like wings, which contain greenish or yellowish veins.

It can be given at the time of infestation or as a preventative measure, protecting the plant before such infestations occur. It gives protection during the entire life cycle of the plant in annuals and biennials.

While it is true that live insects can be cultivated to do the work, it is often difficult on account of the unpredictability of pest infestations. It is therefore also costly, since the insects may not be available at the moment of need or the breeder of predators does not sell any, since there are no infestations during its own life cycle. Moreover, the adult predator may migrate away from the aphids, even when there are plenty available.

The homeopathic solution presented is the best possible alternative, since neither the life cycle of the predator nor that of the pest continues to play any role in the eradication – the remedy is always available and works at all times, under all circumstances.

With commercially available poisons, control needs 5-6 treatments at intervals of 8-10 days during the entire summer. With the build-up of resistance, this has to be increased to 6-10 treatments at weekly intervals. The costs are astronomical. With IPM, three successive batches of cocoons have to be introduced at intervals of 5 days, at a ratio of 1 cocoon to 25 aphids. The parasite larvae are often incapable of controlling the aphid populations, since these can multiply by a factor of thirty every day in hot and dry

weather. This also requires additional parasites to achieve effective control and makes it rather expensive to use. While control is often very effective, provided the development of aphid and parasite are parallel, there is a risk that a change in weather will often cause population explosions requiring more parasites.
Homeopathic remedies can be applied at all times and prevent reinfestation, even when optimal conditions for it are present. IPM does not prevent reinfestation and will have to be applied again, thus raising the cost for the grower.

Clinical

Aphid infestations. Scale.

C. Syrphid larva

Syrphus and other spp. Hoverflies. Syrphid flies. Flower flies. Gliders. Order: *Diptera*. Family: *Syrphidae*. Tincture of the live insect larva. Trituration of the live insect larva (Fig. 52).

Fig. 52 Hoverfly, syrphid or flower fly, *Syrphidae family*, adult

General

Members of *Syrphus* and similar species have bright markings, often yellow and black, and resemble small wasps, but are not related to them. The carnivorous larvae of some species like aphids almost as much as *Coccinella* larvae do. When the soil is cultivated, the larvae, which survive underground, are promptly killed. During the insect season the use of the remedy is therefore indispensable if the crop is not to succumb to pests.

Clinical

Aphid infestations; also as prophylactic. (Fig. 53, 54)

Fig. 53 Green peach aphid, *Myzus persicae*

Fig. 54 Green peach aphid, *Myzus persicae*

Appearance

Aphid infestations. Plants covered in aphids. When *Syrphus* is sprayed or given directly to the plant, the aphids have either died by the next day or have fled.

Treatment of Cucurbits (*Cucurbitaceae*)

A. Coccinella septempunctata

Ladybird. Ladybug. Ladybeetle. Sunchafer. *Coccinella septempunctata* (seven-spotted species). Order: *Coleoptera*. Family: *Coccinellidae*.

General

Aphids attack grains, fruits, vegetables and flowers.

Coccinella either sprayed directly on the aphid or when given to the plant, rapidly reduce aphid populations.

Fig. 55 *Coccinella septempunctata*, adult

Coccinella has been used extensively with good results, usually requiring only a single dose. Overdosing will attract aphids to a plant, resulting in repeated aphid infestations.

Clinical

Aphids. Scale (Fig. 56). Whitefly (Fig. 57).

Fig. 56 San José or Putnam scale, *Diaspidiotus perniciosus*, adult, on almond


Fig. 57 Silverleaf whitefly, *Bemisia argentifolii*, adult

B. Coccus cacti

Cochineal. *Dactylopius coccus*. Order: *Hemiptera*. Family: *Dactylopiidae*. Trituration of the dried bodies of the female insect.

General

Coc-c., being a soft scale, is specific for treatment of soft scales, because it possesses similar properties. *Shellac* is an example of a remedy for hard scales, as it is a product of a hard scale species (*Kerria lacca*). *Coc-c*. has

been used on different species of scale living on different trees and shrubs. Eucalypt scale (wattle tick, soft brown scale), scale on citrus trees and scale on bottle brush disappeared after a single dose. As with *Cocci-s*., care must be taken not to repeat the remedy.

There are some twenty types of soft scale, all of which can be treated with this remedy. It is the remaining hard scale that must be treated with *Shellac*, approximately ten species. Thus each of these remedies is generic to a certain extent.

Clinical

All soft bodied scale. (Fig. 58, 59)

Fig. 58 San José or Putnam scale, *Diaspidiotus ancylus*, damage

Fig. 59 San José or Putnam scale, *Diaspidiotus ancylus*, infestation

Treatment of Nightshades (*Solanaceae*)

Tropaeolum majus

Nasturtium. *Tropaeolaceae*. Tincture of the seeds/whole plant.

General (see also Chapter 9)

Trop. is a companion plant that has the proven ability to protect other species against different species of aphids, according to Hylton, Grieve and others. Thus a homeopathic dilution ought to be able to confer on plants a type of immunity to aphid infestation.

Clinical

White aphids, squash bugs, whitefly in tomatoes. Nematodes. Mealy bug (Fig. 60).

Fig. 60 Papaya mealybug, *Paracoccus marginatus*, infestation

10.3 Remedies for Beetles

Treatment of Nightshades (*Solanaceae*)

Cantharis

Spanish fly. Cantharides. *Lytta vesicatoria*. (The historical name *Cantharis* is no longer current, since *Cantharis* is a different but related genus.) Order: *Coleoptera*. Family: *Meloidae* (blister beetles). Trituration of live insect.

General

Canth. helps with burns and fire damage to plants. *Epicauta rufidorsum* also belongs to the blister beetle family. If they appear in large numbers, they can strip plants bare. Using Hahnemann's Law of Similars, we might suppose that *Canth*. could help here.

Clinical

Sunburn (see Fig. 61), blisters on leaves and petals. Fertiliser burns, water droplet burns, after bush fires, windburn, sunburn. Bronze orange bug, rust on *Chrysanthemum* and *Pelargonium*. *Epicauta rufidorsum* blister beetles, on potatoes (Fig. 62).

Fig. 61 Sunscald, damage

Fig. 62 Black blister beetle, *Epicauta pensylvanica* (also *pennsylvanica*), adult

Water needs

High. Plant very thirsty. To replace sap lost in fires *(Carb-v.*).

Relationship

Compare: *Bomb-pr*., *Carb-v*.

10.4 Remedies for Whitefly and Flies

General Remedies

Encarsia formosa

A small parasitic wasp. Order: *Hymenopterae*. Family: *Aphelinidae*. Tincture of the live wasp.

Clinical

Greenhouse whitefly (*Trialeurodes vaporariorum*). Silverleaf whitefly (*Bemisia argentifolii*) (Fig. 63). Cabbage whitefly (*Aleyrodes proletella*) and carrot whitefly.

Fig. 63 Silverleaf whitefly, *Bemisia argentifolii*, adult

The greenhouse whitefly (*Trialeurodes vaporariorum*) is known to be a serious pest on over 250 plant species. Among the hosts we may count cucumber and other *Cucurbitaceae*; capsicum, tomato and other *Solanaceae*; and many ornamentals, such as *Azalea*, *Calceolaria*, *Fuchsia, Pelargonium*, *Poinsetta* and *Verbena*.

The life cycle of this insect consists of four main stages: egg, larva, pupa and adult. There are four larval instars (stages between moults). The length of the cycle varies significantly depending on temperature and the type of host species. It can range from 18 to 28 days in total.

The eggs hatch after eight days at a temperature of 21-24°C (70-75°F). When the temperature is lower, the eggs take longer or simply don’t hatch till the temperature is right. A full cycle typically features an 8-day egg incubation,

then four larval instars lasting 6, 2, 3 and 4 days respectively, followed by a 5-day “pupal” stage before the adult hatches.
The newly hatched larvae, called crawlers, are the first instar and initially mobile. They move for a few hours only and then settle. After inserting their mouthparts into the leaf tissue, they lose their functional legs and remain static throughout their further development. During the later instars, the flattened larvae become thicker and the red eyes of the nymph become visible. The so-called pupal stage (not true pupation) is followed by emergence of the adult insect.
Bemisia species can be distinguished from *Trialeurodes vaporariorum* by careful comparison of the various life cycle stages.

10.5 Remedies for Caterpillars

Treatment of Crucifers (*Cruciferae/Brassicaceae*)

Bombyx processiona

Procession caterpillar. Oak processionary moth. *Thaumetopoea processionea*. Order: *Lepidoptera*. Tincture of the live caterpillars.

General

The caterpillars live in colonies at the base of the tree during the day and feed on the foliage at night. After denuding the tree, they walk in a single file - a procession - to the next, hence their name. They produce two generations per year.

Clarke mentions that:

> *… in one case a boy shook a large number of caterpillars from a tree on his bare chest. It caused an itching so severe, that he had to run for assistance. Then fever, somnolency, delirium and finally death ensued.*
>
> (Clarke)

Rodale's periodical relates the case of a commercial peanut and soybean farmer (1976). He prepared a crude product from vegetable loopers. Control was very successful. Another report from 1978 mentioned sawfly larvae being used in a similar fashion.

Bombyx in potency has been used to treat most caterpillars on most crops as a generic remedy. Both as a spray and in the trickle system it is effective. In both cases the plants become immune to caterpillar infestations.

Clinical

Caterpillars, vegetable loopers, sawfly larvae (Fig. 64), army worms, cabbage moths and other caterpillars.

Fig. 64 Sawfly

Relationship

Compare: *Canth*., *Samb*., *Valer*., *Vib*.

Treatment of Pulses (*Leguminosae/Fabaceae*)

Camphora

Camphor. Gum obtained from *Laurus camphora = Cinnamonium camphora. Lauraceae*. Solution in rectified spirit.

General

Camphor is a white crystalline substance, with the chemical formula $C_{10}H_{16}O$. It is found in a range of plants and can also be manufactured synthetically. The homeopathic remedy is prepared from gum of the *C. camphora* tree which grows in South-East Asia and Australia. It is found either in longitudinal cavities in the heart of the tree or extracted from the leaves and twigs. There are also significant quantities in rosemary and African blue basil.

Grieve's herbal mentions that:

> *It is a well known preventive against moths and other insects, such as worms in wood; natural history cabinets are often made of it, the wood of the tree being occasionally imported to make cabinets for entomologists.*
>
> (Grieve)

As *Camph*. is a powerful remedy, it should be used with caution, because of the severe reactions it produces. It is often prescribed in the lower potencies,

> *… but those whose knowledge of Camphor is confined to its coarser*

action will never understand what a great remedy it is when used according to its fine symptomatic indications and given in the higher potencies.

(Clarke)

Because of its wide range of symptoms and the overlapping of primary and secondary reactions in humans, it is difficult to use there. In plants it produces enough symptoms to warrant its use in lodging, especially if caused by waterlogging, as *Camph*. is indicated for diseases arising from cold and damp weather.

The roots feel slimy, the slime being viscid, something not found on healthy roots. The plant is excessively thirsty.

The capillary system does not work properly, thus interfering with the transport of sugars to the roots and the uptake of nutrients into the plant. Respiration and photosynthesis are consequently defective and the plant slowly withers and collapses.

Clinical

Moths, wood worms, white ants and other pests. Lodging, negative effects of waterlogging. Cockroaches, ants. (Fig. 65)

Fig. 65 Fire ant, *Solenopsis geminata*, damage

Termites

Termites (Fig. 66) belong in the same order as cockroaches (*Blattaria*) and not in that of the ants, as their common name, the white ant, would suggest. They live in colonies which have a king as well as a queen, unlike all other colony dwellers such as ants and bees. The population is composed of workers, soldiers and other castes. The soldiers have large heads and strong

jaws particularly to defend against ant attack. Some confront the invaders, while others scurry deep into the nest to defend the inner levels, especially in the subterranean species.

Fig. 66 Termites

Most species are 4-10 mm/0.15-0.4 inch long, white or cream-coloured and soft-bodied. Depending on the species, the nest is constructed either underground, in trees or in mounds. Most species attack either living or dead wood, which is the reason why many wooden houses or the stumps on which they are built are a target for the termites.

Some species feed on fungi, which they grow in underground tunnels, while still others feed on turf, field crops and other vegetation, chewing the roots. In spring they may swarm; males and females on the wing emerge in massive numbers from the nest, like ants. These mates drop their wings and set up a new nest as a royal couple. From the eggs the workers emerge, and these build a new nest. In two to three years the egg production speeds up with more egg-laying females. Some queens become too large to move and only lay eggs; some species manage up to 4,000 eggs in 24 hours.

In Australia they may attack a large range of trees, mainly eucalpyts, along with some others. The reduction of native forests has brought them to human dwellings. *Camph*. is a good remedy against the termite. In its crude form it has been of service for hundreds of years. The camphor tree, *Cinnamomum camphora*, with its strong smell due to camphor, will remain free of termites. It is clearly not only the smell that makes *Camph*. an excellent remedy against the termite. In the potencies it works just as well, while in such fine dilutions there is apparently little or no question of any smell. On the other

hand, pheromones can be much subtler than our noses can smell. When we consider that dogs can smell 100,000 times better than us, it is quite conceivable that insects have still finer senses.
Camphor is believed to act as an insect repellent, and termites are perhaps sensitive to its action. It causes prostration and debility in humans, which would certainly also be an unwanted phenomenon in a termite nest. There is constant work to do with the eggs, the larvae and the food reserves, as well as many other tasks. A sleepy and debilitated state can be the death of the nest. *Camph*. has been used with good results on timber stock against termites. *Camph*. is also effective against moths.

10.6 Remedies for Nematodes and other Worms

Treatment of Roses (*Rosaceae*)

Tanacetum vulgare

Tansy. Family: *Compositae/Asteraceae*. Tincture of whole flowering plant.

General

Grows on rough ground and pastures.

Tanacetum oil contains toxic ingredients such as thujone and camphor that explain its camphorous odour, its historical uses and associated hazards, including abortion, convulsions and death. It was a traditional vermifuge to kill and expel worms in humans, cattle and sheep.

Clarke cites the symptom similarity with rabies and its prophylactic use by a French homeopath, Peyraud.

Herbals such as Grieve (1931) and Hylton (1974) and modern researchers suggest that tansy repels flies, Japanese beetles, ants and other insects.

In potency it is taken up by the plant and so confers immunity against some pests. Especially useful to keep ants away from plants infested with aphids, as ladybug larvae cannot feed as easily on aphids protected by ants.

Clinical

Flies, worms of any type, Japanese beetles, ants, moths, fleas. Convulsions. Rabies (according to Peyraud, cited in Clarke). Nematodes (Fig. 67, 68). Peach is most affected by *Tanac*. Premature fruit drop.

Fig. 67 Wheat seed-gall nematode, *Anguina tritici*

Fig. 68 Foliar nematode, *Subanguina chilensis*, foliage

Treatment of Mints (*Labiatae/Lamiaceae*)

Teucrium marum

Cat thyme. *Marum verum*. *Labiatae/Lamiaceae*. Tincture of whole fresh plant.

General

There is no better remedy for cases of nematodes than *Teucr*. Nematodes inhibit plant growth and impede respiration, especially the root-knot nematode (*Meloidogyne* spp.). In potato tubers the whole of the tuber becomes lumpy. Other remedies like *Calen*. can also be used for nematode control.

From the symptoms listed in the materia medica, inferences can be drawn with regard to nutrient levels – the symptoms of both nematodes and *Teucr*. are identical.

In companion planting, the species of *Teucr*. are not as effective as *Ruta*, but in potency they do confer immunity to pests on plants. All species of thyme have this capacity, as do the *Thymus* varieties.

Various herbals (Grieve, 1931; Hylton, 1974) mention the active properties of cat thyme and it also features in companion planting books for roses (Hemphill, 1990; Philbrick and Gregg, 1966).

Many tests must still be conducted to establish the full range of *Teucr*. preparations.

Clinical

Thread worm. Cabbage root fly. Moths. Nematodes. Mastitis in cows. Flowering and fruit- setting problems.

Relationship

Compare: *Mentha*

10.7 Remedies for Mites

Treatment of Crucifers (*Cruceiferae/Brassicaceae*)

A. Amblyseius spp. cucumeris/californicus/mackenzie

Predatory mite. Class: *Arachnida*, Subclass: *Acari* (mites and ticks). Tincture of the live mite. Trituration of the live mite.

General

Evidently, we have sought to expand the range of remedies to combat pests. We were naturally curious to see if there were other possibilities of using predators, as already seen from the first edition of this book, where *Cocci-s.* was the first remedy made from a predator. By carefully studying the literature on the use of Integrated Pest Management, we reasoned there would be many possible remedies against pests. Many of the remedies presented here have been inspired by this literature. Additionally, we obtained the necessary insects from companies that rear them to produce these remedies and tested them in the field. They performed beyond expectations and are presented here as remedies of the first order in the protection of plants against pests.

Mites pose a problem for the grower in that they infest plants, where they weave a fine webbing around the branches and leaves, shutting them off from oxygen and carbon dioxide, effectively strangling and suffocating the plant. They migrate by attaching themselves to other insects, which transport them to a new location. Many scientists maintain that they are parasites of the insect on which they are found, but this is an incorrect notion. *Trombidium* is one such example. Predatory mites which feed on pest mite species also migrate as adults, which makes it difficult to determine how many predator mites are needed at what stage for pest control. They also swarm and migrate in the same manner, making it equally difficult to determine the numbers of predator mites for an infestation of red-legged earth mites or any of the other varieties of mite. The numbers may fluctuate due to the arrival of more mites or the departure of mites in search of newer hunting grounds.

Used in remedy form, no such considerations need to bother the grower, since it is always available and a single dose is enough to protect the plant or crop for the duration of its annual or biennial existence. Homeopathy has so many advantages over any other method that there is actually no comparison. The diverse species of *Amblyseius* are equally effective. Each of the

subspecies can be used for the control of mites in the crop, regardless of whether these crops are grown outside or in the greenhouse.

Clinical

Mites. Red-legged earth mite, spider mite (Fig. 69), russet mite, rust mite, blister mite, two-spotted mite.

Fig. 69 Spider mites, damage

B. Bovista

Warted puffball. *Lycoperdon bovista*. Kingdom: *Fungi*. Trituration of the fresh fungus.

General

> *This globular fungus, which, according to report, is eaten in Italy before it is ripe, becomes filled, while ripening, with a blackish dust that breaks the husk which contains it, with a slight noise.*
>
> (Clarke)

The signature points to bloatedness, puffiness and enlargement. Ovarian problems in flowers. Moist and dry rots in many plants. Root rots with putrid smell. Plants are thirsty, especially in the afternoon and evening.

Bov. was tried for fairyring spot on turf, which proved to be a failure. In the process its action on the spider mite was a welcome and happy result. Naturally, it was quite a surprise and it has puzzled me no end to discover what it was in the puffball that stopped the mites. Careful investigation of the latest developments in pest control gave me a clue.

In IPM the use of fungi to combat pests has provided us with a range of remedies that will be effective against several pests. *Bov*. belongs in the natural kingdom order of *Fungi* and its action on the spider mite and other

mites is probably due to a similar mechanism to the fungi used in IPM. It remains to be confirmed or refuted by microscopic evidence.
The spider mite can just be seen by the naked eye, mainly because of its contrasting colour. The females are present in greater numbers. They are harder to spot because they are pale green. In winter the females turn orange red, but hide under the bark, in the junction of branches or at the base of the plants. In spring they feed on the young shoots or seedlings, turn green again and move back up the plant.
Bean debris harbours those that overwinter. In hot, dry weather they do the most damage. Heavy rain reduces their numbers. The damage is visible as chlorosis, drying out and becoming brittle. Leaves turn grey.

Clinical

Spider mite and other mites (Fig. 70). Ovarian problems, such as deformation, capillary relaxation. Moist and dry rots. Moulds.

Fig. 70 Spider mites, infestation

C. Ricinus communis

Castor oil plant. *Palma christi*. *Euphorbiaceae*. Tincture or trituration of fresh seeds or fresh plant.

General (see also Chapter 9)

This widespread plant, found throughout the tropics and subtropics, is probably an African native. It is effective as a companion plant for grapevines, helping to combat pests that attack the vines.

Clinical

Pests in viticulture: vine mite, rust mite, grapevine moth, hawk moth, scale (Fig. 71). Pests in *Cucurbitaceae*. Worms.

Fig. 71 European fruit lecanium scale insect, *Parthenolecanium corni*, infestation on blueberry

D. Trombidium muscae domesticae

Red velvet mite. Class *Arachnida*. Subclass: *Acari* (mites and ticks). Family *Trombidiidae*. Tincture of the live mite.

Carriers: housefly, stable fly, blow fly and other insects.

General

J. H. Clarke mentions this remedy in his *Dictionary of Practical Materia Medica*, where he gives the following description of the tiny creature (an arachnid rather than an insect) proved under Hering's supervision:

> *Trombidium is a parasite found singly or in groups upon the common house-fly, of a bright red colour, nearly circular in shape. The alcoholic tincture, a brilliant orange in colour, was prepared from specimens, about 115 in number, collected in Frankfort, Philadelphia in September, 1864.*
>
> (Clarke, J.H.)

The exact *Trombidium* species used for the proving is unknown; the name *muscae domesticae* is not a scientific name, but simply means "of the housefly". The common name of red velvet mite is often used for members of this genus.

Although Clarke, along with many other writers, including those with entomological knowledge, describes this type of mite as parasitical, other researchers believe many mite species are simply hitch-hikers and do not

make other demands on their ride.
Other types of mite may also attach themselves to larger hosts including flies, for example:

The Tarsonemus mite, which swarms by attaching itself to the fly.

(Hussey)

A *Tarsonemus* mite breeds in compost and manure and feeds on mycelium of different species of fungi found in manures mixed with straw. It also attacks the mycelium of developing spores of edible mushrooms and is a serious pest among mushroom growers worldwide.
Another common agricultural pest is the red spider mite (*Tetranychus* spp.).
The grand keynote of *Trom*. is worse from nutrients and watering. Any plant suffering from a pest or disease that gets worse from the application of fertiliser or water will improve under *Trom*. Blotches and patches, more prevalent on hairy leaves.
Roots may have mould and poor assimilation of nutrients. The capillaries seem congested. Leaves, especially in hairy species, may show spots. Respiration, photosynthesis, and evaporation are all disturbed. From extensive tests by the USDA, it has been observed that plants with excess potassium and phosphorus are more prone to aphid and mite attack, while pest numbers increase more rapidly on overfed plants.

Relationship

Compare: *Bov*.

10.8 Remedies for Snails and Slugs

Fig. 72 Every gardener’s worst nightmare

Snails and slugs are members of the class *Gastropoda* within the *Mollusca* phylum. The gastropods are one of the most diverse groups of animals in form, behaviour and habitat, and second only to insects in terms of the number of species. They live in the deep oceans, shallow coastal seas, and in fresh water, and are the only molluscs to have colonied the land. They range from microscopic types to large specimens such as the giant African land snail *Achatina fulica*, which grows to about 20 cm in length and can weigh up to 700 grams.

Gastropods which have lost their shell, or have only a very reduced or internal shell, are usually referred to as slugs, being otherwise indistinguishable from snails. This adaptation, which allows the creature to squeeze into tight spaces and increases manoeuvrability, has occurred independently among many different lineages, so that the various slug families are often not closely related to one another. When attacked, slugs contract to become harder and more compact.

Fig. 73 Achatina fulica

The soft bodies of snails and especially slugs are prone to dessication, so they hide in damp places such as under rocks, logs and plant pots during drier conditions. Some types hibernate underground during winter in temperate zones, while in others, adults die off in autumn. Thin mucus on the skin makes them slippery and unpleasant-tasting, as well as helping reduce moisture loss, while thicker mucus secreted from the underside increases grip and lubrication, protects the muscular foot from damage and sends chemical messages to other individuals.

Their bodies appear bilaterally symmetrical externally, like their bivalve counterparts, but they have asymmetrical internal features and shells. They can retract their upper light-sensing tentacles and lower smell-sensing feelers. Most garden types are simultaneous hermaphrodites, each individual having both male and female sexual organs. Although they are capable of producing both sperm and ova, self-fertilisation is rare. Reproductive behaviour depends on the relative size of the animals. Creatures of similar size in a mating pair can simultaneously transfer gametes to each other (bilateral mating). Where the two differ in size, one-way transfer of sperm occurs from the smaller male, with the larger individual acting as a female.

Although aquatic and terrestrial snails are sometimes farmed as a protein source, slugs and snails mainly impact on agriculture and horticulture as a major pest, leaving tell-tale silvery trails on their nocturnal rampages. Plant-eating types destroy crops by eating roots, leaves, stems and fruits. They are particularly partial to young shoots and seedlings and are able to consume a large variety and quantity of vegetation, using the minute teeth of their movable, abrasive radula to scrape or cut their food.

Fig. 74 Slugs and slug damage

They can wreak havoc in the greenhouse as well as the garden. They can be

kept out of the greenhouse if a border free from grass and plants is created between the walls and the rest of the garden. Pots should be stored away from any vegetation, since these pests will use them as shelter during the day and lay countless eggs on their inside and outside surfaces. In the garden, people try almost everything, from keeping geese (an excellent solution in itself, since geese do not eat cultivated plants) to dishes of beer, salt or vinegar. While many of these measures can be effective, they have to be repeated constantly and do not offer permanent protection. Resorting to toxic pellets introduces nasty contaminants and impacts on the food chain when poisoned snails are eaten by other animals and birds.

During dry and cold weather, as well as in daylight hours, in both sunny and overcast conditions, snails and slugs will hide under cardboard, stones, old leaf litter, and other debris in the garden. One way to reduce their numbers is to keep the garden free of such detritus. One can also use a piece of cardboard as a trap in otherwise clear gardens.

However, snails and slugs do have a function that can be used to the gardener's advantage. If deprived of cultivated plants, they will consume weeds, and so they can be put to useful work.

Treatment of All Plant Types

Land snails are plagued by many natural predators, including other gastropods such as decollate snails, ground beetles, leeches, birds and toads, among others. Indian loaches of the *Botia* genus of freshwater fish also feed on aquatic snails by sucking them out of their shells.

Humans also pose great dangers to snails in the wild. Pollution and the destruction of habitats have caused the extinction of a number of snail species in recent years.

The remedies described below included potentised preparations made from the common garden snail itself (*Helix tosta*), its predator the decollate snail (*Rumina decollata*), two snail parasites (*Hyposmocoma molluscivora* and *Leucochloridium paradoxum*) and two plant remedies (*Absinthium* and *Quassia*). Of these, the most effective and important remains *Helix tosta*, perhaps because it has been so widely used. The remedy *Bufo*, described in the section on General Insect Remedies, may also be useful against snails and slugs.

Fig. 75 Helix pomatia

A. Helix tosta

Toasted snail. *Helix tosta*. Prepared from species such as *Helix pomatia* and *Helix aspera*. Class: *Gastropoda*. Family: *Helicidae*. Trituration of toasted shells.

General

As a gastropod, the snail literally ‘walks with its stomach’ over plants. A single animal can consume an entire outer cabbage leaf in only a few hours and this common pest causes untold damage for gardeners, vegetable growers and farmers. The trail of slime dissolves the plant tissue, which is scraped by millions of tiny teeth, and passes into its digestive system, where it is digested further. There is a clear analogy here with the traditional use of snails as a treatment for consumption (TB).

Homeopaths have put the remedy to the test by potentising it, and extensive clinical trials in herb farms and private gardens have shown that applying *Helix* 6X to plants by spraying or watering protects them from snail attack. Protection is such that snails will pass previously sprayed plants to eat untreated plants instead. No other preparation continues to work four months after a single dose, even in heavy rain. When sprayed on a plant infested with snails, it destroys the animals’ shells, making them soft and slimy. On account of their similar characteristics and appearance, slimy moulds should also come under its action, but this has not yet been verified.

Helix does not affect the small native Australian snail, but only imported species such as the so-called Italian snail as well as slugs. In Australia, the native species often do not eat plants, but consume rock instead. We have seen many different rock-eating types in the outback, leaving clear grooves where they have eaten away material. While a homeopathic remedy made

from these native types could send them packing, since they do not bother us, we shall simply let them be.

Clinical

Snails, slugs and possibly slimy moulds.

B. Rumina decollata

Decollate snail. Order: *Gastropoda*. Trituration of the toasted shells.

General

Rumina decollata or the decollate snail is a predator of other snails and slugs. The animal grinds away the tail end of its shell by rubbing against a hard surface once it reaches its full size of around 40 mm in length, hence the name ‘decollate’, meaning ‘beheaded’. Native to the Mediterranean, it has been imported worldwide to help control snail populations. A voracious eater, its diet includes plants, but it particularly targets common garden snails in Europe, consuming both adults and snail eggs, which it digs up from the soil. However, it also eats harmless snails and beneficial annelids including earthworms. Although it prefers damp weather, breeding rapidly in these conditions, it can tolerate drier, cold periods by burrowing deep underground. It is mainly nocturnal and most active when it rains.

It is, however, difficult to establish it in a new environment and it may take a few years before it controls snail pests effectively. As a remedy in homeopathic potency, none of the less desirable qualities are present and it works more efficiently in controlling snail populations. The remedy has no effect on earthworms and this feature makes it especially attractive. It takes effect immediately and is not dependent on time or circumstances. Since the snails are not killed by the remedy, they can moreover be useful in eating the weeds in the garden, since cultivated plants become unpalatable after being treated with *Rumina*.

Clinical

Snails and slugs.

Fig. 76 The truncated shell of the predatory decollate snail, *Rumina decollata*

C. Hyposmocoma molluscivora

Predatory larva of a Hawaiian moth. Order: *Lepidoptera*. Trituration of the live caterpillar. Tincture of the live caterpillar.

Only a tiny minority of moth and butterfly species, less than 0.2%, have predatory larvae and this species, naturally occurring only on the islands of Hawaii, is one of four types known to eat snails.

The caterpillar is around 0.75 cm (3/10 inch) in length. When it comes across a slow-moving snail, it moves in quickly to wrap a mesh of silk threads around the prey, binding it fast. Once ensnared, the victim is devoured in stages. Empty shells are often added to the silk case which the caterpillar carries around for protection while awaiting its next meal.

In its native habitat it targets very small Pacific snails of the *Tornatellides* genus. Our small-scale trials of this remedy in homeopathic potency have yielded promising results against garden snails generally.

Clinical

Snails and slugs.

D. Leucochloridium paradoxum

Green-banded broodsac. Parasitic flatworm. Class: *Trematoda*. Trituration of the live flatworm. Tincture of the live flatworm.

General

A small European amber marsh snail, *Succinea putris*, is host to a parasitic flatworm, *Leucochloridium paradoxum*, which invades the animal's eye-stalk, making it an easier target for the birds which are the parasite's final host.

When a small, motile flatworm in its first larval stage enters the body of the snail through its mouth, it first settles in the innards as a sporocyst. Then it transforms into long tubes full of second-stage larvae which eat through the body of the snail to reach its eye-stalk. They prefer the left tentacle if available. In an ingenious example of aggressive mimicry, the larvae pulsate with colour in the presence of light, resembling a tasty, moving caterpillar. Since the eye-stalk swells and can no longer be retracted, this also makes the snail more conspicuous to predators.

These characteristics make *Leucochloridium* a prominent anti-snail remedy. Snails detect the energy imprint of a dangerous enemy against which they have no defence. They seek to avoid it at all costs, recognising it by sight, smell or energy pattern.

Fig. 77 Amber snail with left eye-stalk invaded by parasitic *Leucochloridium paradoxum* larvae

It is perhaps the place here to enter somewhat deeper into the concept of energy patterns. At the dilution rates homeopathy uses, no molecular substance remains behind. In the Introduction we have presented the nanophase theory of potency, which liberates the innate consciousness of the substances so processed. The energy pattern is a reflection of this consciousness. This consciousness is passed on to the plant when the remedy is absorbed and so the plant emits a mixture of its own and the flatworm's signatures. Any snail approaching the plant will be confronted with the flatworm danger and immediately change direction.

Clinical

Snails and slugs.

E. Absinthium

Common or absinthe wormwood. *Artemisia absinthium*. Family: *Compositae/Asteraceae*.

General

Since ancient times wormwood has been used as a remedy to keep snails and slugs off cultivated plants such as vegetables and flowers. To this end the plant was dried and applied as a powder, sprinkled around the plants to be protected. Today, we use the remedy in a homeopathic potency with equal success.

Clinical

Snails and slugs.

F. Quassia

Quassia wood. Bitterwood. *Quassia amara* and similar species. Order: *Sapindales/Rutales*. Family: *Simaroubaceae*. Trituration of the extract.

General

Quassia amara was originally native to South America, but now grows widely throughout the tropics including Africa, Australia and Asia. A range of trees with similar properties and names sometimes included in the *Quassia* genus are now often placed in related genera within the same family. These include:

Quassia (Simaba) africana
Quassia (Simaba) cedron
Quassia (Picrasma) excelsa
Quassia (Samadera) indica
Quassia (Simaba) undulata
Simarouba amara

The bark of this tree contains the white crystalline alkaloid quassin. With a bitterness threshold of only 0.08 ppm, this is 50 times more bitter than quinine, making it one of the bitterest substances in nature. This may account for much of its effectiveness in repelling or killing insects as well as slugs and snails. It has been used in organic agriculture and is part of a commercial brew made by companies supplying the organic market. An extract is sold under the name of Fertosan in the USA. These products still have the aim of destroying pests, ultimately a self-defeating exercise, since by killing one, the user will invite several hundred to the funeral.

In the homeopathic view of agriculture, we take the more sensible approach of considering the pest or disease to be but one of the symptoms indicating the type of stress our plants are under. Since the plant is having the problem, it is the plant that needs the treatment. Chasing the bug or pest is a wild goose chase, which will invariably end in defeat.

Clinical

Snails and slugs.

Fig. 78 Helix aspersa

11. Bacterial, Viral and Fungal Diseases

Bacteria, fungi and viruses are the most common plant pathogens. With the possible exception of fungi, they are not responsible for diseases, as we understand them in homeopathy. Rather, the situation in which we grow plants is the sole indicator for disease emergence. Hence what we put in the ground and how we treat plants has an important bearing on disease susceptibility. The common view on these so-called pathogens follows the same pattern as in humans.

A. Nutrition and Fertilisers and Organic Practices

"I wish I could draw a clear-cut, one-solution picture of plant diseases; if only organocultists (those who believe only in organic gardening) were right and all soil-borne diseases of plants – caused by bacteria, viruses and fungi – could be eliminated simply by not using chemical (inorganic) fertilisers. Unfortunately, the answer is not that simple."

The author of that quote is R. Milton Carleton whose book on Soil was published in 1961. It is recommended reading for all organic farmers. In it he discusses that feeding practices do have effects on diseases, sometimes causing them, sometimes preventing them. For example, an application of manure on a poor soil might protect against a condition of wilt by supplying nitrogen and potash, yet the same application on nitrogen-rich soil might trigger wilt.

It is well known that potato scab, a soil-borne disease, is most severe in alkaline soil. It can be prevented by the use of fertilisers and soil treatments to lower pH so the scab organism cannot grow. The reverse is true in some cases. For example, wilt and club root diseases in cabbage is worse in acid soil. The use of alkaline materials helps control these diseases. *(For a more complete discussion of diseases, see "Plant Disease Handbook" by Cynthia Westcott, published by D. Van Nostrand Co.)*

In many diseases, the cause is found to be an imbalance in nutrition. It may be too much nitrogen with too little phosphorus or too little of all the elements. Organic fertilisers show better response because it is more complete and contains elements often missing from chemical plant foods. Gardener's loam, with its complete supply of every element, is often the best

antidote to many plant diseases.

So the source of confusion is not so much due to differing responses to organic and chemical fertilisers but to the soil on which the plants were grown. To the orthodox thinker, soil is a medium to suspend nutrients. Nutrients are only important as plant foods and so these are always fed, making for very one-sided nutrition. When it is discovered that a micronutrient is involved, too much or too little is often given at first, or in the wrong form, which exacerbates the problem.

"Many garden experts talk about fall cleanup in much the same way that a dentist tells you to brush your teeth three times a day. He knows you won't take time to do so, but he's done his duty. This cleanup recommendation has been echoed and re-echoed until it has lost most of its effect. In the past I have neglected fall cleanup and four years out of five it made little difference in the amount of disease in my garden. In the fifth year, however, I was usually punished for my negligence, doubled and redoubled.

The fact is that except for surface diseases which are carried by insects, such as aster yellows and virus diseases of some plants (carried by aphids and leaf hoppers from sources of infection outside your property), sanitation can prevent disease. The fall cleanup must not, however, be a perfunctory ritual. It calls for cutting off every standing plant about a quarter of an inch above the surface, removing a spoonful of soil as well as the stems. This is tossed in a waiting wheelbarrow.

Fall is a good time to start new compost piles, "seeding" each new pile with bacteria-rich leftover material from an old pile. This old compost forms the foundation on which fresh garden debris is laid to form the first layer of the pile, unless the autumn leaf crop has already been added. Be sure that any plant wastes that might contain disease spores or insect eggs are buried deeply in the pile: they should not be closer than 12 inches to any exposed surface, for they must be subjected to the heat of fermentation. Add a good mixed fertiliser as well as some extra sugar or starch if possible (a good place to dispose of spoiled jellies, jams, wormy flour, and so on).

There are a number of soil-borne diseases caused by specific organisms that can survive for years in the garden. But they are not

likely to attack plants well grown in gardener's loam in a plot open to sun and air circulation."

(Carleton, Your Garden Soil: How to Make the Most of It, 1961)

However, the habit of leaving some plant debris in the garden to be processed directly into the soil does not always pose more risk to the crop; on the contrary, it protects it from attack by fungi, now too busy processing plant debris and humus, compost and old manure.

B. Germ theory

While some viral diseases such as barley yellow dwarf may come from outside the property, it must be borne in mind that the conditions in which crops grow are more responsible than the aphid vectoring a virus. For no virus can become active before the diseased state demands its appearance. Here homeopathy supports the "soil" theory, arguing that the host organism holds the key to disease rather than the microorganism, "germ" or "seed". Within conventional medicine, germ theory places prime importance on viruses, bacteria and other microbes. Its practitioners hold the proposition that microscopic entities called microbes have sufficient power to make us sick and furthermore declare these creatures can kill us and are, therefore, exceedingly dangerous and must be killed.

With the exception of occupational illnesses, wider environmental factors are typically neglected, along with the social, cultural and psychological aspects of the individual patient's experience. Iatrogenesis is often overlooked. There is heavy reliance on numerical readings from microscopic test slides to quantify the disease culprits.

Let us look at the theory, that germs cause disease, a little more closely. Proponents argue that when bacteria or viruses are killed the disease is soon gone as well.

The viruses become active from some outside trigger – generally an invasion by and of those same germs. They attack the living cells and destroy them, in the process using the cell DNA to multiply. A virus is really nothing more than a string of mRNA cells, which need another cell's DNA to complete them and divide. If this is allowed to continue unabated, the body will succumb under the onslaught and die.

This is the orthodox view, which has dominated medicine since introduced by Pasteur and others in the 19th century. It has been adopted in modern agriculture. However, Pasteur's theory was hotly disputed during his lifetime

and he himself is reputed to have conceded on his death-bed that: “It is the soil, not the seed.” We will scrutinise some of the assumptions Pasteur made in order to discover whether or not they fit the facts. The first is the assumption that germs cause disease.

Cause and result the same?

When a disease is full-blown, what is the picture of the blood?

A patient suffering from a severe case of (so-called) viral, bacterial or similar disease will invariably have a high load of the respective microorganisms in their blood. By contrast, if we examine the blood of any healthy person (or the sap of a plant), we may find the microbe is present in some cases, but never in disproportionate amounts. In the sick, everyone has a very high count. When normally it may be one per million, in disease it is one or two per three cells.

It is important to consider carefully what we observe. In a full-blown case of disease we are looking at the disease ultimate. It is an end result.

Hahnemann’s theories of disease predated modern germ theory.

> *Disease is not to be considered as an inwardly hidden* wesen *separate from the living whole, from the organism and its enlivening* dynamis, *even if it is thought to be very subtle. Such an absurdity could only arise in brains of a materialistic stamp.*
>
> (Organon § 13)
>
> *A natural disease is never to be regarded as some noxious matter situated somewhere inside or outside the person.*
>
> (Organon § 148)

Hahnemann gives a clear definition of disease:

> *The unprejudiced observer … perceives nothing in each single case of disease other than the alterations in the condition of the body and the soul, disease signs, befallments, symptoms which are outwardly discernible through the senses. …*
>
> *[He] only perceives the deviations … which are felt by the patient himself, perceived by those around him, and observed by the physician. All these perceptible signs represent the disease in its entire extent.*
>
> (Organon § 6)

Hence disease is nothing but a change in health of the mind and body, notable by signs and symptoms (restricted to physical signs and symptoms in plants). This is the long and short of every disease, whether caused by drugs or

natural dynamic means.

> *Only the life principle, mistuned to such abnormality, can impart to the organism the adverse sensations and … irregular functions that we call disease. The life principle is a power-wesen invisible in itself, only discernible by its effects on the organism. … The morbid mistunement of the life principle makes itself discernible by disease symptoms; in no other way can it make itself known.*
>
> (Organon § 11)

Hahnemann did not believe in the microbe as the cause of disease. He firmly established that the entire disease can be known by the changed sensations of the patient and by observable changes in the physical frame. He did not see a need for invasive techniques to trace the disease in the interior. He even considered lab reports unnecessary, except from normal secretions, such as urine, stool and menstrual blood.

He believed disease is a change in health and is cured by a remedial agent capable of producing such a disease in the healthy. A virus in his day was nothing but a poison – the virus of the cobra for instance. Jenner did his first experiments with the pox vaccine in Hahnemann's time and the bacilli, bacteria and other germs were becoming increasingly known and were equally increasingly considered the most important signs of a disease. Yet for Hahnemann this did not tally with his contention that disease and cure are both dynamic processes.

Modern medicine does not often consider the dynamics of either disease or medicinal action. The germs and viruses keep on multiplying as long as the disease lasts, until death follows: so says the theory. In addition, since death is the final result as they say, we must conclude that abundance of viruses or other germs is also an end-result. How then can they be the cause?

> *In effect, only the fungi can cause disease, since they live in the soil and their function is decomposition. In the bare soil of the modern farm, there is nothing to decompose but the living crop. Therefore, the fungi will attack the living plants, to secure their own survival.*
>
> (Kaviraj V.D. AIDS – Antibiotic-Induced Deficiency Syndrome)

C. Fungi

Fungi are the largest group of plant pathogens. They are sometimes thought of as plants that lack chlorophyll; in fact they are not plants but rather organisms in their own kingdom. Fungi obtain food from other living

organisms or from decaying organic matter. They produce microscopic spores that can be compared to the seeds of higher plants. The spores develop into threads (hyphae), which grow and branch into mycelia or other specialised structures (fruiting bodies).
Fungi enter plants through wounds, natural openings or by direct penetration through the surface of the plant. The fungal mycelium grows through the plant and eventually produces more spores. These spores can then spread the disease to other susceptible plants. Some fungi have complicated life cycles which require more than one type of spore and/or more than one type of host plant to complete the life cycle.
Fungi are spread by airborne spores (wind currents), soil, water (in irrigation water or rain splashes), seed or vectors. Vectors are agents that transmit diseases from one plant to another. Examples of vectors are: man, other animals, insects, tools, other microorganisms (fungi, nematodes, etc.) and so on.
Fungi, which are usually visible to the naked eye, cause rust, spots, mildew and damping-off. All of these are generally encouraged by moisture, warmth, and humidity. (Fig. 79)

Fig. 79 Coffee leaf rust, *Hemileia vastatrix*

D. Summary

We not only advocate avoidance of chemical fertilisers, but their replacement with proper compost or a biodynamic preparation such as B-500. We do not advocate the use of chemical sprays, regardless of their other “advantages”, except perhaps in a homeopathic potency, suitable for the case at hand.
The contention that chemical fertilisers impoverish the soil is borne out by

facts. Poor soil contains fungi, which really belong in the soil to break down organic matter. When these are not fed their normal diet, they will attack the living plants. Nowhere in nature do we find entire populations attacked by fungi, except when man has interfered.
Dieback, for example, in Western Australia and elsewhere is the result of removing so many trees that the fungus does not have enough to eat and will attack the remaining stands of trees. These stands are too small to maintain themselves and they succumb under the onslaught of many fungi, which in the past had enormous amounts of dead plant material to feed on. Robbed of their usual food source, they will need to feed on the living trees, simply to guarantee their own survival.
The solution proposed by orthodox opinion is the planting of as many trees as possible: this is the opposite of what needs to be done. The argument is that the fungus must be killed first and not fed more, lest it multiply too rapidly. However, sufficient trees will produce sufficient debris and the fungus will happily leave the trees alone. When fed sufficiently, why would the fungus go elsewhere?
Attacking living plants is more difficult than eating their debris. Plants have their own defence mechanism, of which salicylic acid is but one component. Hence the solution is to fool nature into believing that everything is following the lines of proper spacing and mixed cultivars, giving the impression that no monoculture exists in that place.
Let us now turn to some happier solutions that advocate balance in nature, to see what these have to offer.

Treatment of Asters, Daisies, Sunflowers (*Asteraceae/Compositae*)

Ferrum sulphuricum

Sulphate of iron. $FeSO_4$. Trituration of freshly prepared crystals or solution.

General

Ferr-s. corresponds, like *Calc.*, *Calc-f.* and Nat- *sil-f.*, to the condition of cancer in trees. Nutrients are not taken up. It may be suited to removing mercury from plants or modifying mercury uptake in plants. All symptoms are worse in summer, on warm days, at night and in the morning. Afternoons generally give the best appearance.
The roots may appear discoloured, red, or have bright red papular eruptions. Swelling of parts of the roots. There is a dry feeling under the epidermis of

the root (in healthy plants this is moist). Nutrient uptake is impaired or absent.

Moulds of all kinds: powdery mildews, downy mildew, grey mould of all species, sooty mould of all species, some black moulds. The exception here is slimy moulds which, on account of similarity in appearance, have been grouped with snails and slugs and covered by *Helix*.

Clinical

Impaired photosynthesis, deformed flowers, straggly, twisted, deformed appearance. Tree cancer. Mould and mildew. Sooty mould-black point (*Bipolaris* spp.), leaf spot (*Septoria* spp.), Alternaria black spot disease (*Alternaria* spp.) (Fig. 80).

Fig. 80 Black spot, *Alternaria* spp.

Appearance

Grey mould (*Botrytis* spp.) (Fig. 81)

Fig. 81 Gray mould, *Botrytis cinerea*, symptoms

This fungus produces sclerotia and can be present throughout the year in plant debris where cool humid conditions exist. Grey furry surface indicates spore formation. The spores are spread by wind. All above-ground parts are affected, although there is an affinity for fruit.

Dying flowers are often the first affected and from here the fungus spreads.

Indications of *Ferrum sulphuricum* for additional plant families:

Sooty mould-black point (*Bipolaris* spp.)

> *The embryo end of the growth darkens. It is caused by the two fungi and lives on decaying grasses and is very common. Spores are carried everywhere. Rain during grain development and filling enables the fungus to infect the seed or grain, and it develops slowly during the ripening process. The grains may still be used for seed stock because the germination is rarely affected.*
>
> (Grains R&D Corp.)

However, this makes the grain more susceptible, and a larger quantity of grain can be affected. Continued use of this infected seed will result in sterility and crop loss. It is better, when using infected seed, to spray shortly after seeding, using *Ferrum* to reduce infection and thus have clean seed for the next crop. In this way, resistance is built up and carried into the next generation, thus making susceptibility obsolete. What takes enormous

amounts of time and money through genetic engineering can be achieved cheaply and quickly through homeopathic treatment.

Septoria blotch(*Mycosphaerella* spp.)

Blotches on leaves, irregular in shape, tan to brown (Fig. 82), occasionally silvery with yellow rims. Along leaf veins, blotches have straight margins. Black specks, which are fruiting bodies, can be seen inside the blotches. The fungus survives in wheat residues. After rain in autumn, the spores are produced in great quantity, spread by wind, and can be carried over long distances in waterlogged areas, particularly in the hills, where spores are carried by running water. Infection is most likely in newly sown crops. After three weeks to a month, small black fruiting bodies form on the leaves. This is the time to spray *Ferr-s*. In moist conditions spores are produced and are carried from leaf to leaf by rain splash. In heavy rainfall, crop loss of up to 30% has been recorded. It is much less likely to spread in dry spells lasting up to a month. It does not affect grazing animals since it is a less lethal fungus than *Secale* or *Ustilago*. It is more similar to black spot than to ergot or smuts.

Fig. 82 Septoria leaf spot and canker, *Septoria musiva*, symptoms

Septoria nodorum blotch *(Leptosphaeria nodorum)*

Blotches on leaves that are yellow or tan to brown, oval-shaped, turning to grey as they enlarge. Leaves die with yellow tops. Chlorotic appearance. Fruiting bodies are grey-brown with specks within blotches. Later in the season the stems and glumes become infected. Grey and brown blotches with shrivelling of the grain. Seed loss may be total. Fruiting bodies with spores

are frequently found on both stem nodes and glumes.
The fungus survives in stubble and stalk debris. It affects wheat, barley, barley grass and brome grass. Spores develop after rain and are wind-dispersed over large areas. Early sown crops are easily infected. The ideal environment for infection is during warm, wet weather with heavy frequent rain. Spores spread from plant to plant by rain splash.

Relationship

Compare: *Sulph.*
Antidote to: *Calc., Cupr., Phos.*
Inimical: *Kali., Moly., Phos.*
Antidoted by: *Cupr., Mang., Zinc.*

Treatment of Cucurbits (*Cucurbitaceae*)

A. Ferrum metallicum

Iron. Fe. Trituration. Elemental iron used for this preparation.

General (see also Chapter 8)

Ferrum is needed for the process of photosynthesis. If there is an iron deficiency, plants become chlorotic, with a lack of chlorophyll.

Clinical

Chlorosis. Pale, sickly plants that nearly fall over. Imperfect assimilation, impaired photosynthesis, protein content low. Fruit and vegetables have no taste. Bacterial blights, waterlogging, head-tipping, blasting, *Phytophthera* spp.

Appearance

Root rot (*Phytophthora* spp.) (Fig. 83)

Fig. 83 Phytophthora root and crown rots, *Phytophthora* spp.

The first step in controlling any of the many diseases caused by *Phytophthora*

spp. is to obtain an accurate diagnosis. Although *Phytophthora* is a recognized disease, it has been misdiagnosed 50% of the time. A wide variety of cultural and chemical controls can be implemented for *Phytophthora* problems. Time spent collecting all the information for an accurate diagnosis will aid control efforts in the long run.

Chemical

Impaired photosynthesis, low protein content, systemic collapse of capillaries, paralysis of the capillary system. Impaired nutrition, little or no photosynthesis, low phosphorus and calcium content. Low sugar and starch.

Flowers and fruits

Flowers have increased pollination yet are sterile. No fruits, or incomplete fruit setting. Immature fruit drops too early.

Water needs

Either want of water or worse from watering.

Note

Ferrum must be used with care (see Chapter 8).

Relationship

Antidote to: *Calc.*, *Phos.*
Inimical: *Kali.*, *Phos.*, but not in *Ferr-p.*
Antidoted by: *Cupr.*, *Mang.*, *Zinc.*
Complementary: *Mag.*
Compare: *Ammonias*, *Calc.*, *Kali.*, *Mag.*, *Mang.*, *Nit-ac.*, *Phos.*

B. Ferrum phosphoricum

Ferric phosphate. Ferrum phosphoricum album. Ferrous-ferric phosphate. White phosphate of iron (Schuessler's). Said to be a true ferric phosphate ($FePO_4$) unlike the ordinary phosphate of iron which is a ferrous-hydric phosphate ($Fe(H_2PO_4)_2$). Trituration.

General (see Chapter 8)

Schuessler put *Ferr-p.* in the place of *Aconitum*, *Belladonna*, *Gelsemium*, *Arnica* and others which correspond to circulation disorders. Relaxation of tissue. When the molecules of iron contained in the cells of the cambium have suffered a disturbance through some injury or wound, the affected cells grow flaccid. If this affection takes place in the annular fibres of the capillaries, they are dilated and sap is increased, and is reached during the first stage of inflammation. When cells are brought back to normal with *Ferr-*

p. the cells can cast off disease.

Clinical

For fresh wounds, contusions, sprains etc. and for removal of excessive flow of sap. It vies with *Arnica* and *Calendula* as a first-aid remedy. Indicated in the first stages of rust; reddish inflamed roots, dry under epidermis. Very thirsty plants that do not assimilate nutrients. Capillary congestion. Pale, straggly-looking plants with many eruptions. Tan spot, blotches, bacterial blights, take-all. (Fig. 84)

Fig. 84 False smut, *Ustilaginoidea virens*, sign

Appearance

Bacterial blights - halo spot(*Pseudomonas* spp.)

Small green oval, water-soaked spots on the leaves and sheaths up to 10 mm across. The centres of the spots change to straw or brown colour. A small green water soaked halo appears on the surrounding leaf. Later the patches become browner and join together in irregular patterns (Fig. 85).

Fig. 85 Halo blight on common bean

Stripe blight (*Xanthomonas translucens*)

Similar to *Pseudomonas* but elongated without halo. First water-soaked, and then brown stripes with yellow margins, which later join in irregular patterns. Emerged florets appear mottled, brown or white (*Acon.*, *Bell.*) and may be sterile. Leaves wither and die.

Blight bacteria survive on seed and debris. They spread by rain splash or leaf contact. Aphids can also act as carriers. Damp weather favours development and spread. Dry weather stops spread.

Bacterial wilt (*Erwinia* spp./*Ralstonia* spp.)

Wilting occurs because of a lack of moisture in a plant. Bacteria introduced into a plant create a thick white substance that restricts the flow of moisture in a plant. This eventually kills the plant. The bacteria are carried by certain pests that overwinter in or near the garden area. Corn can be attacked by flea beetles that carry the bacteria. Cucumbers and watermelons are affected by cucumber beetles, such as the striped and spotted cucumber beetles (*Acalymma vittata* and *Diabrotica undecimpunctata*) (Fig. 86) that carry the bacteria. Cucumber leaves are the first to be seen to wilt, followed by wilting of the vines.

Fig. 86 Spotted cucumber beetle *Diabrotica undecimpunctata*, adult

Water needs

It is advisable not to water much in dry weather to stop spread. The plant is very thirsty and wilts. Use trickle system.

Flowers and fruits

Either abundant pollen or complete absence. Premature flowering, difficult

flowering, difficult setting of the fruit.

Relationship

It is not only *Ferrum* preparations that are indicated in such diseases, the *Ferr-p*. debilitation and suppurative processes paint a perfect picture of the capabilities of *Phos*. to upset the epidermis with blackish ulcers. *Nit-ac*. and *Kali-c.*, *Nat-s*., and *Nat-c*. can be indicated for similar symptoms. Although normally *Phos*. is the antidote of *Ferr*., here it is seen as a complement, because the normally antagonistic actions are combined. This creates a substance which not only acts on the capillaries – hence the rot – but is also a stimulant for flowering and fruit-setting.

Treatment of True Grasses (*Gramineae/Poaceae*)

A. Aconitum napellus

Aconitum napellus. Monk's hood. Family: *Ranunculaceae*. Tincture of the whole plant.

General

Grows in moist pastures and waste areas in mountainous districts.
The rapidity of action determines its appropriateness for conditions where symptoms set in with great intensity, as in rust. *Aconitum* is homeopathic to tension. Active congestion of the capillary system, especially after cold spells, cold dry air at night. The keen cutting winds of the hills (amongst which the plant grows) give the signature of its remedial action. Chill, injury or mechanical damage. Extreme sensitivity to light. Plants have a marked thirst. Great and sudden sinking of strength, effects of both heat and cold. This remedy has been used with great success in the treatment of rusts.

Clinical

Stripe rust, leaf rust (Fig. 87), beetroot and bean rust, marigold rust, iris rust, poplar, rose, snapdragon. Banana rust. Bean blossom thrips. Rust-mite. Active congestion of the capillary system. Rust - rapid onset of symptoms. Worse cold dry nights, injury, mechanical damage. Barley yellow dwarf virus.

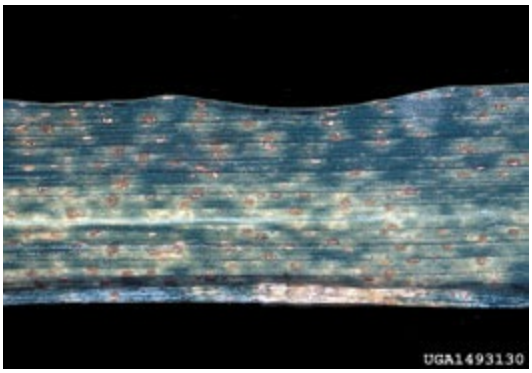

Fig. 87 Wheat leaf rust, *Puccinia recondita*

Appearance

Rusts with bright red colouring and yellow margins. Hard red swellings of the leaves, bloated and hot and bright red. Red spots, swollen and shiny and broad. Sudden wilting.

Rust diseases (*Puccinia* spp.)

It is estimated that there are many hundreds of fungi associated with rusts. They cause a yellowish small patch or spot on the upper surface of the leaves. This develops into a powdery pustule, the powder being the stalks which produce the spores. These stalks rupture the epidermis, which is why they appear raised above the surface. Wind or rain and water sprinklers spread the spores. Rust is the common name for the disease caused by several different fungi which produce dark-coloured spore pustules on the surface of infected plants (Fig. 88). Additional symptoms include leaf and stem cankers, stunting, yellowing, galls, and a general unsightly appearance of the infected plant.

Fig. 88 Cedar-apple rust, *Gymnosporangium juniperi-virginianae*, symptoms

Rust fungi may be controlled by the integrated use of several different management practices. Rusts with two hosts may be reduced by eliminating the alternate host (if one of the hosts is undesirable). Removing infected bedding plants or other annuals will help to reduce spread in the garden. In conventional agriculture and horticulture, rust control is very difficult because the spores can be blown or washed over large areas very quickly. Some rusts cause galls, which are uniform in appearance and connected with particular fungi. The economics of spraying rusts with chemicals make their use prohibitively expensive for wheat and other grains

Barley yellow dwarf virus

This disease affects many species of the *Graminae/Poaceae*. All cereals and many grasses fall prey to it (Fig. 89). It only survives in living plants. Infection is restricted to the phloem. The virus can only be seen with an electron microscope.

Fig. 89 Barley yellow dwarf virus on common wheat

Epidemics appear to occur every 2-3 years, restricted to high rainfall areas. Yield losses can run up to 80% in cereals. Late infection can reduce the yield up to 20%. There is no chemical control for yellow dwarf after infection. The only available control is killing the aphid vector when detected.
But if the infection has already started, the plants are usually considered lost. *Acon*. and *Bell*. can do much for this problem even after infection. Aphids carry the virus from plant to plant. An aphid needs to feed on an infected plant to become a lifelong carrier.
Four different types of yellow dwarf virus have been identified. Their differences are expressed in their vectors (different species of aphids), the degree to which they can be transmitted and the extent of damage.
Two types of aphid, the oat aphid (*Rhopalosiphum padi*) and corn leaf aphid (*Rhopalosiphum maidis*), are the main species to spread yellow dwarf. The oat aphid feeds on oat, wheat, barley and grasses. Corn leaf aphids feed on cornleaf barley and some grasses. Three more aphid species have been connected with its spread: the grain aphid (*Sitobion* spp.) and two cereal root aphids (*Rhopalosiphum insertum* & *Rhopalosiphum rufiabdominalis*).
Aphids migrate in autumn and spring from kikuyu grass, paspalum, couch and African lovegrass. Kikuyu seems to be more infected than others.
Symptoms are often confused with nutrient deficiencies, waterlogging and other stresses. The leaf symptoms differ between oat, barley and wheat.

Affected Plants:

<u>Oat</u>

This strain is more prominent in the crimson pink reddening of the leaves, which is the reason it is included under *Bell*. Blotches appear on leaves from the tip downwards, turning red on older leaves, while the younger leaves show the interveinal chlorosis. The varieties that turn yellow/orange should be treated with *Acon*.
Red spots, rust, sometimes oozing sap, red, purple or bluish. Swelling of eruptions. Rust with orange or dark yellow margins. Dark brown spots. Roots shiny and swollen or dry and swollen. Gangrenous parts of stems, leaves and flowers. Red spots the colour of blood.

<u>Wheat</u>

Interveinal chlorosis is the first sign of the yellow dwarf. The colour is yellow/orange and there is less pronounced reddening of leaf tips.

<u>Barley</u>

Barley has a bright yellowing of the leaves and pale yellow interveinal chlorosis. Sometimes reddening of the leaf tips occurs. In all cases of yellow dwarf, if infection occurs in young plants, they stunt and grain yields are sharply reduced, often with shrivelling of the grains. In general, sick plants are stimulated to produce seed to ensure survival of the species. In grain, tillering is poorly developed and sterile heads are common.

Grasses

Grasses do not always show symptoms. *Phalaris* shows yellowing, whereas the rye grasses show reddening or purpling of the leaf tips. (The latter should be treated with *Bell*.) However, several rusts survive in winter on several types of grasses and so we must be careful not to accept everything at face value, but check which grasses the fungus selects as a winter host.

Flowers and fruits

Flowers dry, hot, overproduction of pollen, slowing the setting of fruit.

Water needs

Thirsty, but generally worse from watering.

Relationship

Compare: *Ammoniums*, *Bell*.

Antidote: *Bell*.

B. Secale cornutum

Spurred rye. Ergot of rye (infected with the fungus *Claviceps purpurea*).

Kingdom: Fungi.

General

A black horn-like spur, which is the result of the action of the fungus *Claviceps* on the grains of rye. Rye and other cereals such as grasses are apt to be affected with ergot disease when grown on damp, ill-drained paddocks that are water-logged.

If breeding cattle are grazed on pastures where infected grasses grow or are fed infected hay or straw, they are liable to drop their calves. Although the link between ergot and brucellosis is not firmly established, the close similarity in terms of symptoms strongly suggests that ergot is in fact the cause of this disease. The correlation between late abortion due to brucellosis and the occurrence of miscarriage around the seventh month of pregnancy in the remedy *Secale* supports this contention.

Brucellosis

This disease is very hard to eradicate by conventional means. The stables are usually treated with flame-throwers, and all cattle in the herd are generally slaughtered, yet the disease still seems to take hold with equal vigour. In our practice in India, we have used *Secale* with exceptional success in the treatment of brucellosis and ergotism in cattle and its after-effects in humans. To destroy the ergot on our fields too, we also treat the cattle shed, the pasture, and the grain in all such cases.

Since ergot affects all grains as well as grasses, *Secale* will cover all ergot species generically, given the fact that the properties of all grasses and grains in the materia medica do not differ very much, except in concomitants and modalities [compare Boericke's Materia Medica – sweet vernal grass (*Anoxanthum odoratum*), oats (*Avena sativa*) and corn (*Stigmata maydis*)]. All have disturbances in the generative sphere to a more or less pronounced degree, corresponding to the flowering and fruiting stage in plants. The symptoms listed below are not due to ergot:

Avena: flowers and fruits disturbed, small or absent grains.

Stigmata maydis: flowers and fruits affected.

From these obvious similarities, it follows that *Secale* must, by necessity, have similar symptoms, which is further confirmed by the descriptions found in the materia medica.

Another grain, darnel, is frequently infected with ergot, and many epidemics of miscarriage are due to this grain. It has had an evil reputation since ancient times and its name, darnel, means stupefied. Mr. A. S. Wilson in transactions of the Edinburgh Botanical Society for 1874 declared that the poisonous properties of this grass are due to ergot, which so commonly infects it. Note also that the cases of poisoning have been more frequently observed in low-lying wet districts and during the wet season.

Clinical

Ergot, in all grains and grasses (Fig. 90).

Fig. 90 Ergot

Appearance

Purple-black, horn-like kernels (sclerotia) replace one or more seeds in the head. The kernels are larger than the grain. The first sign of infection is during flowering when yellowish droplets of sugary slime are produced. Ergots survive in the soil for up to one year, producing spores which infect open wheat and other grain and grass florets. Infection is aided by cool, wet weather during flowering. Spores are spread by rain splash or insects attracted to the sugar. Ergots affect open pollinated species more than others. This is the main reason why most grain and grass species are affected. Hybrids are more often affected than other varieties, and oats and barley less so.

Ergot is rare in Australia. Conventional control is not available. The best advice given by the Grain Board is to sow clean seed, allow one year fallowing, or grow a different crop. Mowing or spraying a grass pasture to prevent flowering reduces ergot formation but spraying has the disadvantage that grass is contaminated with herbicides.

Note

Secale cereale (rye) sown in two successive crops eradicates couch grass, chickweed and most other weeds.

C. Ustilago maydis

Corn smut. Kingdom: Fungi. Trituration.

General

Like *Secale*, with which it should be compared, *Ustilago* affects animals that feed on grains affected with smut in a similar manner; they miscarry. Roullin remarks that:

… sheep lose their wool, mules cast their hoofs, and chickens lay eggs without shells.

(Roulin, quoted by Clarke)

Like *Secale*, *Ustilago* has an affinity with the generative sphere. Clarke mentions a case of a female dog losing five foetuses at the fifth week of gestation and all the hair on her body, whilst her nails were loose. In plants, the bark will loosen, and it may well prove to be another remedy like *Sil*., which arrests dieback.

Clinical

Smut, flag smut, bunt, loose smut, head scab. Found on oats, sorghum, wheat, barley, triticum and corn. (Fig. 91, 92)

Fig. 91 Smut, *Ustilago maydis*

Fig. 92 Corn smut, *Ustilago maydis*

Appearance

Flag smut (*Urocystis tritici*)
Long grey raised streaks on the leaves, shafts and stems. Heads badly damaged. These streaks break through, showing masses of grey black spores, which are spread on clothes, animals and insects. Affected leaves are twisted and split lengthwise.
Stunted plants give early warning, although spotting them is not always easy. Tillers will perpetuate the damage on future crops. Spores are wind borne and survive for several years. Early sowing during warm weather favours and promotes infection.
Water needs
Likes evening watering. Appears wilted in the morning.
Bunt (*Neovossia indica – Tilletia indica*)
Bunt is difficult to spot, but at maturity smutted heads can be seen, grey brown bunts replacing the grain, the balls forcing the glumes apart. Infected plants are shorter and stay green longer, taking more time to mature. The balls break and release spores during harvest. Fishy odour. Cool and moist conditions favour infection at planting time. The fungus grows through the plant affecting only the head.
At warmer temperature infection is less likely. Even resistant varieties may become affected, especially when blight is severe. Spores remain dormant for up to several years.
Water needs
Normal.
Head scab *(Fusarium graminearum)*
Head scab is classified under the action of smuts and covered by *Ustilago*. Cattle do not like this stock and when infected with head scab they miscarry, become infertile, develop haemorrhage of the intestinal canal and refuse food. There is no conventional chemical control available for smuts.
Premature bleaching of a section or all of a head. Pink and orange fungal strands appear over the head. Infected areas are most often sterile. Seeds are shrivelled and have a pinkish colour. Head scab survives in the soil, on cereal residue and grass. The spores are spread by rain splash. Moist conditions and warm to hot weather are most favourable to this fungus.
Water needs
Normal.
Loose smut (*Ustilago nuda* f. sp. *tritici*)

When the heads emerge, a mass of dark brown powdery spores can be seen (Fig. 93). Initially, the spores are held in a thin membrane which soon breaks. All that remains of the head is a bare stalk and some drift. Spores are wind-borne and affect other wheat and barley crops. Moist, warm conditions favour infection.

Fig. 93 Covered smut, *Ustilago hordei*, symptoms

Infected grain is not visibly different from healthy grain until the heads emerge.

Water needs

Normal.

D. Berberis vulgaris

Common barberry. Family: *Berberidaceae*. Tincture of the bark of the root.

General

An introduced species in Europe, scattered but long established.

According to Prof. Henslow:

> *…it was thought by farmers in the middle of the last (19th) century, that barberry blighted wheat if it grew near the hedge. Botanists thought the idea ridiculous, yet the farmers are right. Their observations consisted of the occurrence of rust in the wheat grown closely to barberry, which extended steadily across the whole crop. A fungus attacks the leaves of barberry, producing orange coloured spots. Its spores attack the wheat. These develop parasitic threads within the leaf, from which arise the red rust spores. Following this, dark brown or black spores consisting of two cells, called wheat mildew, appear. After some time these form one-celled red spores, which attack the barberry and the cycle is*

completed. Barberry is the primary host plant of this cycle.

(Henslow, quoted by Clarke)

The roots are affected in a peculiar manner, producing whitish vesicles on the epidermis. The roots feel dry to the touch, or are covered in a frothy viscid slime. The vesicles may appear red as in rust, while the whitish froth is connected with mildew.

The plant is either very thirsty or requires little water. Nutrients are either taken up very rapidly or not at all. The evaporation rate is higher than normal, which accounts for thirsty plants.

Respiration and photosynthesis are impaired, due to mildew or rust. The plant has a tendency to lodging.

Flowers have incomplete stamens or produce no pollen. The ovaries may not function properly, resulting in impaired fruit-setting capacity.

The rust has small red pustules that gradually turn brownish and larger.

Clinical

Rust, mildew.

Relationship

Compare: *Acon.*, *Ammonimus.*, *Bell*.

E. Belladonna

Deadly nightshade. *Atropa belladonna*. Family: *Solanaceae*. Tincture of the whole plant when beginning to flower.

General

Grows in chalk and limestone soil in woods, rough and cultivated ground. Goats and rabbits can eat nightshade with impunity. Cats and dogs are only mildly affected. In plants, it has been used with very good results on rust in fruit trees. *Bell*. acts on all parts of the organism.

Sensitivity to light (*Acon*.) is a leading feature, making for leaves that either do not open, or burn. Sensitivity to changes from warm to cold in damp weather, and draughts of air.

Belladonna, like *Aconitum*, is fast-acting, which means that it is more suited to symptoms that develop rapidly. Heat, redness and burning. Darker red than *Acon*. Red with orange margins (*Acon*. red and yellow). Purple-red, orange-yellow. Red parts such as flowers and fruit look pale. Blistering from heat. Swelling and bluish redness. Sunburn (Fig. 94). Windburn. *Bell*. has been used with excellent results for the dark rusts.

Fig. 94 Sunscald damage

There are hundreds of different fungi that are supposed to cause the diseases we call rust. Generally they cause some sort of small yellow or red patch or spot on the surface of leaves. Under each spot, on the lower surface of the leaf, a powdery pustule appears. This happens when the fungus produces the stalks of spores. These stalks burst the epidermis of the leaf, and the spores are then blown away in the wind.

Rusts are usually difficult to control because new infections can occur over a large area. Rusts develop very quickly. Hence *Aconitum* and *Belladonna* as rapidly-acting remedies can do much to control this.

Some rusts stimulate plant cells to form galls. Rust in cereal crops cannot easily be sprayed economically with conventional methods. *Aconitum* and *Belladonna* can serve this purpose satisfactorily.

Some rusts need two different host species to complete their life cycle and survive the cold in areas with cold winters. For example in Europe the poplar rust spends part of its life on the larch, while wheat rust spends part of its life on barberry. They produce thick-walled spores in autumn. These survive the winter to infect the next sequential species in the spring. Spore germination requires some moisture, but generally not enough is known about the weather conditions that favour rust disease.

Clinical

Carnation rust, fuchsia rust, iris rust, peach rust, raspberry rust. Rust with orange margins, darker red than *Aconitum*; worse cold damp weather. (Cold, dry: *Acon*.) Barley yellow dwarf virus, white florets, where other colour is healthy. Take-all, anthracnose. Acacia spotting bug. Banana rust thrips, rust mite.

Appearance

Symptoms are often confused with nutrient deficiencies, waterlogging and

other stresses. The leaf symptoms differ between *Cruciferae/Brassicaceae*, *Cucurbitaceae*, *Rosaceae* and *Gramineae/Poaceae Species* such as oats, barley and wheat.

Grain rust (*Puccinia graminis*)

Crimson pink reddening of the leaves is more prominent in oats, hence the use of *Bell*. From the tip down the leaf shows blotches, turning red on older leaves, while the younger ones show interveinal chlorosis. The varieties that turn yellow/orange should be treated with *Acon*. (Fig. 95)

Fig. 95 Wheat stem rust, *Puccinia graminis*, symptoms

Red spots, rust, sometimes oozing sap, red, purple or bluish. Swelling of eruptions. Rust with orange or dark yellow margins. Dark brown spots. Roots shiny and swollen or dry and swollen. Gangrenous parts of stems, leaves and flowers. Red spots the colour of blood.

Flowers and fruits

Flowers are deficient in pollen (*Acon*. opposite). Small fruits, falling prematurely. Leaves falling due to rust. Scarlet redness of rust on leaves, stems and flowers. Red spots on fruits.

Relationship

Compare: *Acon., Ammonimus*.

Treatment of Mints (*Labiatae/Lamiaceae*)

Lacticum acidum

Milk acid. Lactic acid. $HC_3H_5O_3$. Dilution.

General

Lactic acid was discovered by Scheele in sour milk, the result of spontaneous fermentation of sugar of milk under the influence of

casein. It is also met with in many vegetable products, which have turned sour.

(Hering)

Milk acid is a bactericide of the first order, particularly in plants. If lactic acid slightly oxidises it produces pyruvic acid, which functions as the trigger for the Krebs cycle in plants. For this reason *Lacticum acidum* in potencies should play an important role in the respiration of plants. Pyruvic acid plays an important role in the chemistry of biological processes. It is an intermediate in the conversion of proteins, carbohydrates and fats and is found in abundance in cucumbers.

Mosaic virus can be kept under control through the use of milk sprays (Conacher, 1991). Conacher recommends 1 part of milk and 9 parts of water, in repeated applications ten days apart.

To control mildew, one part of milk and two parts of water are used. To cover 20 m^2, it is advised to use 0.5 l of milk in 1 l of water. Therefore a hectare (10,000m^2) would require 250 l of milk, which would be too costly. Potencies of *Lac-ac*. will act equally well at a fraction of the cost.

Clinical

Mosaic virus and mildews.

Relationship

Compare: *Sal-ac*.

Complementary: *Acet-ac., Ox-ac*.

Treatment of Nightshades (*Solanaceae*)

Ocimum minimum/basilicum

Basil. Family: *Labiatae/Lamiaceae*. Tincture of the whole plant.

General (see also Chapter 9)

Oci-b. is a constitutional remedy for tomatoes because of its special affinity. In companion plants this phenomenon is frequently met with, and can provide new insights into the relationships between the different remedies in the context of human treatment. From further study, much can be learned about the internal relationships between many different remedies that to date have not enjoyed such extensive scrutiny.

It will also improve the taste of the tomato crop.

Clinical

All pests and diseases of tomatoes. Anthracnose, bacterial cancer, bud worm (Fig. 96), fusarium wilt, russet mite, spotted wilt, tobacco mosaic virus,

blossom end rot.

Fig. 96 Tobacco budworm, *Heliothis virescens*, larva

Treatment of Pulses (*Leguminosae/Poaceae*)

Aconitum napellus

Monk's hood. *Ranunculaceae*. Tincture of the whole plant.

General

There is a comprehensive description of the use of *Aconitum* to treat rust diseases in this chapter in the "Treatment of True Grasses" section. Here we should like to again mention the typical symptoms that indicate *Aconitum*: rapid onset, severe worsening, injuries or damage caused by mechanical effects, thirst. Sudden and severe weakening as a result of heat or cold.

Clinical

Stripe rust, leaf rust, beetroot, bean rust, marigold rust, iris rust, poplar, rose, snapdragon. Banana rust. Rust mite. Active congestion of the capillary system. Rust - rapid onset of symptoms (Fig. 97). Worse from cold dry nights, injury, mechanical damage. Barley yellow dwarf virus.

Fig. 97 Rust, *Puccinia hordei*, sign

Appearance

Rust with bright red colouring and yellow margins. Hard red swellings of the leaves, bloated and hot and bright red. Red spots, swollen and shiny and broad. Sudden wilting.

Flowers and fruits

Flowers dry, hot, overproduction of pollen, slowing the setting of fruit.

Water needs

Thirsty, but generally worse from watering.

Relationship

Compare: *Ammoniums*, *Bell*.

Antidote: *Bell*.

B. Chamomilla

German chamomile. *Matricaria chamomilla*. *Compositae*. Tincture of whole plant.

General

Grows at roadsides and waste areas on stony ground. Hahnemann says:

> *A painful increase in the sentient action followed by a considerable depression of the vital force. It increases the general sensitivity of the*

plant, a property that seems to give rise secondarily to various organic alterations that Cham. is capable of producing.

(Hahnemann)

Cham. has much in common with *Calc*. because it covers acute stages of *Calc*. problems, where calcium is deficient or in excess in the soil. It is the carbonate part that forms the link. It is thus equally a close relation with all carbonates including carbon itself. It is in itself hardly ever seen as a constitutional remedy. It has a wide range of action. Consultation will thus induce a plan to be implemented in steps – aiming to make a farm look so natural that even nature will be fooled.

The farmer needs to give up NPK – use *Cham*. instead to enhance microbial life and provide for distraction of pests. We recommend careful spraying, leaving weeds on the edges as an alternative food source for pests and an additional hiding place for pest predators. Reduction of food source always results in population decline.

Fungi must be given food, lest they attack plants. A large number of fungi function to decompose debris, which is converted to nutrients for the crop. A thick layer of plant debris, such as straw, pea straw, bean straw, and compost can accomplish this.

Check carbon content and binding elements (see also Chapter 12, *Carbo vegetabilis*).

Clinical

Damping off. Composting. Growth promoter. Contains a hormone that increases yeast. Wilting, windrowing. Rusts, both yellow and red.

Appearance

Chamomilla is especially suitable for plants that have been overdosed with pesticides. Debility is marked. The plant is hot and thirsty. The roots may be mouldy.

Damping off

This is the kind of debility that is typical of the *Chamomilla* state. It is often caused by an excess of nitrogen, which is usually given as a boost in the seedling stage, but which causes collapse of the seedlings, called damping off. Plants treated with *Cham*. when very young become hardy against a number of plant diseases.

The roots may have a reddish appearance, be dry at the tip, or have froth on them. The plant is thirsty, the roots have a putrid smell. Sometimes there is a

thick, yellowish mould, or blisters that break open. The plant appears to lack nutrients, yet application of fertiliser has little effect. The plant is wilted and very thirsty. Respiration impaired, oxygen release low. Contraction of respiratory problems. Photosynthesis impaired, starch and protein content low. Carbon binding deficient (*Calc.*, *Mag-c.*, *Kali-c.*, *Am-c.*). Contraction of chlorophyll cells.

Nutritional

Nutrient content low. Nutrients "locked up", inability to assimilate. Food value is low, due to low starch and protein content. Reduces the need for liming.

Flowers and fruits

Flowering impaired, possible underdevelopment of ovaries, or insufficient production. Stamens are swollen, female flowers and parts do not function properly. Possibly deformed fruits which may rot on the tree due to over ripening.

Water needs

High.

Relationship

Compare: *Calc.*

Treatment of Roses (*Rosaceae*)

A. Lapis albus

Silicofluoride of calcium. $CaSiF_6$. Taken from Lapis albus (a species of gneiss found by Grauvogl in the mineral springs of Gastein and named by him. The waters flow over the gneiss formations into the valley of Aachen where goitre and cretinism abound). Trituration.

General

The salient features of *Lap-a* belong to rots and the generative organs, the flowers being absent, stunted, shrivelled, and otherwise deformed, if the plant gets to that stage. Any soil in which your plant gets sick should be fallowed for one year, and provided with humus or humus- forming aids.

Rots of nearly all kinds, cancers on trees with no ulceration, mottled and rotten leaves. Scarring of bark, pale appearance.

Clinical

Cancer in trees. Scarring on bark, tumours on roots, potato rot. Black leg potato, black bulb rot, black rot, radish, halo spot, black rot, black spot roses,

strawberry blossom-end rot, potato gangrene. Rots and decaying diseases in all species. Some forms of mosaic virus. All rots are dry rots.

Appearance

Since all dry rots are similar, only three examples will be given. Symptoms are identical for any part of the plant, be it roots, stems, leaves, flowers or fruits.

Bitter rot, apple *(Glomerella cingulata)*

Signs of disease come on late, near ripening. They consist of small brown spots spreading rapidly to cover one third of the fruit in two to three days. In humid conditions, this results in the growth of masses of pink spores which form concentric circles.

It can completely dry out the fruit as the skin sinks in deeper and deeper, till the mummification is complete, the fungus surviving in a self-made cocoon till next season.

When the temperature drops below 20°C (68°F) and after sufficient rain, the cocoon collapses and the spores are blown out by the wind and back onto the trees.

Willy Sharp, Gravenstein and Granny Smith are mostly affected, but other apples can as easily be affected.

Indications for additional plant families:

Black root, radish (*Aphanomyces raphani*)

This fungus produces irregular black patches on the root. These areas may become sunken. Sometimes the root may split, thought the tissue remains firm. Warm, moist conditions are most favourable for this disease. The fungus can survive several years in the soil, and is spread by rain splash and running water.

Pen root radish is more often attacked than bulb root.

Blossom end rot, tomato

The symptoms only occur on the blossom end of the fruit. The area becomes brown, tough and sunken. Sometimes, as in egg tomatoes, the effect is entirely internal, showing only a dark brown interior through the skin. It occurs halfway through the maturation process.

These symptoms indicate that there is a lack of calcium; the fruit cannot form. The calcium content in the soil may be too low, or the soil too acidic, or the levels of NPK too high; there may be a fluctuating water supply, or too many leaves forming simultaneously with fruit (available calcium goes to the

leaves). *Lap-a* will redress the uptake of calcium where sufficient levels are present. The pH has little to do with the health of a plant, as on biodynamic farms healthy plants are grown in a pH of 3.5. *Lap-a*, containing calcium silicofluoride, stops the dry suppuration and balances calcium uptake, or, alternatively, if not available in abundance, regulates the plant's use of it. At the first sign of infected tomatoes, immediately spray *Lap-a* 6X and the infection will be nipped in the bud.

Tree canker

It is the dry rots and tree cankers that *Lap-a* will do much to redress. (Fig. 98)

Fig. 98 Chestnut blight or canker, *Cryphonectria parasitica*, symptoms

As with *Calc*. preparations, *Lap-a* should be used with the utmost caution. It cannot be stressed enough that very small doses exert a great influence over plants, particularly the tissue salts, because they form the essential building blocks of the plant.

Relationship

Compare: *Am-c., Calc., Cham., Kali-c., Mag-c., Nat-c.*
Antidoted by: *Ammoniums, Nit-ac., Sulph.*
Complementary: *Sil., Nat-sil-f.*
Antidote to: *Ferr., Magnesiums, Mang., Zinc.*
Inimical: *Magnesiums, Phos.*

B. Belladonna

Deadly nightshade. *Atropa belladonna*. *Solanaceae*. Tincture of whole plant when beginning to flower.

General

Belladonna has already been described under "Treatment of True Grasses (*Gramineae*)". Here we will concentrate on the various rust diseases.

Clinical

Carnation rust, fuchsia rust, iris rust, peach rust, raspberry rust. Rust with

orange margins, darker red than *Aconitum*. Worse cold damp weather (Cold, dry: *Acon*.). Barley yellow dwarf virus, white florets, where colour is otherwise healthy. Take-all, anthracnose. Banana rust thrips.

Appearance

Rapid onset of symptoms; many plants affected in a short period. Plants thirsty and limp. Leaves hanging down, giving a wilted appearance. The rusts are dark red, or with very red margins, and spread rapidly from leaf to stem to trunk and other plants nearby.

Rose rust

Rust fungi may be controlled by the integrated use of several different management practices. Rusts with two hosts may be reduced by eliminating the alternate host (if one of the hosts is undesirable).

Removing infected bedding plants or other annuals will help to reduce spread in the garden. Depending on the host, tolerant varieties may be available. Lastly, *Belladonna* and *Aconitum* are among the most effective remedies for the rust disease.

Black spot of roses (*Diplocarpon rosae*) (Fig. 99)

Fig. 99 Black spot, *Diplocarpon rosae*

Black spot of roses is a fungal disease caused by *Diplocarpon rosae*. The disease develops in moderate temperatures when moisture is present on the leaf surface. General leaf chlorosis and circular, well-defined, black spots on leaves are the most common symptoms. The disease is similar to powdery mildew in that it overwinters in canes and in fallen leaf debris. The fungus germinates in favourable conditions and is spread to susceptible hosts by splashing water or airborne spores. Sanitation is important in the control of

black spot. Rake and destroy fallen leaves and prune out infected canes. Look for tolerant varieties if black spot is a common problem in your area.

Sooty mould (*Cladosporium* and other spp.) (Fig. 100)

Fig. 100 Pecan scab, *Cladosporium caryigenum*

Sooty mould is a term used to describe the black sooty fungal growth on many trees and shrubs. Several different fungi can cause sooty mould. These fungi are generally not parasitic to the plants they grow on, but grow on honey-dew produced by insects (aphids, scale and mealy bugs). Sooty mould is common in warm, humid weather. The fungi appear on leaves, stems or fruits as a superficial, black growth. The fungi do not penetrate the host tissue and can be wiped off with a damp cloth. Although sooty mould fungi are not pathogenic, they do create a problem when the growth of the fungi becomes dense, reducing the amount of light which reaches the green leaves. This reduction in light limits carbohydrate production by the plant and weakens it‘s growth. The most effective means of controlling sooty mould, besides treating it when too late with *Belladonna,* is managing honeydew-producing insects.

Belladonna, like *Aconitum,* is fast-acting, hence it use for symptoms that develop rapidly. Heat, redness and burning. Darker red than *Acon*. Red with orange margins (*Acon*. red and yellow). Purple-red, orang-yellow. Red parts such as flowers and fruit look pale. *Bell*. has been used for the dark rusts with excellent results.

Additional ornamental plants susceptible to rust:

Fuchsia rust (*Pucciniastrum epilobii*)

This causes purple-red blotches on the upper leaf surface. These blotches subsequently die and become dry and brittle, with purple spores on the edges on the underside of the leaves. The spores can range from yellow to orange-red or purple.

Iris rust (*Puccinia iridis*)

This disease is characterised by rusty red powdery spots on both sides of the leaves. The leaves turn chlorotic around the spots, which can spread to the whole leaf. Although the plant may lose some leaves from this rust, it generally survives. This rust is spread mainly by wind and it is worse in warm and humid weather. Irises grown both from rhizomes and bulbs are affected, the former more than the latter.

Powdery mildew of roses (*Sphaerotheca pannosa*)

Powdery mildew of roses, caused by *Sphaerotheca pannosa*, is extremely common worldwide. The fungus attacks young, succulent foliage. The symptoms begin as slightly raised, blister-like, red areas on leaves. Eventually all infected above-ground plant parts will develop a white powdery fungal growth.

S. pannosa overwinters in infected canes or buds and in fallen leaves. In spring, new shoots become infected from old mycelia from conidia (asexual spores) or from ascospores (sexual spores). Conidia and ascospores are disseminated to other susceptible hosts by air currents. The conidia and ascospores germinate and directly penetrate the plant. The disease is favoured by night temperatures between 14-17°C (58-62°F) and day temperatures between 18-26°C (65-78°F). The fungal spores cannot germinate in free water, but germinate readily when the relative humidity in the plant canopy is high (97-99% at night and 40-70% during the day).

Powdery mildew is managed by good sanitation practices. Prune out all infected canes, remove fallen leaves, and destroy all infected plant material. With severe infestation, it is advisable to plant resistant varieties.

Other common ornamental hosts of powdery mildew fungi:

Euonymus, photinia, lilac, pecan, verbena, crepe-myrtle, sunflower, catalpa, cotoneaster, holly, locust, mesquite, mulberry, privet, apple, pear, phlox, zinnia and stone fruits. We see that several fruit trees will benefit from this remedy, since it is often the first indicated among all remedies for controlling rust fungi. Peach, plum, nectarine and apple rust are examples.

Flowers and fruits

Flowers are deficient in pollen (*Acon*. opposite). Small fruits, falling prematurely. Leaves falling due to rust. Scarlet redness of rust on leaves, stems and flowers. Red spots on fruits.

Relationship

Compare: *Acon.*, *Ammonimus*.

C. Natrium salicylicum

Salicylate of sodium. $NaC_7H_5O_3$. Trituration/ solution.

General

The natrium component refers to salination problems or deficiencies in some salts in the plant. All Natrium-compound salts will be affected in plants. Plants defective in lime salts, which often wilt easily, do not stay upright well. The sap is not of normal consistency; it looks and feels as though it is decaying. There is capillary congestion, imbalance in nutrient uptake. Plants become infected and die.

Clinical

Tobacco mosaic virus, blue mould, anthracnose, downy mildew, angular leaf spot, potato virus, alfalfa virus, barley yellow dwarf virus. Septoria blotch, tan spot, ring spot, eye spot, scald. *Fusarium* spp (Fig. 101, 102).

Fig. 101 Fusarium head blight, *Gibberella zeae*

Fig. 102 Bacterial spot, *Xanthomonas vesicatoria*, symptoms

Relationship

Compare: *Sil., Ferr-p., Phos., Calc-f. Sal-ac.*
Inimical: *Kali.*
Antidoted by: *Phos.*

D. Salicylicum acidum

$C_6H_4(OH)COOH$. Artificially prepared from phenol.

General

Salicylic acid is found in nature in the leaves and bark of willows and in oil of wintergreen and is synthetically obtained from carbolic acid. A recent discovery is that aspirin given to plants when sick greatly speeds recovery. It has been widely used as a food preservative. Prolonged use in humans causes Meniere‘s disease (auditory nerve vertigo), gastric disturbances, delirium, septicaemia and necrosis of the tibia. These symptoms in humans can point us to some indications for its use in plants. Roots may be covered with white or red patches. Many pustules, pale or brown on the leaves. Septoria blotch, tan spot, ring spot, eye spot, scald and all other blotches and mosaic viruses may improve under *Sal-ac*. regardless of plant species.
Hydroponic testing has been underway since 1992, by Malany, Klessig, Pierpoint and Vernooy et, al. Their results show only crop resistance, through “inoculation”. They do not signify cures. From these results, inference may be drawn as to the cures effected. *Sal-ac*. as a remedy, being homeopathic, is different from the crude form used during the tests and will prove to be less aggressive and thus may take longer to produce results in provings. Plants have their own immune system. *Sal-ac*. also affects other plant processes.

Foliar application has been shown to speed up and increase flowering, adventitious root initiation and fruit yield. It increases absorption of potassium and reduces germination of lettuce seed.

Salicylic acid forms an important part of the immune system of plants. Without it, the plant can do little to fight off diseases or pests. When plants are invaded by a pathogen, a number of responses may be induced in the area surrounding the infection. These responses include rapid cell death, to prevent the spread of the disease, while healthy cell walls are strengthened and antimicrobial agents are released. The unaffected parts develop more resistance to further infections by either viral, bacterial or fungal pathogens. This mode of resistance is termed systemic acquired resistance. These mechanisms have been recognised since the early part of this century, but little is known about how this response occurs. There must evidently be some messenger substance that provokes the healthy cells to action. Salicylic acid has been suggested as a component.

Salicylic acid is not the translocated signal, but is required in signal transduction. From the analogy of how vaccination works in humans, there are now voices that demand “plant vaccination”. However, as the saying goes “if it is not broken, don’t fix it”. In an infected leaf, salicylic acid accumulates at the site of infection. When salicylic acid is not available to plants, the systemic acquired resistance does not work. In addition, when *Sal-ac*. has been given, it shows increased resistance. Most research has concentrated on tobacco mosaic virus.

Only a small number of diseases and crops have been studied. Further testing is certainly warranted, but in this case with potencies of *Nat-sal*. and *Sal-ac*., considered under a separate heading in this book.

Clinical

Potato virus. Tobacco mosaic virus, mosaic virus, blue mould anthracnose (Fig. 103, 104), downy mildew, angular leaf spot, *Pseudomonas* infections.

Fig. 103 Anthracnose, *Colletotrichum* spp., asexual spore

Fig. 104 Asexual anthracnose, *Colletotrichum* spp., symptoms

Appearance

Several different viruses cause mosaic symptoms on potatoes and other related plants. These are referred to as potato virus X, A and Y. Symptoms vary from a light mottling of yellow and green on the leaves, to yellow spots or crinkling of leaf tissue. Sometimes veins may blacken and plants die early. For more information about mosaic viruses, see “Diseases of Vegetables”.

Relationship

Compare: *Nat-sal.*, *Lac-ac*.

E. Allium cepa

Common red onion. *Liliaceae*. Tincture of the onion, or of the whole fresh plant. Gathered from July to August.

General (See also Chapter 9)

Allium will cure inflammations and increased secretions as in apple scab, downy and powdery mildews. Wounds, after damage, that do not heal. Not to be used on beans and peas, as it inhibits their growth. This is confirmed in the potencies.

The roots of the plants have a bad smell. The plants are thirsty and seem to crave nutrients and fertiliser. Evaporation is increased or totally absent. Photosynthesis is impaired, respiration is diminished (use an oxygen meter at night to check), consequent development of mildews. Gangrenous spots.

Clinical

Gangrene, apple scab (Fig. 105, 106), downy and powdery mildew on gooseberries and cucumbers. Respiratory problems. No uptake of nutrients. Onion is a good companion to carrots. Late blight on tomatoes and potatoes (Fig. 107). Brown rot stone fruit.

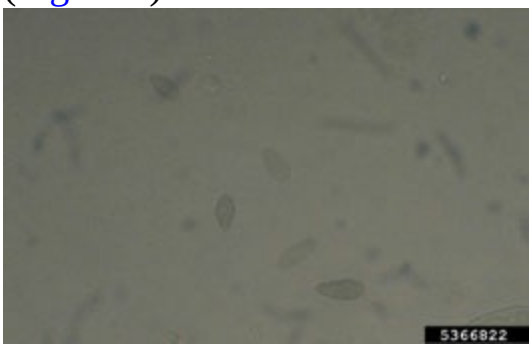

Fig. 105 Apple scab, *Venturia inaequalis*, asexual spore

Fig. 106 Apple scab, *Venturia inaequalis*

Fig. 107 Late blight, *Phytophthora infestans*, symptoms

Appearance
Leaves droop, covered in mildews. Fruits may also be affected.
Water needs
High.
Warning
Do not use on antagonistic plants such as beans and peas! Only companion plants should be treated, as nothing is known about its effects on other plants.

Treatment of Grapevines (*Vitaceae*)

A. Hyssopus officinalis
Family: *Labiatae/Lamiaceae*. Tincture of the whole plant.
General
Hyssopus is described in detail in Chapter 9. It is important for viticulture that it can heal bacterial disease both as a companion plant and as a decoction.
Clinical
Bacterial rots, blights. Respiratory problems. Best action in viticulture. (Fig. 108)

Fig. 108 Black rot, *Guignardia bidwellii*, symptoms

Valeriana officinalis
Valerian. Family: *Valerianaceae*. Tincture of fresh root.
General
Valerian is often found near ditches and streams, hence its use for waterlogged soil. While *Samb*. cures waterlogging in the leaves of plants, here the soil is waterlogged, giving rise to the associated problems. *Valer*. has a peculiar kind of smell that repels insects on man, plant and animal.

Roots have a blistery appearance. The blisters are whitish. The plant takes up nutrients well, but seems not to thrive. Protein content is low, photosynthesis impaired. Uptake of CO_2 is diminished due to clogging of the pores in the epidermis of the leaves. Evaporation is increased. The flowers may come too early or be incompletely developed. *Valeriana* stimulates phosphorus activity. It attracts earthworms. It can be used on all plants.
The plant feels better in windy weather, rather than in still conditions. The leaves show rust patches, confluent rather than isolated, as from banana rust thrips. Alternatively, there may be moulds, shiny moulds in particular.

Clinical

Slimy mould, moulds in general.

Flowers and fruits

Flowers very early, sometimes incomplete development.

Water needs

High, due to high evaporation rate.

Relationship

Compare: *Bomb-pr.*, *Samb.*, *Vib*.

Research for this chapter with regard to descriptions of bacterial, fungi, and viruses comes from various agricultural departments in universities, from their generous publications that are available to the general public. In particular, the College of Agricultural, Consumer and Environment Sciences at New Mexico State University has a wealth of information for gardeners and agriculturalists.

12. Injuries

Arnica montana

Leopard's bane. *Asteraceae/Compositae*. Tincture of whole fresh plant.

A. General

Grows in the Alps and other mountainous areas.

Arnica is a first aid remedy par excellence; trauma in all forms and varieties, pests, pruning, transplants and mechanical injury will be cured by *Arnica* as by no other remedy (Fig. 109). *Arnica* should not be sprayed onto open wounds as it will cause inflammation and suppuration. *Arnica* has been used extensively for the above-mentioned indications with good results.

Fig. 109 Transplant shock, planting

Tumours on trees as a result of incorrect pruning, even cancerous growths, can be healed, provided they are the result of some form of injury. Pruning wounds that ooze sap. Root damage after transplants, after hail, when damaged leaves become yellow, or red as in deciduous trees in autumn.

B. Clinical

After transplants or pruning (Fig. 110). Also after herbicide damage. Do not use on open wounds. Plants both transplanted and pruned cannot be given

Arnica - these should instead be treated with *Calendula* (see *Calendula*).

Fig. 110 Damage caused by pruning

C. Appearance

Wilting after transplants, due to root damage; mist *Arnica* onto the leaves. Weeping wounds after pruning. Water *Arnica* in on the roots. Rotting grafts, tumours on old wounds, especially on large trees where large limbs leave big scars. Scar tissue soft and spongy with rotting pulp underneath. Swellings hot, hard, shiny, red, bluish or yellow spots. Yellow spots caused by bruises or disease, eruption of small raised spots as in yellow rust.

D. Water needs

Thirsty when wilting from transplants. Otherwise little more than normal.

E. Relationship

Compare: *Calen.*, *Ferr.*, *Carbo-v.*

Calendula

Marigold. *Calendula officinalis*. *Compositae*. Tincture of the flowers; tincture of the whole plant

A. General

What *Arnica* is to trauma, *Calendula* is to open wounds. Where *Arnica* is of little or no use, or even dangerous to plants, *Calendula* comes to the rescue. It belongs in the same order of *Compositae* as *Arnica*. Lacerated and ulcerating wounds such as those found on roots that have been ripped or cut during transplants. *Calendula* will be of great help here, as confirmed in the field tests.

Calendula is antiseptic and restores vitality to the injured parts. It stops the entry of external opportunistic infections, as well as the proliferation of internal dormant viruses, but only in wounded plants. Nematodes cause these types of wounds. *Calendula* proved to be effective.

Arnica irritates, whilst *Calendula* soothes. Suitable for all cases where skin or

bark is broken. Flowers of marigolds close when dark clouds pass overhead, therefore affected plants are usually worse in cloudy weather and during cold winter nights, which may be the cause of ulceration of pruning wounds or broken roots.

Calendula contains a large proportion of nitrogen and phosphoric acid, a possible explanation for its healing powers. Both substances can cause severe suppuration and also cure it. Nitrogen is tissue building in plants, whilst phosphoric acid helps the metabolism, accelerating it as needed in affected areas. After a cutting is made, it is advisable to dip it in a *Calendula* solution to speed recovery and root growth. The moon calendar is an invaluable help in determining the best time for striking from shoots and cuttings (see *Nit-ac*. and *Phos*.).

Calendula in pest control has some properties worth considering: it repels asparagus beetle and does a lot of good in turf. Especially on bowling clubs' turf, with its unnatural environment, it discourages nematodes. The other varieties, such as *Tagetes patula* and *T. erecta*, are highly regarded as natural nematicides. From the effects of "teas", as in biodynamic preparations, plenty of information has already been collated to warrant the use of homeopathic preparations.

B. Clinical

Transplants (Fig. 111), pruning, storms, or mechanical damage. Asparagus beetle, nematodes.

Fig. 111 Transplant shock, damage

C. Appearance

Slightly or severely wilted after transplants.

D. Water needs

Low or normal, especially when striking cuttings, or from storm, mechanical injury, or pest damage.

In strikings or cuttings, *Calendula* will heal the wound and promote root growth. This remedy is part of the First Aid four pack[1], a kit for plants containing *Arnica*, *Carbo vegetabilis*, *Silicea* and *Calendula*. These four remedies will cover almost all problems connected with transplanting plants.

E. Relationship

Compare: *Arn*.

See also: *Nit-ac*., *Phos*.

Cantharis

Spanish fly. Order: *Coleoptera*. Trituration of live insect.

A. General

Cantharis upsets the generative sphere of the plant, causing burning. Consequently when the flowers appear burnt in hot weather, *Cantharis* is the remedy. It causes and cures an abundance of pollination from too long a

stamen, readily absorbed by female flowers. Leaves and flower petals blister in the sun, especially after misting. Plant may have a burnt appearance. Fertiliser burns. After bush fires, to speed recovery and regrowth.

B. Clinical

Sunburn (Fig. 112), blisters on leaves and petals. Fertiliser burns, water droplet burns, after bush fires, windburn. Bronze orange bug, rust chrysanthemum, pelargonium. Blister beetles on potatoes.

Fig. 112 Sunscald, damage

C. Appearance

Burnt as after bushfire. Blisters on leaves and flower petals from fertiliser, water droplets or sunburn.

D. Flowers and fruits

Flowers abundant. As a reaction to fire, the plant triggers off reproduction before it dies. Abundant pollen, good pollination. Fruits fail to mature, and drop before they set.

E. Water needs

High. Plant very thirsty. To replace sap lost in fires (*Carb-v.*).

F. Relationship

Compare: *Bomb-pr.*, *Carb-v.*

Carbo vegetabilis

Charcoal. Carbon (impure). Trituration.

A. General

Charcoal is antiseptic and deodorant, both in its crude form and potencies. Signs of decay and putrefaction are leading indications.

Carb-v. may also be much more than a rescuer of plants from a near-death

state. The carbon acts deeply on respiratory and chlorophyll cells, but except for a stunted or wilted look, does not exhibit noticeable symptoms elsewhere, save for capillary collapse, an inevitable consequence of excessive carbon intake (this finding is consistent throughout the carbons).

Carbon forms the pivot of balance in relation to the other elements. It is not the resting point, but rather the rotating point - an axis - about which the shifting equilibrium of the other elements takes place. The chemical uniformity of the carbon compounds on the one hand accounts for a one-sided and limited sphere of action, while on the other hand it accounts for the action upon all living entities and the consequent unlimited range of application.

All compounds, regardless of the elements of which they are formed, prove suitable for medicine. In plants this is of course restricted to those that play a role in plant life. Compounds usually act more slowly than pure substances, thus giving rise to a wider range of symptoms. Carbon exists in so many compounds that it can be considered the backbone in the treatment of plants and possibly in other living entities as well. Together with *Silicea*, it forms a true agricultural polychrest. Carbon is the pillar of the entire organic world, while silica is the inorganic shell that encases the carbon. Carbon compounds are the most extensive in nature, not least because carbon can combine with itself.

The relationship with *Silicea* is exquisite and extensive. Carbon is the building material and silica is the cement.

B. Clinical

Slow recovery or dying plants after transplants. After severe mutilation through storm damage or mechanical injury (Fig. 113). After rots. Decay, putrefaction, anthracnose. After loss of vital fluids. Nematodes.

Fig. 113 Incorrect pruning

C. Appearance

Wasted and wilted. Has nearly lost all leaves (though not relevant for deciduous trees in fall), looks weak, burnt from bushfires or dying from lack or excess of water. Desperate flowering (as in *Canth*.) to reproduce before dying, yet too weak to produce fruit or seed. Fruits fall prematurely. Streaks of reddish brown on the leaves, veins stand out; when a twig or leaf is broken, plant loses too much sap. *Carb-v*. was used extensively in Western Australia after transplants of blackboy or grass trees and palms, with very good results, especially on blackboy trees.

D. Flowers and fruits

Desperate flowering. Long stamen, abundant pollen. Female flowers have impaired function. Premature falling of fruit, or no fruit development.

E. Water needs

In this instance, plants have to be considered individually as water needs may be low or high; especially in trees, each situation must be assessed by individual symptoms.

F. Relationship

Compare: *Arn.*, *Calen.*
Complementary: *Sil.*

Magnesium carbonicum

Carbonate of magnesium. $MgCO_3$. Trituration.

A. General

Magnesium plays an important role in photosynthesis (see also Chapter 8). *Magnesium carbonicum* is indicated not only for lack of magnesium, but also for symptoms of burning, among others.

B. Clinical

Wilting, temperature shock, frost shock. Chlorosis, dirty yellow. Windburn, damping off.

C. Relationship

Compare: *Acon.*, *Am-m.*, *Bell.*, *Ferr-m.*, *Kali-m.*, *Nat-m.*
Inimical: *Calc.*, *Kali-c.*, *Kali-m.*, *Kali-p.*, *Kali-s.*, *Nat-c.*, *Nat-m.*, *Phos.*
Complementary: *Calc.*, *Kaliums*, *Nit-ac.*, *Phos.*, *Zinc.*
Antidoted by: *Mang.*

Silicea

Siliceous earth. Silicea terra. Silex. Silicon dioxide. SiO_2. Trituration of pure precipitated silica.

A. General (see also Chapter 8)

Silicic acid is a constituent of the cells of the connective tissue. The epidermis forms the protective sheath around the cambium where silica gives strength to the long molecules of the fibre. *Sil.* will cripple bark in healthy trees causing death. The suppuration it can set up is sufficient to destroy a plant or tree. Its indication in dieback has been confirmed in practice with remarkable results. A sapling with dieback, which had only one quarter of the bark left, which was loose and drying out, was given one dose of *Sil.* 6X and the next day, the bark was reattached to the cambium, and after one week, the top branches were growing new shoots and leaves.
On sandy soils *Silicea* works wonders and in spite of a harsh environment (or even thanks to such circumstances) *Silicea* can make plants thrive. It can be

used in soils where all appears normal, yet puny plants persist, and on any plant at sowing time, or as protection against mildew and mould, weak cells, exhaustion, fruit setting, striking, transplanting, green manure provision, all bark diseases and dieback.

B. Clinical

Dieback. Premature flowering, herbicide, germination aid, general tonic, transplant shock, soil remedy, weak straggly plants, puny growth, bark and sheath diseases, chlorosis, aphids, bud worm, citrus mite, dried fruit beetle. Weeds.

C. Relationship

Compare: *Lap-a*.
Antidote to: *Mang*.
Complementary: *Calc*.

1 available from Narayana

13. Weeds & Allelopathy

Allelopathy and its possibilities for weed control

A. History

Theophrastus (ca. 300 BC), a student of and successor to Aristotle, wrote about allelopathic reactions in his botanical works. He has been called the "father of botany", and wrote of how chickpea "exhausts" the soil and destroys weeds.

In 1 AD, Gaius Plinius Secundus, also known as Pliny the Elder, a Roman scholar and naturalist, wrote about how chickpea and barley "scorch up" cornland. He also mentioned that walnut trees are toxic to other plants.

Augustin Pyramus De Candolle, a botanist and naturalist, suggested in 1832 that soil sickness was caused by chemicals released by the crop.

And in 1907-1909, two researchers called Schreiner and Reed investigated the isolation of a number of phytotoxic chemicals from plants and soils.[1]

We might add that certain crops have always been grown together, since they protect each other. These are called companion plants and their relationships are also a form of allelopathy. While these phytotoxic chemicals act in an inhibitory way in some cases, in other cases they act as stimulants.

B. What is allelopathy?

The word allelopathy derives from two separate words: "allelon" means "of each other", and "pathos" means "to suffer". Allelopathy refers to the chemical inhibition of one species by another. The "inhibitory" chemical is released into the environment where it affects the development and growth of neighbouring plants.[1]

The term allelopathy refers to the production, by a plant, of chemicals (allelochemicals) which can influence the growth and development of another plant. Such an effect can be varied and can be negative (e.g. reduced germination) or positive (e.g. increased growth). For weed management, we are interested in the inhibition of one plant (the weed or weeds) by another (usually the crop) through the production of allelochemicals. These allelochemicals may be actively produced by a growing plant or arise from the residues after death. The effects of the allelochemicals may be reduced or enhanced by microorganisms.[2]

Allelopathic chemicals can be present in any part of the plant. They can be found in leaves, flowers, roots, fruits or stems. They can also be found in the surrounding soil. Target species are affected by these toxins in many different ways. The toxic chemicals may inhibit shoot/root growth, they may inhibit nutrient uptake, or they may attack a naturally occurring symbiotic relationship thereby destroying the plant's usable source of a nutrient.[1]

C. Are all plants allelopathic?

Not all plants have allelopathic tendencies. Although they exhibit these tendencies, some may actually be displaying aggressive competition of a non-chemical form. Much of the controversy surrounding allelopathy is in trying to distinguish the type of competition being displayed. In general, if it is of a chemical nature, then the plant is considered allelopathic. There have been some recent links to plant allelotoxins directed at animals, but data is scarce.[1]

D. Environmental impact

Allelopathy is a form of chemical competition. The allelopathic plant is competing through "interference" chemicals. Competition, by definition, takes one of two forms – exploitation or interference.

Competition is used by both plants and animals to ensure a place in nature. Plants will compete for sunlight, water and nutrients and, like animals, for territory. Competition, like parasitism, disease, and predation, influences the distribution and number of organisms in an ecosystem. The interactions of ecosystems define an environment.

When organisms compete with one another, they create the potential for resource limitations and possible extinctions. Allelopathic plants prevent other plants from using the available resources and thus influence the evolution and distribution of other species. One might say that allelopathic plants control the environments in which they live.[1]

Assuming this is true, it directly points to conscious content in plants and a corresponding mentality. Evidently, without consciousness and mentality there is no possibility of control, let alone of the environment. In the same manner, we see that related plants always seek each other. This is also due to consciousness, rather than ascribing everything to the allelochemicals. After all, these cannot develop if the right type of conscious mentality is not present. Competition is impossible without consciousness and mentality, just

as stimulation and cooperation depend on similarities in conscious mentality. Development always goes from the subtle to the gross, since the inner qualities are reflected in external properties. What is not present in consciousness has no chance of developing, since the trigger for its development is absent. The best example is disease as an expression of conscious mentality and emotion. One who is happy and contented will not get sick, while his sad, scared or angry neighbour is bound to become sick, simply because he lacks peace of mind.

Therefore, it is evident that control of the environment through inhibitory or stimulating chemicals is a conscious effort. Naturally, we can make use of these properties to further our own ends in growing crops. We can see that those who think mechanistically immediately want to use these allelochemicals to make expensive products, which by the very size of the dose will trigger new problems. The hope is to overcome resistance by using “natural” substances. These people's ignorance of the significance of the dose ensures that these products will create resistance.

Elsewhere we speak extensively about resistance and the size of the dose. Here we will say only that large doses always suppress, while the extremely small dose will stimulate. Since stimulation is the desired goal to achieve the fastest and most permanent result, it is evident that large doses can never achieve this, but must achieve the opposite.

While using natural substances is in itself a sound principle, the manner in which they are used must be part of the equation. In homeopathy, the doses are always extremely small, to the point of being almost negligible. Proponents of the orthodox line of thought call our micro-doses placebo, since such minute or even absent energies cannot possibly be effective, to their mechanistic way of thinking.

This is the general idea, which is sound in its notions. What works between plants due to their allelopathic properties must therefore also work in homeopathic potencies, since the similia principle cannot but produce the same in whichever form it is applied. Naturally we need to look out for crops that have these traits. We discover that grains inhibit their own growth when the straw is left on the land. We also discover that this is nature’s way of telling the farmer not to grow the same crop twice in succession. Nature has developed a built-in inhibitor aimed at preventing the farmer from exhausting the land. If he plants potatoes, these will be stimulated by that same straw,

while it inhibits the emergence of weeds.

E. Which crops show allelopathic properties?

Many crops have been reported as showing allelopathic properties at one time or another and farmers report that some crops such as oats seem to clean fields of weeds better than others. The list includes: wheat, barley, oats, cereal rye, brassicas, red clover, yellow sweet clover, trefoil, vetch, buckwheat, lucerne, rice and sorghum.[2]

We can instantly see that these are remedies from the *Gramineae* and the *Brassicaceae* families, which can be effective in the suppression of weeds. Without the need to grow these crops to obtain the allelopathic effects, these remedies are applicable and effective, regardless of which crop is grown afterwards. While restraint must be applied in the repetition of growing many types of grains on the same piece of land in succession, these same grains provide the stimulus for the successive crop.

The remedy will immediately act on the weeds just germinated and on the seeds, preventing their development. After 24 hours, all residues of the remedy have been destroyed by UV or been absorbed by the seeds and weeds. Now it is immediately safe to grow the desired crop on the clean piece of land, on which sufficient green manure will keep the fungi, bacteria and viruses busy. The drawbacks of having to grow what has the allelopathic properties are at once removed by the use of the potencies. It is only interesting for the rice-grower, since he must plant in the same piece of ground time and again. How this is done is explained in Furuoka's book “The One-Straw Revolution”.

The drawbacks are listed below. They include such things as differences in strength, specificity against particular weeds only, or even suppressing its own germination. The latter is to the farmer's long-term advantage, since it makes sure he does not exhaust the land. Modern farming methods remove everything from the land, apparently removing the restrictions nature herself has put in place and making it possible to grow more than one crop of grains on the same piece of land. This will exhaust the soil and make the growing of other crops afterwards a problematic endeavour.

F. What other factors might need to be taken into account?

Before using allelopathy in weed management programmes there are a number of other factors that might be important in any given situation.

Varieties

There can be a great deal of difference in the strength of allelopathic effects between different crop varieties.

Specificity

There is a significant degree of specificity in allelopathic effects. Thus, a crop which is strongly allelopathic against one weed may show little or no effect against another.

Autotoxicity

Allelopathic chemicals may suppress not only the growth of other plant species, they can also suppress the germination or growth of seeds and plants of the same species. Lucerne is particularly well known for this and has been well researched. The toxic effect of wheat straw on following wheat crops is also well known.

Crop-on-crop effects

Residues from allelopathic crops can hinder germination and growth of following crops as well as weeds. A sufficient gap must be left before the following crop is sown. Larger seeded crops are affected less and transplants are not affected.

Environmental factors

Several factors impact on the strength of the allelopathic effect. These include pests and disease and especially soil fertility. Low fertility increases the production of allelochemicals. After incorporation the alleopathic effect declines fastest in warm wet conditions and slowest in cold wet conditions.[2]

These are the reasons farmers used crop rotation. Not only does the soil become exhausted, it is also “poisoned” by the allelopathic chemicals that are released by plants. Therefore, a certain crop could be grown for some time, but its allelochemicals prohibited the excessive use of land for monocultures of the same crops. The apparent ability of chemical fertilisers to overcome these drawbacks is not the case in practice.

Such allelopathic effects are present in the plant, but both unknown and non-existent with homeopathic remedies, since these act specifically and for an extended time only on seeds that have absorbed the remedies. They leave no residues and are therefore not effective on the following crop, which can at all times safely be grown.

Allelopathic chemicals have their own drawbacks when used in their crude form. Homeopathic potencies do not suffer from these drawbacks. There is

no autotoxicity and there are no crop-on-crop effects and no environmental factors to take into consideration in their use. There may be considerations of strength but these are superfluous, since all allelopathic chemicals are potentised before being used. This removes all considerations of strength, since they are no longer applicable. Specificity is often wanted, simply because the weeds that do grow with certain crops are adapted also to the allelopathic relations existing between weed and crop.

G. Allelopathic weeds?

Several weed species have been reported to show allelopathic properties. They include couch grass, creeping thistle and chickweed. Where they occur together they may have a synergistic negative effect on crops.[2]

This in itself is not a problem, provided an effective remedy can be found to eradicate these.

H. What are the effects of allelopathy?

Allelopathic effects can include poor germination, impaired root growth and stunted shoot growth. Obviously these symptoms can also have other causes apart from allelopathy and in practice it can often be difficult to distinguish true allelopathic effects.[2]

However, when made in potency, these allelopathic effects can be proved to exist or not. From what has been studied so far, confirmation of the allelopathic effects is more often achieved than not.

I. Is it important?

Because it is difficult to separate the effects of competition (e.g. for light, water and/or nutrients) from allelopathic effects in the field, some researchers doubt the importance of allelopathy in practical terms. For day-to-day crop management it is of less importance whether a weed-suppressing effect is due to allelopathy or not. This distinction will however be important in developing a successful research programme.[2]

As already explained above, the use of these plants as remedies will reveal the truth of the assumptions surrounding this fascinating subject. It certainly deserves to be explored and experimented with.

J. What practical use is allelopathy?

As outlined in the previous section, there are many potential problems with attempting to use allelopathy as a practical tool for weed management in organic farming systems. In particular:

- *Information about which crops are effective against which weeds is limited.*
- *Information about which are the most allelopathic varieties of a particular crop is not available.*

To provide maximum weed suppression, allelopathic crops need to be managed effectively, but there are no effective management recommendations, which in any case will vary from one crop to another.[2]

K. Where does this leave us?

Current evidence indicates that the role of allelopathy in weed suppression in both field and cover crops is at best uncertain. It is probably safe to say that at the present time we are not in a position to provide practical advice for the use of allelopathic effects in weed management programmes.[2]

While for orthodox thinking the uncertainties and the difficulties seem insurmountable, homeopathy offers a cheap and easy testing method, which is safe and environmentally friendly. The crops can be grown and potentised and tried out immediately in the shortest possible time. Those that show promising results can be tested further, while those that show no effects can be discarded immediately. In this way, a range of specific remedies for specific weeds can be developed, making treatment more individualised and thus also more effective.

L. Where do we go now - weed management?

Cover crops can provide effective weed control, whether allelopathic or not. Choose vigorous species and varieties for maximum weed control, but remember timeliness of establishment is vital, especially for winter cover crops.

Cash crops vary in their weed-suppressing abilities. Choose strongly suppressive crops such as potatoes and oats in the rotation to balance weakly suppressive ones such as leeks and carrots.

Crop varieties vary slightly in their weed suppressing ability: be aware of this and make use of it where appropriate. When using a crop, especially a green manure, which may be alleopathic, leave a gap after incorporation before planting the next, especially with small seeded crops.[2]

While such cultivation measures have their use, they are often only viable for

home gardeners, or large-scale farmers, who have the option to rotate crops. A tomato grower will need something different from the grower who grows potatoes one year and beans the next. With homeopathic remedies to do the work without the drawbacks, even for the monoculture farmer who grows the same crop year after year, the same crop can benefit, without having to worry too much.

M. Where do we go now - research?

Research is ongoing to identify allelopathic effects and to identify the genes responsible for allelopathy. In time this should lead to recommendations for using allelopathy in weed management and to breeding for varieties with stronger allelopathic properties. In this project we are collecting information on allelopathy and hope to be able to at least provide guidance on which crops and varieties are likely to be allelopathic, and against which weeds.[2]

N. Current results

Examples of allelopathy from published research

Allelopathic plant impact

Rows of black walnut interplanted with corn in an alley cropping system reduced corn yield attributed to production of juglone, an allelopathic compound from black walnut, found 4.25 meters from trees.

Rows of leucaena interplanted with crops in an alley cropping system reduced the yield of wheat and turmeric but increased the yield of maize and rice.

Lantana, a perennial woody weed pest in Florida citrus: Lantana roots and shoots incorporated into soil reduced germination and growth of milkweed vine, another weed.

Sour orange, a widely used citrus rootstock in the past, now avoided because of susceptibility to citrus tristeza virus:

Leaf extracts and volatile compounds inhibited seed germination and root growth of pigweed, bermudagrass and lambsquarters.

Red maple, swamp chestnut oak, sweet bay, and red cedar: Preliminary reports indicate that wood extracts inhibit lettuce seed as much as or more than black walnut extracts.

Eucalyptus and neem trees: A spatial allelopathic relationship if wheat was grown within 5 m.

Chaste tree or box elder leachates retarded the growth of pangolagrass, a pasture grass, but stimulated the growth of bluestem, another grass species.

Dried mango leaf powder completely inhibited sprouting of purple nutsedge tubers.

Ailanthone, isolated from the Tree of Heaven, has been reported to possess non-selective post-emergence herbicidal activity similar to glyphosate and paraquat.

Rye and wheat: Allelopathic suppression of weeds when used as cover crops or when crop residues are retained as mulch.

Broccoli, Brassica spp.: Broccoli residue interferes with growth of other cruciferous crops that follow.

(Orhan Ozcatal)$_3$

O. How do I spot allelopathy?

Some plants have allelopathic properties; they exude chemical compounds that can affect surrounding plants, normally by inhibiting weed seed germination or vigour. These compounds are released either from the growing plant or when the plant is incorporated and broken down in the soil. Many farmers would like to make the best use of these weed suppressive properties in their rotations.

Allelopathy is an effect on your weeds over and above what you might expect from crop competition alone and refers to the direct or indirect chemical effects of one plant on the germination, growth, or development of neighbouring plants. This effect is exerted through the release of allelochemicals while the plant is growing or from plant residues after it dies. These chemicals can be released from around the germinating seed, in exudates from plant roots, and in volatile emissions or leachates from aerial parts. Practically, allelopathy could be used to manipulate the crop-weed balance by increasing the toxicity of the crop plants to weeds or reducing weed germination in the direct area of the crop. Alternatively, a mulched residue of an allelopathic cover crop could prevent weed germination.

We are carrying out a survey with the aim of collecting anecdotal information from farmers who have observed allelopathic suppressive effects on weeds in their rotations. At the same time researchers will

undertake a thorough literature review of research work done on the allelopathic effects of plants. We would hope to match the two types of information and in future seasons suggest trials that people might like to carry out to verify any promising-looking effects.

So, in your rotations, are there some crops that seem to be suppressing weeds more than you expected? Remember to include green manures or other fertility-building crops in your considerations. Observe an area of crop and compare it with a similar area without the crop. Is it cleaner than you might expect? In your rotation are there some combinations of crops where you seem to have fewer weed problems? Which crops, or combinations of crops are particularly weed free?

Current results: Crops in which allelopathic effects have been noted include:

- *Spring oats*
- *Rye*
- *Triticale*
- *Trefoils (green manures)*

Information required or research suggestions:

- *clarify and list crops that suppress weeds*
- *investigate if there is a variety effect*
- *levels of allelopathic effect*
- *resistant crops i.e. suitability of two crops that both exhibit allelopathic traits*
- *what green manures are best for weed control?*
- *what about the opposite effect - some crops seeming to encourage certain types of weeds?* [3]

A large part of this Chapter consists of information from secondary sources on the topic of allelopathy. The footnotes in the text refer to the following sources:

1 http://csip.cornell.edu/Projects/CEIRP/AR/Allelopathy.htm

2 http://www.organicgardening.org.uk/organicweeds/downloads/allelo.pdf

3 http://www.organicgardening.org.uk/organicweeds/farmer_trials/show_pr id=7

14. Weed Remedies

Athyrium filix-femina

Athyrium filix femina.

General

Subalpine spruce (*Picea abies*) forests are characterised by deficient natural regeneration. Although severe parasitism of the seeds exists, this factor cannot alone explain the regeneration failure of spruce stands in the Alps. Allelopathic phenomena inhibiting natural regeneration of spruce were investigated in both in situ and in vitro studies.

In vitro spruce germination and mycorrhizal fungi growth tests were carried out with *Vaccinium myrtillus*, *Athyrium filix-femina* and *Picea abies* aqueous leaf extracts and humic solutions. The greatest inhibition was achieved with *A. filix-femina* foliar extracts and its humic solution. Analysis of foliar material identified four phenolic acids synthesised by spruce needles and leaves of the two common understory species.

These compounds were also found in humic solution at 10^{-5} molar and were then selected for a second identical series of *in vitro* bioassays. This gave a specific way of determining phytotoxicity of phenolic molecules. Interference of these phenolic acids on metabolism mechanisms was explained using a polarographic oxygen electrode: these compounds seem to act as uncouplers. *In situ* experimental seedlings, with and without humic solutions, concluded this work. It confirmed the laboratory results.

From these results we can learn that *Athyrium* will be effective as a weed remover, since it will inhibit the germination of the seeds. When such is the case, it follows that weeds have little chance, especially when the crop is allowed unrestricted growth.

Homeopathic potencies do not leave residues, since UV light destroys the remedy within 24 hours and those parts that have been taken up by plants are not available for anything else. Therefore, any crop sown after the use of the remedy will germinate and grow, unhindered by competition with weeds.

Foeniculum sativum

Fennel. *Foeniculum vulgare*. NO *Umbelliferae*. Trituration of the fresh root.

A. General

Foeniculum sativum contains a substance in its roots which prevents other plants growing there. In this capacity it can be used on weeds, **but only**

where you do not want to grow other plants immediately afterwards.
You must take this precaution since *Foeniculum* may have a longer action than you anticipate. One can use an extract made by boiling the roots, but the chance of more permanent inhibition is real and we therefore do not recommend its use in its crude form.
In potency, such drawbacks are non-existent, although it may act longer than 24 hours. Therefore it is advisable to wait, depending on weather conditions. Sunny conditions allow re-sowing in 48 hours. Rainy and very cloudy conditions require up to seven days before sowing or planting a crop in the treated area.
We advise using these “withholding periods” because this has not been tested sufficiently on all crops. So far, we have only tried it out on a few weeds and simply waited with replanting till we were absolutely certain that the remedy's action had subsided.
We know from its natural occurrence that other plants refuse to grow for an extended period of time – even up to several years. We can therefore anticipate that the remedy could have an extended period of action. Generally the effects of the crude form are enhanced in potency, but since UV light destroys the remedy, we see that its action does not extend over one week.

Ruta graveolens

Rue. *Ruta graveolens*. *Rutaceae*. Tincture of the entire plant.

A. General

Rue has a similar property to fennel, in that it contains a substance which is not liked by other plants. In a garden with rue, few other plants like to grow in its neighbourhood, either wild or cultivated. Flies have a distinct dislike for the smell of rue. Since in nature pheromones play an important role, the speculation that pheromones may hinder the germination of seeds is not at all far-fetched.
It is another allelopathic remedy, of which we have collected everything known to date. We have included the chemical pathways along which the remedy works according to mechan-istic science. These show the inhibitory effects and identify the concomitant chemicals involved.
As with *Foen*., it must be allowed to break down completely, so that other plants, such as crops, can be safely sown. We advise at least a week fallowing before planting new seeds or plants, depending on the weather conditions. Sunny weather allows for 48 hours between use and replanting. Cloudy

conditions require four days to one week, depending on the density of the cloud cover. As with all weed killers, double doses in short succession – evening and morning after – are compulsory to achieve the desired results.

B. Clinical

Insect repellant on animals as well as in and around the house in tincture form. Weeds. For weeds use the 6X potency.

Silicea

Silicea. *Silicea terra*. Silex. Silicon dioxide. SiO_2. Trituration of pure precipitated silica.

A. General

Outside homeopathy, *Silicea* as a remedy for internal use is unknown. Hahnemann, the founder of homeopathy as we know it today, introduced it into medicine. Through his method of attenuating insoluble substances, its medicinal powers have been liberated and revealed. A large proportion of the earth's crust is composed of silica. Sea sand (*Silica marina*) is mostly composed of it. Silicea is taken up by plants and is deposited on the interior of the stems as well as forming the sheath or bark that holds the plant upright. "Want of grit" is the leading indication for *Sil*.

Another feature of *Sil*. is its capacity to set up premature or excessive flowering. This opens up possibilities as a herbicide, as it prevents seed formation in annual and biennial weeds. Here it must be used twice in two days. This use we deducted from Steiner's warning that spraying B501, a *Silicea* product, twice would rob the fruit-grower of his harvest, since then all energy would be wasted in flowering. While this may be very beautiful and also useless in the growing of crops, it teaches us an important other lesson: we can force weeds to spend their energy in flowering, as soon as they start. To prevent weeds coming up or causing problems in broadacre, spray *Sil*. twice in two days, to prevent seed forming, then sow the crop with the last application.

This gives the seeds an extra boost and produces strong plants, which due to a harder and tougher epidermis are less attractive to pests or diseases.

B. Clinical

Dieback. Premature flowering, herbicide, germination aid, general tonic, transplant shock, soil remedy, weak straggly plants, puny growth, bark and sheath diseases, chlorosis, aphids, bud worm, citrus mite, dried fruit beetle.

Weeds.
Can be used as a herbicide, soil improver and to support germination.

Tingis cardui

Tingis cardui. Spear thistle lace bug. Order: *Hemiptera*. Trituration of the live insect.

A. General

Most lace bugs are pests, and they can devastate our crops. However, some of them are very useful in the control of weeds. This species lives off thistles. Since the Law of Similars is applicable everywhere, the use of this bug in potency will eradicate thistles at least as well as, but in general more effectively than, the living insect. The dose is very small and so it also avoids the build-up of resistance, which is dose-related, as we have extensively explained in Chapters 3 and 13 of this work.

B. Clinical

Thistles.

Vaccinium myrtillus

Bilberry. *Vaccinium myrtillus*. Heather family (*Ericaceae*).

General

Vaccinium myrtillus is a fungus which inhibits subalpine spruce, comparable to *Athyrium filix-femina*. Of the two, A*thyrium filix-femina* is the stronger, but in potency the difference is small. From its effect on subalpine spruce, it was easy to extrapolate its use as a general weed remedy. While to the superficial observer it may seem unjustifiable to suggest its use on other weeds, the considerations of the Law of Similars assign more power to the potency than to the crude substance.

Therefore, *Vaccinium myrtillus* in potency is actually better and stronger, with a wider range of action. Naturally, it must be used at least 24 hours before sowing the final crop, to allow UV light to break down the remedy exposed to light. There is no danger of inhibitory properties affecting the seeds of the crop, so it can be safely sown.

Publisher's Note

The author’s ideas on weed control are currently being tested by several people. You can read their reports in our forum at .narayana-publishers.com.

15. The Repertory

The materia medica is still small compared to what is needed for effective diagnosis of plant diseases. It is possible that, in its present stage, you could even remember it all. However, as has already been done with the immense volume of information on humans, it makes sense to create a structured index, called a repertory.

In order to find the remedy for a problematic situation, note the position of any presenting symptom on the plant, that is, on the fruits the flowers, leaves, stem or the roots. Note the type of symptom, that is, the damage in the form of blotches, spots, flecks, chlorosis, pest, either stationary, moving, larva, or other instar, and whether it has wings, etc.

Record any events in the plant's history which seems relevant, such as an injury from which it has never really recovered.

Finally, make a note of the concomittants and modalities - that is, what happened at the same time as the symptoms and whether the plants are worse or better at any particular time of day, in any particular temperature, or with any particular weather pattern.

All these presenting symptoms can then be checked against the repertory, and from this certain remedies are likely to figure again and again. The most prominent remedies should then be studied in the materia medica and the appropriate remedy, or simillimum, selected and administered.

Remedies are shown in this work in plain type, in italics and in bold face. The bold type remedies have been found to assist the relevant “rubric” or symptom consistently, the italic ones regularly and the plain type ones occasionally.

The repertory follows the same tried and tested format as for humans. It is helpful to find as many symptoms as possible, especially those that are strange, rare or peculiar. If some symptoms are particular to one remedy only, they are graded as most important and are the indicative symptoms or keynotes. The more keynotes obtained, the easier it is to find the appropriate remedy.

Visible symptoms always take precedence over lab reports or microscopic evidence, as in many instances the lab reports and other evidence may be hard to come by, or when the symptoms set in with great speed and time is of the utmost importance.

Capillary

congestion: Acon., Samb., **Sulph.**, Trom.
disturbed: Sulph., Urea
engorged: Am-c., Am-m., Zinc.
sap decomposes: Am-m., Sulph.
sap lost: Am-c., Arn., Bell.

Cause

bacterial: **Nat-sal., Sal-ac.**
disease: Acet-ac., **Acon.,** Am-c., **Bell.,** *Cit-ac.*, Ferr-m., Ferr-p., Nat-c., *Ox-ac*.
fertiliser: **Am-c., Nit-ac., Kali-n.**
fungal: Berb., Bov., **Carb-v.,** Equis., Sil.
heavy metal poisoning: Sulph.
herbicide: Sulph.
injury: **Arn., Calen.,** Carb-v., **Cham.,** Ferr-p., Sil.
  fire: Acon., Bell., Canth., Caps., **Carb-v.,** Ferr-m., Ferr-p., **Nat-sal., Sal-ac.,** Sulph.
  insect: **Acon.,** *All-c.*, *Am-c.*, *Aran.*, **Bell., Bomb-pr., Cocci-s.,** Chrysop., Ferr-s., Hyssop., Kali-n., Kali-ma., Menth., Nat-sal., Oci-b., Ric., **Ruta,** Sal-ac., Salv., Samb., Sat-h., Syrph., **Tanac., Teucr.,** Thuj, Trop., Valer.
  mechanical: Acon., **Arn., Calen., Carb-v.,** Ferr-m., Ferr-p.
  open wounds and lacerations: Calen.
    nematodes: Calen.
    grafts/cuttings: Calen., Sil.
    transplants: Calen., Sil.
  storm: **Arn., Calen., Carb-v.,** Ferr-m., Ferr-p., **Nat-sal., Sal-ac.**
  sunburn: Acon., Bell., **Canth., Caps.,** Carb-v.
  wind damage: **Carb-v.,** Nat-s., Sulph.
nematode: **Calen., Tanac., Teucr.,** Trop., Valer.
salination:
  bores: Mag-s., Nat-m.
  fertiliser run-off: Mag-p., Mag-s., Nat-c., Nat-m., Nat-s.
  natural salts: Mag-p., Mag-s., Nat-c., Nat-m., Nat-s.
viral: **Acon.,** Am., **Bell.,** *Canth.*, **Nat-sal., Sal-ac.**
waterlogging:
  drainage: Valer.

salination: Mag-p., Mag-s., Nat-c., Nat-m., Nat-s.

Epidermis

cracks: Calc-p.
dry: Berb., Bov., Equis., Sil., Sulph., Vib.
engorged: Arn., Calen.
eruptions: Sulph.
flabby: Sulph.
foamy: Berb., Carb-v., Cham.
loose: Arn., Calen., Sil., Sulph., Ust.
mouldy: Cham., Coch.
shrivelled: Sulph.
slimy: Berb., Camph., Carb-v., Sulph.
soft: Calc-p.
sunken: Sulph.
with patches: Berb., Sulph.
thin: Calc-p.
wet: Berb., Bov., Equis., Sil.

Flowers

collapse: Calc.
drooping: Kali-c.
dry: Acon., Nat-c.
hot: Acon.
petals:
absent: Cupr., Ferr-s., Kali-c., Nat-c.
discoloured: Kali-c.
malformed: Bov., Cupr., Ferr-s., Kali-c., Nat-c., Teucr.
pale: Sulph.
premature: Am-c., Bov., Calc., Nat-c., Sil., Sulph., Valer.
secretion, slimy: Am-m.
shortlasting: Calc.
shrivelled: Bov., Cupr., Ferr-s., Kali-c., Nat-c.
small: Sil., Valer.,

Fruits

absent: Calc., Ferr-m., Ferr-s., Sulph.
diminished: Am-c., Berb., Calc., Ferr-m., Ferr-s., Kali-c., Zinc.
fall early: Bell., Calc., Sil., Vib.

red fruits look pale: Bell.
ripening, slow: Calc., Sil.
rotting: Ferr-p., Ferr-s., Calc-p.
  avocados: Calc-f.
  brown rot: All-c.
  with blossom end rot: Ferr-s., Oci-b.
    with caterpillars: Ferr-s.
    with maggots: Ferr-s.
set:
  poor: Camph., Ruta, Sil., Teucr.
  failure: Calc.
  slow: Acon.
skin, soft: Calc-p.
small: Bell., Calc., Calc-p.
spongy: Calc.
unhealthy: Calc., Ferr-m., Ferr-s.

General

brittle: Calc-p.
congestion, of single parts: Sulph.
deformed:
  engorged: Arn., Calc., Calen.
discolouration:
  black: Arn., Calen.
  blue: Arn., Calen., **Nat-sal., Sal-ac.**
  brown: Calc-p.
  light green: Arn., Calen.
  orange: **Acon., Am-c.,** Berb., Kali-m.
  pink: Sulph.
  purple: **Nat-sal.,** *Nit-ac*., **Sal-ac.,** Sulph.
  red: **Acon., Am-c., Bell.,** Berb., *Canth*., **Carb-v.,** Cham. Sulph.
  white: Sulph.
  yellow: **Acon., Am-c.,** Arn., **Bell.,** Berb., *Canth*., Kali-m., Sulph.
shrivelled: Equis., Sil.
  with:
    bacterial disease: Ferr-m., **Nat-sal., Sal-ac.**
    capillary paralysis: Acon., Arn., Ferr-m., Ferr-p.

fungal disease: **Acon., Am-c., Bell.,** Berb., *Canth*., **Equis**., Phos., **Sil.**
nematodes: *Calen*., Carb-v., **Tanac., Teucr.**, Trop.,Valer.
pest activity: Acon., All-c., Am-c., Aran., Bell., **Bomb-pr., Chrysop., Cocci-s.,** Hyssop., Kali-c., Menth., Nat-s., **Nat-sal.,** Oci-b., Ric., **Ruta, Sal-ac.,** Salv., Samb., Sat-h., Sil., **Syrph.,** Tanac., **Teucr.,** Thuj. Trop.

straggly: Calc-p., Sil., Sulph.
thrive, faliure to: Calc., Sil., Sulph., Valer.

Generative

ovaries:
immature: Berb., Bov., Cupr., Ferr-s., Kali-c., Nat-c.
shrivelled: Bov., Kali-c., Nat-c., Vib.
sterility: Am-c., Bov., Nat-c., Zinc.
pollination: Ferr-m., Nat-c.
absent: Am-c., Berb., Bov., Cupr., Ferr-s., Kali-c., Nat-c.
at night: Camph.
defective: Bov., Cupr., Ferr-s., Kali-c., Nat-c., Sulph.
excessive: Acon., Am-c., Calc-p., Ferr-m., Ruta
impaired: Bov., Cupr., Ferr-s., Kali-c., Nat-c., Sil.
premature: Zinc.
stamen:
excessive: Ferr-m.
immature: Bov., Cupr., Ferr-s., Kali-c., Nat-c., Sil.
long: Calc-p.
shrivelled: Berb., Bov., Cupr., Kali-c., Nat-c.

Leaves

blistering: Bell.
burn: Bell.
chalky look: Calc.
discolouration:
after injury: Arn.
purple: Bell.
yellow: Zinc.
chlorosis: Acet-ac., Am-c., Calc., Sil., Sulph., Urea, Zinc.
interveinal:
crimson pink: Bell.

pink: Calc., Sulph.
red: Bell.
yellow-brown with green edges and veins: Calc.
yellow-orange or pale yellow: Acon.
margins:
red: Zinc.
yellow: Calc-p.
mottling: Calc.
purple: Sulph.
yellow: Calc.
tips:
orange: Zinc.
red: Acon.
droopy: All-c.
dry: Calc-p.
evaporation:
deficient: **Acet-ac.**, *Acon.*, All-c., Am-c., Cit-ac., Ox-ac.
night: Samb.
excessive: **Acet-ac.,** *Berb.***, Cit-ac., Ox-ac**., Valer., Vib.
day: Samb.
impaired: **Acet-ac.**, Acon., Am-c., Bell., Cit-ac., Ox-ac., Trom.
fall early: Am-c., Bell.
hard: Sil.
leathery: Calc-p.
photosynthesis, impaired: **Acet-ac.,** All-c., *Am-c.*, *Am-m.*, Berb., **Camph., Cit-ac., Nat-sal., Ox-ac., Sal-ac.,** *Sulph.*, *Trom.*, *Urea*, *Valer.*, Vib.
respiration, deficient: **Acet-ac., Am-c.,** *Berb.*, **Camph., Cit-ac., Ox-ac.,** *Trom.*
rolled: Calc-p.
rust:
both sides of leaf: Am-c.
oval pustules: Am-c.
spots: Trom.
red: Sil.
swellings: Bell., Calc.
broad shiny: Acon.

hard red: Acon., Arn.
unfurl, fail to: Bell.
wilting: Calc.
after transplanting: Arn., Calen.
rapid: Acon.
slow: Camph.
wrinkled: Calc-p.

Modalities

better:
warmth: Am-c.
wind: Valer.
speed, rapid: Acon., Bell.
worse:
light: Acon., Bell.
manuring: Trom.
night: Sulph.
watering: Acon., Trom.
weather:
cloudy: Zinc.
cold air: Am-c., Am-m., Calc., Calc-p., Camph., Trom.
cold dry nights: Acon.
heat: Sulph.
stormy: Am-c.
warm to cold: Bell.
wet: Am-c., Am-m., Calc-p., Camph., *Sulph*., Zinc.
windy: Bell., Sulph.

Named Diseases

anthracnose: *Arn*., Bell., Calc., *Calen*., **Carb-v., Nat-sal.,** Oci-b., Phos., **Sal-ac.,** Sat-h.
bitter pit: Calc.
blight : Nat-m., Nat-p., Phos., Sulph.
early: All-c., Kali-ma., Mang., Sulph.
halo: Nat-m., Nat-p., Phos., Sat-h., Sulph.
late: All-c., Sulph.
with:
bacterium: Ferr-m., Ferr-p., Hyssop., Lac-ac., **Nat-sal.,** Oci-b., Phos.,

Sal-ac., Sat-h., Sulph.
fungus: Equis., Sil.
nematode: Calc-f., Calc-p., **Calen.,** Carb-v., **Tanac., Teucr.,** Trop., Valer.
virus: **Acon., Bell.,** Kali-m., **Nat-sal., Sal-ac.**
blotch: Calc-f., Calc-p., Mag-s., Mang., Nat-c., *Nit-ac*., Phos., Sulph.
curly top: *Thuj*.
damping off: Calc., **Carb-v.,** Cham., Mag-c., Mag-s.
glume: Ferr-s., Mang., Nat-c., *Nit-ac*., Phos., Sulph.
septoria: Ferr-s., Mang., Nat-c., *Nit-ac*., Phos., Sulph.
dieback: Equis., Sil., Ust.
ergot: Kali-s., Nat-s., **Sec.,** Ust.
early stage: Am-m.
gall: Sulph., Thuj.,
crown: Sulph.
root: Sulph.
gangrene: All-c., Lap-a, **Nat-sal., Sal-ac.**, Sil., Sulph.
leather leaf: Sulph.
mildew: Calc-p., Equis., Ferr-s., Kali-m., Kali-ma., Lac-ac., Mag-s., Mang., *Nit-ac*., Sil., Sulph.
powdery: All-c., Equis., Ferr-s., Kali-m., Kali-ma., Lac-ac., Mag-s., *Nit-ac*., Sil., Sulph.
downy: All-c., Calc-p., Ferr-s., Kali-m., Kali-ma., Lac-ac., Mag-s., *Nit-ac*., Sulph.
mould: Equis., Ferr-s., Kali-m., Mang., **Nat-sal., Sal-ac.,** Sil., Sulph., Valer.
wet: Bov., **Nat-sal., Sal-ac.,** Sulph.
grey: Ferr-s., Kali-m., Sulph.
slimy: Valer.
sooty: Calc-p.
black: Ferr-s., Sulph., Valer.
dry: Bov., Equis., **Nat-sal.,** Mang., Sil., Sulph., Valer.
oedema: Berb., Sil.
Pseudomonas/Phytophthora: All-c., Ferr-m., Ferr-p., Hyssop., Mang., Phos., Sulph.
rot: Berb., Bov., **Carb-v.,** Equis., Hyssop., Phos., Sil., Sulph.
armillaria root: Phos.

bacterial, soft: Hyssop., Lac-ac., Nat-p., Phos., Sulph.
bitter rot: Lap-a.
black: Lac-ac., Lap-a.
blossom end: Lap-a
brown: All-c., Coch., Phos., Sulph.
dry: Berb., Bov., **Carb-v.,** Coc-c., Equis., Lac-ac., Phos., Sil., Sulph.
Phytophthora:
collar: Nat-p., Phos., Sulph.
crown: Kali-m., Sulph.
root: Phos.
soft: Lac-ac., Phos., Sulph.
stem: Am-m., Calc-f., Calc-p., Sulph.
wet: Am-m., Berb., Bov., **Carb-v.,** Equis., Sil., Sulph.
engorged: Berb.
foamy: **Nat-sal., Sal-ac.,** Sulph.
slimy: Equis., **Nat-sal.,** Sil., Sulph.
with patches: **Nat-sal., Sal-ac.,** Sil., Sulph.
shrivelled: Equis., **Nat-sal.,** Sil., Sulph.
rust (Puccinia): Sulph., Valer.
banana: **Acon., Bell.,** Canth.
bean: **Acon., Bell.,** Canth., Sat-h.
chrysanthemum: **Acon.,** Am-c., **Bell.,** Canth.
iris: **Acon., Bell.,** Canth.
leaf: **Acon., Am-c., Bell.,** Berb., *Canth*., Ferr-m., *Ferr-p*., Nat-s., *Phos*., Sat-h., Sulph.
snapdragon: **Acon., Bell.**
poplar: **Acon., Bell.**
pelargonium: **Acon.,** Am-c., **Bell.,** Canth.
marigold: **Acon., Bell.**
rose: **Acon., Bell.**
stem: **Acon.,** Am-c., **Bell.,** Berb., Canth., Ferr-m., Nat-s., Sat-h., Sulph.
stripe: **Acon.,** Am-c., **Bell.,** Berb., Canth., Ferr-m., Nat-s., Sulph.
scab:
apple: All-c., Zinc.
citrus: Zinc.
head: Ust., Zinc.

potato: Ust., Zinc.
powdery: All-c., Zinc.
rhizoctonia: Zinc.
scald: Nat-m., Oci-b., Phos.
violet: Zinc.
smut:
flag: Ust.
bunt: Ust.
spot:
black: Ferr-m., Ferr-p., *Nit-ac*., Sat-h., Sulph.
brown: Sat-h.
eye: Nat-c., Sulph.
halo: Nat-s., **Samb.,** Sulph.
leafspot: Sat-h.
angular: Sat-h.
stripe:
black: Nat-s., Sulph.
bacterial: Ferr-m., Ferr-p., **Nat-sal., Sal-ac.**
halo: Phos.
rust: **Acon.,** Am-c., **Bell.,** *Canth*.
take-all: Mang.
virus:
alfalfa virus: **Nat-sal., Sal-ac.**
barley yellow dwarf: **Acon., Bell.,** Kali-m., **Nat-sal., Sal-ac.**
mosaic: Lac-ac., Lap-a, **Nat-sal., Sal-ac.**
potato virus: **Nat-sal., Sal-ac.**
spotted wilt: Oci-b., Sat-h.
tobacco mosaic virus: Lac-ac., Lap-a, **Nat-sal.,** Oci-b., **Sal-ac.**
wilt:
fusarium wilt: Oci-b., Sat-h.
spotted wilt: Oci-b., Sat-h.
windrowing: **Carb-v.,** Mag-c., Nat-c.

Nutrients

crave: All-c.
nutrient deficiency:
ammonium: Am-c., Kali-n.

boron: Bor.
calcium: **Ferr., Mag., Mang., Phos., Sulph., Zinc.**
carbon: **Sil.**
copper: **Ferr., Moly., Phos.,** *Sil.*, **Sulph., Zinc.**
iron: **Cupr., Kali., Mang., Phos., Zinc**.
magnesium: **Calc., Kali., Nat., Phos., Sulph.**
manganese: **Calc., Ferr., Kali., Mag., Phos.**
molybdenum: *Am-c.*, **Cupr.**, *Kali-n.*, *Nit-ac.*, **Phos., Sulph.**
natrium: Sulph.
nitrogen: Moly.
phosphorus: **Alum., Calc., Ferr.,** *Kali-n.*, **Mag., Mang., Nat-m., Zinc.**
potassium: **Ferr., Mang., Nat-m.,** Sulph.
silica: **Carb-v.**
sulphur: **Calc., Cupr.,** Kali-n., **Moly., Zinc.**
zinc: **Ferr., Calc., Cupr., Phos**., **Zinc.**

nutrient excess:
boron: Bor.
calcium: **Ferr., Mag., Mang., Phos., Sulph., Zinc.**
carbon: **Sil.**
copper: **Ferr., Moly., Phos.,** *Sil.*, **Sulph., Zinc.**
iron: **Cupr., Kali., Mang., Phos., Zinc.**
magnesium: **Calc., Kali., Nat., Phos., Sulph.**
manganese: **Calc., Ferr., Kali., Mag., Phos.**
molybdenum: *Am-c.*, **Cupr.,** *Kali-n., Nit-ac.*, **Phos., Sulph.**
nitrogen: Calc., *Moly.*
phosphorus: **Alum., Calc., Ferr., Mag., Mang., Nat-m., Zinc.**
potassium: **Ferr., Mang., Nat-m.**
silica: **Carb-v.**
sulphur: **Calc., Cupr., Moly., Zinc.**
zinc: **Calc., Cupr., Ferr., Phos., Zinc.**

poor uptake: **All-c.,** Sil., Sulph., Trom., Vib.

Pests

ants: **Calen.,** Camph., Menth., **Tanac., Teucr.**
white: Camph.

aphids: All-c., Am-c., Chrysop., **Cocci-s**., Menth., Nat-c., **Nat-sal.,** Nat-s., Oci-b., Phos., **Sal-ac.,** Salv., Samb., Sil., Syrph., Trop.

with yellow dwarf virus: **Acon., Bell., Nat-sal.,** Oci-b., Phos., **Sal-ac.**
beetles: **Aran.,** Bac-thur., Calen., Canth., Hyssop., Menth., Oci-b., Phos., Sat-h., Sil.,Thuj.
asparagus: Calen.
bean beetle: Sat-h., **Syrph.**
blister beetle: Camph., Canth., **Syrph.**
flea beetle: Hyssop.
fruit: Phos., Sil.
japanese: *Tanac*.
bugs: Aran., Canth., Ferr-m., Hyssop., Kali-c., Kali-ma., Oci-b., Sat-h., Sulph., Thuj., Trop.
acacia spotting bug (Rayieria tumidiceps): Bell.
bronze orange: Camph., Canth.
fruit spotting: Phos., Sulph.
mealy: **Syrph.,** Trop.
squash: **Syrph.,** Trop.
caterpillars: Bac-thur., **Bomb-pr., Cocci-s.,** Hyssop., Menth., Nat-c., Oci-b., Ric., Salv., **Samb.,** Sat-h., Sil., Sulph., **Syrph., Tanac., Teucr.,** *Thuj*., Valer., Vib.
army worms: All-c., *Bomb-pr*., **Samb., Syrph.,** *Tanac*.
budworm: All-c., *Bomb-pr*., **Samb., Sil., Syrph.,** *Tanac*.
cabbage moth: All-c., **Aran.**, Bac-thur., *Bomb-pr*., Hyssop., Salv., **Syrph**.,*Tanac*.
cluster caterpillar: Aran., **Bomb-pr., Samb., Syrph.,** Tanac.
cutworm: All-c., *Bomb-pr*, **Samb., Syrph.,** *Tanac*.
loopers: All-c., *Bomb-pr*., **Syrph.,** *Tanac*.
procession moth: All-c., **Aran., Bomb-pr., Syrph.,** *Tanac*.
spitfire: **Aran., Bomb-pr., Samb., Syrph.**, *Tanac*.
webworm: **Aran., Bomb-pr., Samb., Syrph.,** *Tanac*.
cicada: Kali-ma., Oci-b., **Syrph.**
cockroaches: All-c., Aran., Camph.
crickets: Aran., Hyssop.
flies: All-c., Aran., Bac-thur., **Bomb-pr**, Hyssop., Oci-b., **Ruta**, Salv., Samb. Sat-h., **Syrph., Tanac., Teucr**., Thuj., Trom., Trop.
blow: Trom.
cabbage fly: Bac-thur., Encar., *Tanac., Teucr*.

carrotfly: All-c., Aran., Bac-thur., Encar., Salv.
fruitfly: Oci-b., Phos., Sulph.
onion fly: All-c.
stable: Trom.
whitefly: Bac-thur., Bufo., Encar.
general: Absin., Acon., All-c., Am-c., Aran., Bell., **Bomb-pr.**, Bufo, **Chrysop.**, **Cocci-s.,** Helx-t., Hypo-m., Hyssop., Kali-c., Leuco-p., Menth., **Nat-sal.**, Nat-s., Oci-b., Quas., Ric., Rumin-d., **Ruta, Sal-ac.,** Salv., *Samb*., Sat-h., Sil., **Syrph., Tanac., Teucr.,** Thuj., Trop., Vib.
gnat: Hyssop.
hawk moth: **Aran., Bomb-pr.**, Ric., **Syrph., Tanac.**
katydids: Aran., Hyssop., Oci-b., Sat-h., Thuj.
leafhoppers: Kali-ma., Oci-b., **Syrph**.
leafminers: Oci-b., Sat-h., Thuj.
maggots: Aran., Hyssop., Oci-b., Sat-h., **Syrph.,** Thuj.
mites: **Acon.,** All-c., Ambly., Bell., **Bov., Cocci-s.,** Mag-p., Nat-c., Oci-b., Ric., Salv., Sil., Sulph., Thuj., **Trom**., Valer., Vib.
blister mite: Ambly., **Cocci-s.**, Sulph., Thuj.
citrus mite: Sil.
redlegged mite (Halotydeus destructor): Ambly., **Cocci-s.**, Lac-ac., Oci-b.
rust mite: Acon., Ambly., **Aran.,** Bell., **Bomb-pr.,** Ric., **Syrph.**, Thuj.
spidermite: Ambly., Bov., **Cocci-s.**, Lac-ac., Trom.
tomato: Ambly., **Cocci-s.,** Ocym.,
russet: Ambly., **Cocci-s.**, Oci-b.
two-spotted mite: Cocci-s., Ocym., Sul.,
vinemite: Ambly., Ric., Salv.
mosquitoes: **Cocci-s.**, Oci-b.
moths: Aran., **Bomb-pr.**, *Camph*., Hyssop., Menth., Oci-b., Ric., Salv., **Samb.**, Sat-h., Sil., Sulph., **Tanac., Teucr.**, Thuj., Valer., Vib.
cabbage moth: All-c., **Aran.**, Bomb-pr., Hyssop., **Syrph., Tanac.**
diamondback: **Aran., Bomb-pr., Cocci-s., Samb., Syrph., Tanac.**
fruit moth: Aran., Bomb-pr., Phos., Syrph.
grapevine moth: **Aran., Bomb-pr.**, Ric., **Syrph., Tanac.**
potato moth: **Aran., Bomb-pr., Samb., Syrph., Tanac.**
procession moth: All-c., **Aran., Bomb-pr., Syrph., Tanac.**
nematodes: Calc-f., Calc-p., **Calen.**, Carb-v., Sulph., **Tanac., Teucr.,** Trop.,

Valer., Zinc.
root knot: **Calen.**, Sulph., **Tanac., Teucr.**, Valer., Zinc.
sawfly: All-c., Aran., **Bomb-pr.,** Hyssop., Oci-b., Salv., **Samb.,** Sat-h., Sil., **Syrph., Tanac.,** Thuj., Valer., Vib.
sawfly larvae: All-c., Aran., **Bomb-pr., Syrph.,** Tanac.
scales: All-c., **Cocci-s., Cocc-c., Salv., Shellac,** Thuj.
hard: **Bomb-pr., Coc-c.,** Salv., **Shellac**
honeydew: **Coc-c., Shellac**
soft: **Bomb-pr., Cocci-s**., Salv., **Shellac**
slaters: **Nat-sal., Porce., Sal-ac.**
snails and slugs: Absin., Helx-t., Hypo-m., Kali-ma., Leuco-p., Quas., Rumin-d.
termites: **Camph.**
thrips: Acon., All-c., **Aran.,** Bell., Calc., Hyssop., Kali-s., Nat-s., *Oci-b*., Phos., Sat-h., **Syrph.,** *Thuj*., *Valer*.
banana rust thrips: Am-c., Bell., Valer.
bean blossom thrips: **Acon.,** Valer.
vermin: All-c.
wasps: **Aran.,** Hyssop., Sat-h., **Syrph.,** Thuj.
weevils: All-c., **Aran.,** Ferr-s., Hyssop., Nat-c., Oci-b., Sat-h., Thuj.
woodworm: **Camph.**

Roots

damaged: Arn.
discolouration:
red: Am-c.
whitish: Valer.
dry: Am-c., Berb., Sulph.
exudate:
frothy: Berb.
viscid: Berb., Camph.
lumpy: Zinc.
mouldy: Trom.
pale: Vib.
red: Berb.
short and brown: Calc.
slimy: Camph., Sil., Sulph.

smell:
  bad: All-c.
  putrid: Bov.
swelling: Am-c.
vesicles: Am-c., Sulph., Valer., Zinc.
white: Berb., Valer.

Seed

absent: Calc., Sil., Sulph.
seed bath: Sil.
spongy: Calc.
sterile:
  fruit: Calc.
  grain: Acon.

Stem & Grain

bark, dry and harsh: Calc-f.
chalky look: Calc.
lodging: Am-m., Berb., Calc-p., Camph.
  from waterlogging: Camph.
rot: Calc-p.
  base: Calc-f.
  nodes: Calc-f.
swollen:
  base: Calc-p.
  nodes: Calc-f.
  oedematous: Samb.
tillering:
  distorted: Calc-f.
  numerous: Calc-f., Calc-p.
  poor: Acon.
  sterile: Calc-p.

Water Requirement

but worse watering: Acon.
increased: All-c., Am-c., Am-m., Berb., Bov., Calc., Sulph., Valer., Zinc.
  afternoons and evenings: Bov.
reduced: Berb., Calen., Sil.
regularly: Am-c.

Weeds

general: Athyr., Foen., Ruta, Sil., Tingis, Vacc-m.