

STUDY MATERIAL
issued by the
Experimental Circle
of Anthroposophical Farmers and Gardeners

Dr. C.B.J. Lievegode

The Working of the Planets
and the Life Processes
in Man and Earth

July 1951

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The Working of the Planets
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Contributions to the Understanding of the
Working of the Preparations indicated by
Rudolf Steiner for the Treatment of Soil
and Plants.

Broome Farm, Clent, Stourbridge, Worcs.

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This issue of our 'Study Material' (the sixth of the series) represents a new departure inasmuch as it is published in preparation of our Annual Conference, and not as a record of the course which forms the centre of our studies during these days. Such procedure has advantages as well as disadvantages, but the former outweigh the latter.

Dr. Lievegoed expressed the hope that those attending the 1951 Conference of the Experimental Circle of Anthroposophical Farmers and Gardeners should be familiar with the content of this essay published last year by the German Experimental Circle for its Members. The study of this attempt to describe our Preparations against the background of planetary effects will convince the reader that so much is given which requires careful examination that it is as well that we can prepare ourselves for the course to be given by Dr. Lievegoed. We must find ways and means of publishing (possibly as a Supplement) those points which may arise during the discussions. It will be remembered how valuable were the contributions after the lectures by Dr. Hauschka, incorporated in 'The Nature of Substances in Agriculture'.

But quite apart from the occasion of the publication we feel that this essay is a valuable contribution to our literature and will assist us to an ever better understanding of what Rudolf Steiner gave at Koberwith.

We are most grateful to all those who helped making possible this English edition; to Dr. Lievegoed, the author, and to the Editors of the original German edition, for their permission, given so readily; but not less so to Mr Bernard Mansfield who gave most valuable advice and untiring co-operation during the preparation of the English text.

The readers are asked to take to heart the concluding paragraph of the Preface of the Editors of the Original Edition, and to respect their and the author's wishes.

July 1951.

C.A.Mier
Hon. Secretary

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November 1972.

FROM THE PREFACE BY THE
EDITORS OF THE ORIGINAL EDITION.

This publication is meant for those who have acquired a basic knowledge of the bio-dynamic impulse, especially the Agriculture Course by Rudolf Steiner given at Koberwitz from 7th to 16th June 1924. The reader is also expected to be familiar with the making and use of the special Preparations indicated in this Course.

Dr. Lievegoed's essay will prove very stimulating for a better understanding of the Preparations and their application in farm and garden. It is a first and tentative attempt to understand the nature and effect of the Preparations from the aspect of planetary forces, and should prove a basis and starting point of useful discussions among farmers, and also between farmers and doctors. Even if the one or other detail should show itself, in time, one-sided or wrong, this essay deserves careful study.

Dr. Lievegoed has gained experience through his close and practical association for a long time with the gardens of his Curative-Educational Home at Zeist (Holland). In addition he has studied extensively the connection between planetary forces and the human organism. He was able to widen, deepen and test this knowledge in his medical practice. The essay here published is the fruit of all this work. No doubt it owes much to conversations with fellow-workers in the fields of agriculture, science and medicine.

It is hardly necessary to emphasise that the content of this essay must appear quite unintelligible to anyone not familiar with the fundamental works of Anthroposophical Spiritual Science. The intention of the Editors would be misinterpreted if Dr. Lievegoed's statements and suggestions should lead to a too definite and dogmatic association between the different Preparations and the planetary processes, and to the setting up of rigid concepts. This contribution will only prove fruitful if it stimulates our friends to study more closely the working of planetary forces and processes in plants and animals, in soil formation and its life, in meteorology and human physiology. With such more comprehensive knowledge and experience we might then grope our way to an ever better understanding of the way in which the Preparations work.

The Editors most earnestly hope that this publication will not give rise to discussion of the making, use and effect of the Preparations in circles other than those already closely and intimately associated with study and practice of anthroposophical agriculture.

July 1950

Hans Heinze
On behalf of the Editors

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Planetary Effects and Compost Preparations.

In every living organism Physical, Ethereal, Astral and Spiritual forces are active. In the plant, the Physical and Ethereal forces work from within outwards, the Astral forces work around it, and the Spiritual forces from the starry distance, where the archetypes of the plants are found.

It may be advisable, briefly and in simple terms, to call to mind the working of these different forces and to examine their basic principles. By speaking of an organism with its organs - such as the plant - we state already that in addition to life a higher, organ forming, principle is at work. We see in a plant in general, without reference to a specific species, something Physical permeated by the Ethereal, and thus lifted out of the merely Physical sphere. But in that living substance has been formed into organs, into an organism, lets us recognise that this living substance has been formed by an Astral principle.

Quite in general we may say that every organism, in its physical aspect, manifests in a threefold way: in the case of the plant as root, leaf and seed (or flower). From this point of view the threefold organisation is comparable to the physical structure of man, manifesting in head, chest and limbs. The Ethereal forces work in this threefold organism in such a way that the Life Ether is active in the root region (head), the Warmth Ether in the seed (limbs), Light and Chemical Ether in the leaves (Chest). The effects of the Ethereal Formative Forces are always general ones. Never does an organism come into existence merely through Ethereal processes, but only where and when an Astral principle presses its seal upon the Ethereal.

The archetype of the Physical form of an organism is its threefoldness, based upon polarity, with the middle linking rhythmically the two poles. This occurs only in the living organism, whereas in the lifeless organism we find merely an opposition as between the poles of a magnet. The living organism, however, is permeated by an Ethereal element, manifesting in fourfoldness. Dr. Wachsmuth has given a full description of this in his book on the Etheric Formative Forces.

The working of the Astral principle carried into this Physical-Ethereal a streaming, moving activity, manifesting archetypally in a sevenfoldness. The basic principles of Astral activities are the effects of planetary forces. These seven working principles are still something general, unspecified; they merely have the tendency towards the formation of organs in which they manifest, usually reaching their goal in these organs, after they have permeated the whole living organism. The Spiritually working principles gather together the form into a specific (definite) species and are archetypally arranged according to twelve principles, revealing themselves cosmically in the Zodiac. It is only through this Spiritual element that "the plant" becomes a rose or a sage, "the animal" a lion or a wolf, "man" a definite individuality.

In the plant the seed is the carrier, or point of attachment, of the Spiritual forces forming the species. But the seed only unfolds when surrounded by Physical, Ethereal and Astral elements in such a way that these forces can stream freely one into another. This will happen when the seed has been placed into a fertile soil. A comparison may help us to understand this better: a small crystal is sufficient to make the whole of a salt solution crystallise, if it is super-saturated.

A fertile soil is like a super-saturated solution: everything (Physical, Ethereal and Astral) is there waiting to become plant. Once the seed is sown, this wish, this longing to become plant shoots into manifestation. A truly fertile soil longs to become plant and for this to happen all that is needed is contact with the world of the Spiritual archetypes of the plants.

Our bio-dynamic efforts are directed towards preparing the soil in such a way that it wants to become plant. This is possible only where Physical, Ethereal and Astral penetrate one another and reach a 'pre-plant' condition.

We support this process by making compost. The basic substances of compost are decaying plants and animals. Something Physical, Ethereal and Astral is still active in them which had once been linked together into an organism by means of a Spiritual archetype. But the Spiritual link has withdrawn, and the substances are now in a state of decay, and the Physical, Ethereal and Astral elements are tending to disperse. In the composting process we try to capture these dispersing, disintegrating principles and to make them work together once more, so that new Spiritual archetypes can be received. The remnants of the old organs (leaves etc) must disappear, but the Ethereal and Astral principles must remain united with the Physical.

Thus in the compost heap a process is reflected of which Nature gives us the prototype: when the caterpillar has eaten itself full of green leaf material, the point is reached when the higher butterfly principle wants to penetrate. The caterpillar spins a cocoon and passes from head to foot through a process of disintegration during which all forms of organs disappear until a chaos has been established. The new organs of the butterfly are formed from this chaotic universally-alive substance. In the compost heap similar processes take place. The maturing compost heap is like a caterpillar in the chrysalis state, the same chaotisation taking place. In this state of utter chaotisation when the compost has reached maturity, it is placed at the disposal of the seed. As the butterfly comes to manifestation out of the chrysalis, so the plant out of the compost.

But there is one essential difference between this process in the animal and in the plant kingdoms. In the animal the Astral works from within, concentrated in the seven planetary organs, from which the seven Astral forces radiate. In the plant, the Astral works from without, streaming through and from the outside affecting the plant.

If we are to conduct the chaotising process in the compost heap in such a way that the Astral can get hold of the Physical-Ethereal substance harmoniously, we must, so to speak, implant planetary organs into the compost body, from which the planetary processes can radiate through the compost body, astralising it harmoniously.

We can do this by making holes into the compost body and inserting the Preparations. In the following pages we want to discuss how, by means of the insertion of the Preparations 502-507 six planetary forces (from the three outer and the three inner planets) are planted into the compost body. The seventh, a balancing force, will be added after the compost has been brought into the soil by applying Preparations 500 and 501.

It is important that the farmer or the gardener shall be conscious of these processes that he will not take these measures mechanically or dogmatically, and without understanding them. How easily might it happen that for instance the stirring would no longer be performed carefully and might even be omitted altogether. Proper knowledge will arouse new enthusiasm and more careful performance.

If the bio-dynamically working farmer wants to gain a comprehensive knowledge in his own sphere he must also study physiological processes, and it is just here that doctor and farmer ought to meet. The farmer can learn much from the doctor about the processes in the highest organism of nature, in Man. The doctor, on the other hand, can enrich his knowledge beyond measure by trying to understand and practice the craft of the bio-dynamic farmer. Thoughts like these have prompted the writing of the following chapters.

At first we shall study the seven planetary processes, how they work in man, at least as far as such knowledge is useful for the understanding of the effect of the Preparations. Then we shall discuss the Preparations 502-507 and try to understand how there are active in them the planets above and below the Sun (described also as Outer and Inner Planets). Finally we shall deal with the Preparations 500 and 501, and the stirring process.

We must carry out studies beyond the Agriculture Course; in doing so we believe we are acting in accordance with Rudolf Steiner's intentions. This is a daring experiment which is not meant to be taken as anything final, but rather as a first attempt, open to discussion.

The Planetary Processes - 4 -

in Cosmos and in Man.

In describing the following seven planetary Processes it will be assumed that the reader is familiar with the fundamental works on the connections between planets and metals, especially with the experimental work of L. Kolisko.

	<u>Planet</u>		<u>In the sphere of Metals</u>
1.	Saturn	} Planets beyond the Sun	Lead
2.	Jupiter		Tin
3.	Mars		Iron
4.	Sun		Gold
5.	Venus	} Planets nearer than the Sun	Copper
6.	Mercury		Quicksilver
7.	Moon		Silver

This sequence has been chosen because when studying the inner effects we can resolve it into three polarities, with the Sun as the harmonising middle.

First Polarity: 1 - 7 Saturn - Moon
Sun as Middle

Second Polarity: 2 - 6 Jupiter - Mercury
Sun as Middle

Third Polarity: 3 - 5 Mars - Venus
Sun as Middle

Fourth Process: The Sun as Middle by Itself.

These seven planetary processes are seven qualitative worlds, seven qualities, seven principles of activity. To understand them we must enter their life, must live inwardly with their impulses of movement, must get to know them by something like the sense of touch.

S A T U R N

We begin with Saturn, the most distant planet, as seen from the Earth, just as the Moon is the nearest one. Both these planets are like gateways: from the planetary Astrality Saturn leads into the world of Spiritually active stars, the Moon into the Ether spheres close to the Earth. - Where the Spirit wants to impress its seal right into substance, Saturn must bestow the direction and the strength to incarnate. Out of the heights, Saturn accompanies every process of incarnation, from the cosmic midnight hour through the gateway of birth as far as the first thirty years of human life. This is a sublime process, because with the help of the Saturn forces the Spirit reveals itself even as far as dead matter.

In man the Saturn process works in such a way that it enters the hair vortex at the back of the head, radiating into the dead material of his body, wanting to make man a picture of his individual, Spiritual Ego. From above and behind downwards it radiates through the body, terminating in the skeleton which thus becomes a lifeless image of the Ego. The skeleton is so sublime because it shows us this picture of the Ego. If Saturn were to work by itself, the whole human body would calcify and within thirty years man's body would have turned into a beautiful stalactite.

Saturn, at work already throughout the whole embryonic development, places us as a Spiritual being into the world of space. After the cosmic midnight hour, the human Ego turns towards the Earth with the help of the Saturn forces and while completing the painful path towards incarnation, all the time becomes denser. During the embryonic life and in early childhood Saturn crystallises the skeleton out of the watery organism. Saturn works as a differentiating force within warmth, the most Spiritual of the elements. Where Saturn rarifies warmth, crystallised substance (bone) comes into existence. Where it densifies, the carrier of the element of warmth, the blood (bone marrow) can be formed. The blood is born in the red marrow of the bones, in the centre of the Physical, almost lifeless skeleton. Having lived for about three weeks it disappears in the spleen. Thus we may call the spleen the consummation of the Saturn process, and in that sense a Saturn organ in which the Saturn process dies.

There are two Saturn processes in Man:

1. The incarnating Saturn process, leading to the dead image in space. We can say: through this first Saturn process man (his Ego) dies in space.
2. The resurrecting Saturn process which enables the Ego, in the blood, to fulfil his karma in the course of time.

Saturn is the planet of death and resurrection. The Ego appears twice in the Saturn process, once as image in space, as skeleton, once as image living in time, in the blood, manifesting as biography.

To summarise all this we can use these two symbols $\downarrow \uparrow$. Saturn leads the Spiritual to the Physical, but in doing so brings death to appearance in the rigid image. Saturn leads the Spiritual out of the Physical in the course of human karma, thereby kindling resurrection, the overcoming of matter through the Spirit. In the plant world we shall meet first and foremost the Primary process, i.e. that of incarnation. Saturn brings to manifestation in the plant the Spiritual archetype of the species. Saturn, the outermost planet, surrounding

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Next we must describe the Moon process, standing opposite to Saturn and manifesting wherever certain qualities continue through a sequence of generations. Moon processes are active in propagation and the stream of heredity, in reproduction, where a new organism rises from an old one, where cell is formed from cell, where cell is linked to cell in steady growth. The Moon is associated with the ever recurring repetition of the same, with the memory of something which had been created before, the ideal of heredity. She is concerned with the sequence of generations streaming horizontally across the Earth, continuing its existence in time. Moon forces are active wherever we meet swelling growth: in the individual organism through cell division, in separate organisms through propagation.

If Moon forces alone were active in Man, he would roll through the world like a soft sphere of albumen and the growth forces would continue without end. But in Man this Moon process finds its limit in the skin, outside which it ceases to be effective. In front, below, in the region of the bladder, the Moon forces radiate into the reproductive organs and permeate the whole organism from within outwards, as far as the skin.

Whereas the Saturn process is the bearer of the individual Spiritual forces and manifests in the skeleton, the Moon process is bearer of the type principle, of heredity, and becomes visible in the skin. (It is significant how heredity expresses itself just in the colour of the skin.) Human beings with strong Moon forces have a beautiful skin and strong sexual attraction. The film star is the ideal of the Moon type of mankind. The skin as 'Moon skeleton' is the image of Heredity-Man.

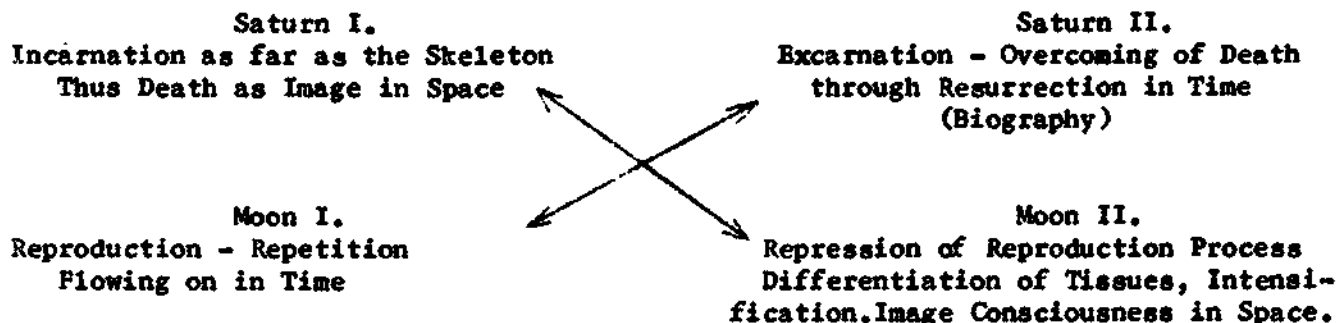
The Moon processes express themselves as differentiating factors within the processes of Life, as those of Saturn in Warmth. During embryonic life, out of the skin the nervous system is differentiated, which is like a skin, placed within as an island. This 'inner skin' is the bearer of a second process: the outer world reflected inwardly through the nervous system, reaches the level of man's consciousness. This 'lifeless reflection' can only take place, when the life processes are dimmed. The brain (a 'skin' island within man) thus becomes a Moon organ, where the Moon forces come to rest. Physiologically this force which can hold back the processes of mere life and cell division expresses itself as one of tissue differentiation. The nervous system is the most differentiated tissue - the organism becomes an image of its Spiritual archetype through the potentialities of differentiation. Goethe called this force in the plant Intensification.

The Moon also shows two aspects: firstly growth promotion in the stream of reproduction and heredity, streaming along in time, linking being to being, resulting in the eternal repetition of the same.

Secondly, by repressing life it assumes the quality of a mirror. The Moon herself reflects Sun light and we use silver for covering our mirrors; and photography is based on the silver's property of preserving the image of the outer world.

In the plant world the Moon effects manifest in the processes of cell division and growth. Limestone acts within the watery element as mediator of the Inner planetary forces. The Oak Bark Preparation 505, consisting almost entirely of organic limestone and prepared in the animal skull (the seat of the brain) and kept under water, is the representative of the Moon processes. Rudolf Steiner says of Preparation 505 that it counteracts plant diseases by suppressing the rampant Ethereal element. One could also say, by setting a limit to the Moon forces (forming a skin).

A deeper study of these processes, of Saturn and Moon weaving one into the other, shows Saturn as the image of the Ego, of what is individualised, placed into space, and how this becoming an image means death from which the human Ego re-surrects by inscribing its image into time in its biography. The Moon, on the other hand, places into the stream of time what is not individualised, the principle of heredity. The human Ego overcomes this sequence of generations by repressing the life processes, and, in reflecting the outer world, awakens.



Saturn - Moon: together they weave through the mysteries of space and time, of death and resurrection, of 'swimming along' in the stream of time and awakening in consciousness.

J U P I T E R.

Jupiter is, in the first place, the great moulder of the world. When Saturn in the sublime forms of the skeleton has created the bare image of the Spirit, Jupiter plastically moulds around this skeleton the semisolid forms in flowing beauty. It is the soul of man which is expressed by these Jupiter forms. The plastic Jupiter forms work from above downwards, rounding, re-creating the celestial sphere in the roundness of the brow. All internal organs are rounded above, sometimes hollowed out below, because the roundness of the organ below presses into it. The balls of joints are placed at the top end of the bone, the sockets at the lower. The Jupiter forces radiate from the brow into the organism, modelling in childhood the beautiful architecture of the brain, forming later on the thoughts, and especially those concerned with bringing order into the great universal connections. Then again working more deeply into the body, they give shape to organs and muscles.

Jupiter moulds internal organs and surfaces of the body in beauty, but at the same time with super-human gestures. If he alone were at work, at fourteen years of age we would be like beautiful Greek statues, expressing in bearing and gesture purely and simply the forces of the soul. We would all be Apollo statues, because the plastic force of Jupiter is the bearer of a sublime and harmonising wisdom. This finds expression in the way in which our organs are formed out of the watery element. But this plastic force in all its wisdom, on reaching consummation, would lead to a general rigidity.

From this rigidity the human Ego frees itself in movement, in features and in gesture. The gesture is plastic soul expression in the element of movement, which is based upon the muscles and they in turn bestow beauty to the surface of the body. In their alternation between hardening and softening, swelling and contracting, they perform a play which in its chemistry is deeply connected with the liver. The muscular contraction is due to chemical changes in surface tension, and wherever these occur, in the plant too, Jupiter forces are at work. The Jupiter activity comes to an end in the liver, the only human organ not permeated by the plastic wisdom-filled Jupiter forces, neither in outer form nor in its chaotic structure within. But precisely on account of this it can be so active chemically.

In the plant the modelling Jupiter forces above all are at work, and only secondarily the changes in surface tension, where Jupiter and Mercury together regulate the stream of the sap.

Among the Preparations Jupiter is represented by the Dandelion Preparation 506. Jupiter's moulding forces are handed on in the plant by the silica, the mineral bearer of the cosmic planetary forces from beyond the Sun. Rudolf Steiner characterises Preparation 506 as the mediator between the silica forces in the cosmos and those surrounding the plant, bestowing health and stability.

M E R C U R Y

Opposite to Jupiter stand the Mercury forces. Where Jupiter gives rise to harmony and order, Mercury creates chaos, though not an ordinary one, but one which we might call a 'sensitive chaos': movement without direction, but ready to flow into anything which might be suggested from outside. Mercury is streaming movement, adapting itself to any resistance it may find, flowing around it to the left or right, just as may be possible and with no inclination of its own, but always remaining in movement. The one thing Mercury never abandons is movement, in this streaming and flowing. What kind of movement results, which direction it takes, that will depend on outer circumstances. Mercury adapts itself but it always streams. In Man it becomes effective and active in the sphere of streaming where there are no definite and fixed paths: in the lymphatic system. The blood vessels have their fixed paths, but the lymphatic streams move where it happens to be possible, as long as they reach their next goal: the lymph glands.

Jupiter is active symmetrically, following sublime cosmic laws, Mercury has a tendency to asymmetry. What is oblique or crooked in the human face, or in the plant, is due to Mercury's interference with Jupiter's intentions. Mercury has a sense of humour, is always ready for a joke, and is pleased if the divine intentions do not always quite come off. Thus the Gods never finish their work, they must go on working, and all remains in a state of flux.

A friend once told me that Jupiter and Mercury reveal their nature in the picture of the king and his jester, the king on his throne orders everything with wisdom, his clothes are draped symmetrically. But at his feet sits the jester, with asymmetrical clothes, half yellow, half red, just as if happens, and he comments on the kingly words and shows that at times the best laid plans can go astray. Mercury is the great realist and can put up with heat and cold, with sun and shade, but, under all circumstances, is concerned that life continues, that the plant grows further. If need be, he can even become dishonest and lead the plant into parasitism. The Greeks made Mercury the God of merchants - and thieves. Both make sure that earthly goods do not remain at one place, but change hands.

But this faculty for adaptation would ultimately lead to utter loss of character; and the Ego avoids this by meeting movement with movement. What happens when two streams meet and mingle? Whirlpools are created and empty spaces, which in the river form sandbanks. Thus we see in the confluence of Mercury forces a second, organ forming principle. The organs taking shape as a result of these meeting, flowing movements are different from those resulting from divine images being impressed upon the Earth.

The plant world reveals most clearly this interplay of these two form principles. If we compare a beech leaf and an oak leaf, we can tell them apart quite easily. But if we pick some hundred leaves from one beech tree, we shall not find two of them quite alike. This tremendous variability of form is an expression of Mercury forces. Every meeting of two active forces is a healing process. But true healing is possible only where the one force (be it the human body, be it the plant) can receive into itself the other force, and something new can result from the meeting.

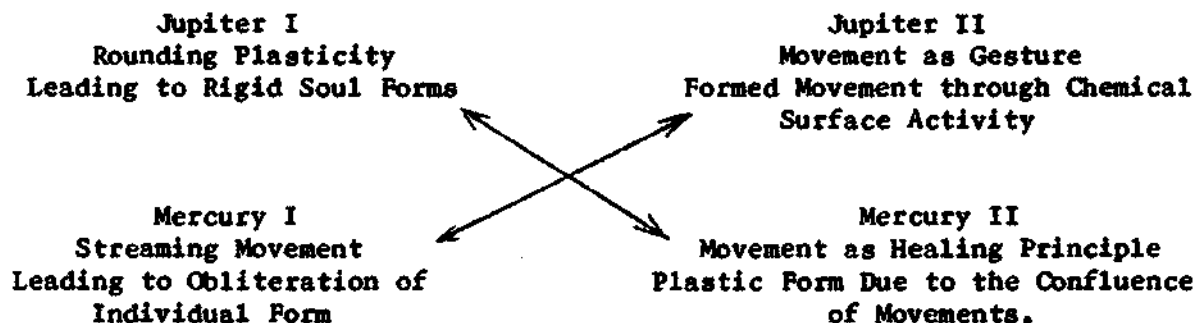
Mercury is active in the Camomile Preparation 503 which stimulates plant growth through potassium and calcium. The treatment with the intestines intensifies the Mercury activity. (With this we shall deal more fully later on.)

Here too Jupiter and Mercury weave one into the other: the preordained and wise form of the organs, on meeting with the confluence of Mercury forces, suffers change according to the particular circumstances. The chemical expansion and contraction give direction to the streaming movement of Mercury (by means of surface tensions). In this interplay we find the key to all the problems of turgor, the state of tension within the tissues.

Jupiter in all his plastic activity comes to rest in the 'muscle-man'; then the activity changes into chemistry and overcomes the plastic rigidity in movement.

In wisdom-filled chemical activity the movement of the muscles sucks at the liver where Jupiter comes to rest chemically. (This is in opposition to the usual concept that the liver sends substances to the muscles. From the aspect of this description it can be understood that the muscles fetch the substances from the liver.) Mercury streaming through the tissues in fluidity and without regularity, arrives finally at a certain contraction in the lymphatic vessels, coming to rest in the glandular activity. The glands (as terminal points of streaming fluidity) are the place where this fluid stream leaves the organism. Fluids stream through the whole body, excepting the inverted air sack which we call the lung. The lung is a gland, but a negative one, it is a hollowing out within the fluid man.

Liver and lung as consummation of Jupiter and Mercury activity, are Jupiter and Mercury organs.



M A R S

Let us now describe the activities of Mars and Venus. Mars, the last of the planets beyond the Sun, is the carrier of movement which is creative but directed towards a goal. Mars represents the force by means of which the Spiritual archetype of the plant pierces through to, penetrates into the Physical, and which also pushes it out again into the world. We see Mars at work wherever the plant in its growing point pushes into space, and in so doing conquers space. Through Mars an inner activity is brought into the world, conquering the world with determination and a sense of direction, revealing its own true nature. Without Mars no plant would exist. Mars forces are at work in the shooting and sprouting of every spring, with all its conquest of space. To get a true imagination of these Mars forces we should picture to ourselves a javelin thrower at the moment in which he is about to throw the javelin and is letting it go. This strength concentrated upon the target, that is pure Mars force.

The Mars forces radiate into Man between his shoulder blades and permeate him in the iron process of the blood. They radiate downwards into the blood, but they also radiate upwards into the speech process. It is Mars force which is being formed in the word streaming from the human mouth. The Mars type, is a man in whom

Mars forces predominate, is outwardly active all the time, but spends himself and is unable to preserve what he has created, because he cannot bear that something should be finished. Rather than care and cultivate, the Mars type destroys what has been created and rebuilds anew. He is carried by a continuous creative urge, and where he meets an obstacle he is consumed by wrath.

The Ego, when wishing to oppose being carried away by all this activity, must summon strong resistance, because Mars does not yield to soft measures. This process of opposition results in the damming up of the directed force, and now something happens which may come as a surprise at first: Where Mars force is dammed up the world begins to sound.

The string of an instrument shows the same phenomenon. The force with which the bow is used, is dammed up by the resistance of the taught string. Force and resistance struggle with each other, and the string begins to sound. Or we take a metal plate covered with fine sand: we strike it with a bow, and sound figures appear indicating that matter arranges itself according to the principles of sound. We meet this harmonising principle again in chemistry, where the order in chemical and organic compounds follows musical laws. Every tone has its own sound figure. The Higher Hierarchies speak into the Ether World, and out of these cosmic harmonies here on Earth substances come into existence according to the order of the chemical elements. This cosmic music starts from the Mars sphere and is passed on to the Earth through the Chemical or Sound Ether. Within the animal and human organism, Mars orders and forms the substances, working from within in the Astral Body. In the plant organism the cosmic Mars brings this about.

The iron forces, active in the hemoglobin of the blood, come to their end in the liver, where out of the red hemoglobin the iron-free green-yellowish gall is formed. The Bilirubin is identical with iron-free hemoglobin and in its formation the iron is held back, it does not enter the gall. Out of this holding back, this damming up, the albumen forming forces, essential for the building up of the human body, are born in the liver like 'sound figures'. This process of protein building in the liver is sounding tone, in which the substances C - H - O - N - S - P are arranged in sound figures. The driving force bringing this about is the activity of Mars being dammed up. In the plant this process is more hidden, but here too Mars plays a part, once in the growing outward, again the forming of protein.

The force of Mars manifests especially in the Stinging Nettle Preparation 504 which harmonises the iron forces in the soil, bestowing true nutritive value on the plant. This in turn is connected with a healthy protein building process, but also with starch formation, inasmuch as every starch granule is surrounded by a delicate protein sheath. We shall deal with this more fully later on.

V E N U S

In contrast to the active Mars processes, the Venus processes are hidden, and we shall truly understand them only by being quite still and listening inwardly. Venus is connected with the deeper nutrition (of the cell), with the deepest building forces of the organism, where the offered substances are received into the life processes to unfold their activities by being taken up by higher principles. Venus is connected with the creation of a 'milieu', with the clearing of space for something else to unfold. We may think of the home of a quiet and modest woman with a significant soul. Here people meet one another in the exchange of ideas and all shyness is cast aside. And if we ask why such social life, so stimulating and fertile, occurs just in this home we must admit that it is due precisely to the quiet personality in the background who perhaps does nothing else but brings coffee just at the right moment and disappears again. Venus has this ability of make room for something else to manifest. As Mars is associated with speaking, so Venus with listening. Goethe calls conversation more precious than the light, because conversation is the harmony between Mars and Venus, in which the one partner is the speaking Mars, the other the listening Venus, changing parts after a while. Where Mars and Venus truly meet, a third element comes into existence, something new can be made manifest.

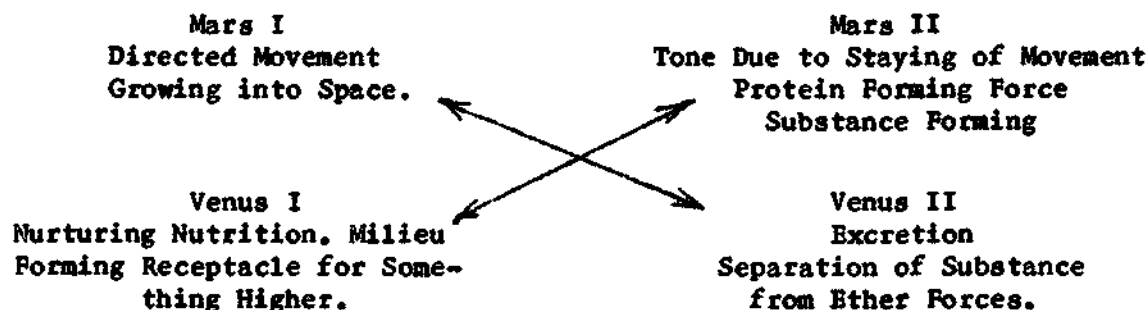
Entirely to become Venus, to make oneself into a vessel to receive something higher, would lead to complete renunciation of the self. The Ego could no longer exist in an absolute Venus attitude. The process must revert into its opposite: the Ego overcomes the building up process by 'sucking away' that which has passed through the life processes, and does so by means of the kidney-bladder system. The destructive and excretory processes exert their sucking forces from kidney and bladder reaching right into the last living cell. The Venus process comes to an end in the kidney, the Venus organ. When in the kidney Ether force and substance are separated, the dead matter is excreted and the Ether forces radiate upwards into the eye, bestowing the force of going forth into the world on the act of seeing. Pathology knows well this secret connection between kidney and eye.

Most beautiful is the cooperation between Mars and Venus in the living organism. Protein, formed through the Mars force, nourishes the cells along the Venus path. The Venus process, coming to an end in the kidney, there produces radiations. These ray upwards and unite with the Mars force with all its determination and direction, to appear again in the eye's force of vision. The force with which the eye faces the world originates in the kidney radiation. A striking picture of Mars and Venus is such a musical instrument as the violin. The bow is movement full of aim and purpose, the string stays this movement and begins to sound. But quality is added to the tone only by the resonance of the instrument which creates a milieu in which the sounding tone can live, only now being born as living tone quality.

It is similar in the growing plant where especially the first two activities of Mars and Venus come into play. The force of the growing point, directed outwards, is surrounded and filled by the nourishing Venus force; only through both these

processes together can the plant grow. Creation and congestion, building up and excretion closely and intimately cooperate; the dammed up force of the growing shoot makes possible the protein formation, while the force of excretion lives in the bark and its deposits.

Venus forces manifest especially in the Yarrow Preparation 502. The Yarrow is prepared in the Stag's Bladder, the end of the sucking kidney process, and thus, strengthened in its connection with the Venus region, it can receive cosmic substances which enliven, refresh the soil, and balance exploitation. Especially the potassium processes in the plants are activated.



THE WORKING OF THE SUN.

In the centre of these three polaric processes stands the Sun process. Wherever there is a state of balance, not a dead equilibrium, but a living interplay, between Saturn and Moon, Jupiter and Mercury, Mars and Venus, there the Sun is already at work. The archetype of Sun activity is diastole and systole, the expanding, spreading out in space, and the contracting into a point. But expansion and contraction do not follow a straight line, but are spiral processes. The striving and tending away from the centre to the circumference takes place in ever widening arcs, orientated right from the beginning to the infinite periphery. On the other hand, the contraction from the circumference towards the centre takes place in ever decreasing arcs, with the centre as point of orientation right from the start. Those readers who have done some Burhythmy will understand what is here meant by orientation.

Thus the Sun manifests in two activities: On the one hand contracting, leading everything to the centre - on the other hand drawing it out into the infinite distances. We can call this contrast also 'Winter Sun' and 'Summer Sun', or 'Night Sun' and 'Day Sun'. In the making of the Preparations it is of great importance whether a process is exposed to the 'Winter Sun' or to the 'Summer Sun'. Without a proper understanding of this twofold Sun activity, our measures will remain automatic. The great breathing and pulsating of the Sun goes through all the planets, those beyond and those nearer than the Sun, causing an eternal and rhythmic interplay between them. It is the task of the farmer working

with the bio-dynamic Principles, to live with these rhythms and to adjust his actions to these rhythms and life processes of the plant.

In the most beautiful way this Sun rhythm is revealed in the human circulation when the blood disperses from the heart into the infinite periphery of the smallest vessels. In a great arc it leaves the heart, streaming towards the periphery. On its return journey towards the heart, it flows but slowly to begin with, gathering speed and finally rushing in a vortex into the right Atrium of the heart. At one time the Sun rhythm condenses the cosmos into substance, then again it transforms the substance into cosmic quality. The two Preparations by means of which we can handle these two Sun activities, as the need may be, are the Cow-horn Preparations 500 and 501. In the one case it is the Horn-Manure, exposed to the 'Winter Sun', in the other the Horn Silica, exposed to the 'Summer Sun'. Both preparations are stirred before use, i.e. a rhythmic stirring inwards and outwards takes place, the vortex each time reaching the bottom of the vessel. With this stirring we subject these Sun-Preparations to a rhythmic, spiral Sun-breathing movement, releasing into activity the 'Summer' and 'Winter' Sun forces bound and preserved in the Horns.

The plant is really a Sun-Earth-Being, and for this reason the Preparations 500 and 501 are so important. After the Earth has received the compost in which the planetary forces are harmoniously active, the Sun-breathing process brings all this into movement; and it is for this reason that the Preparations 500 and 501 are applied at the last moment before sowing and during growth respectively, and in such a way, that in the one case the forces concentrate towards the Earth, thus leading to germination and growth, and in the other case the substances and forces open towards the cosmos and can thus produce quality and aroma.

"The one will trouble and the one refresh,
So mixed is life in this our mortal flesh."

SUMMARY OF THE PRIMARY AND SECONDARY PLANETARY PROCESSES

Summarising the planetary activities we can say:

SATURN I From cosmic distances, the Spirit works inwards and contracts, leading to the impress as of a seal into the Physical, a process reaching as far as crystallisation.

JUPITER I The Jupiter forces round off, and in plastic beauty play around these severe Spirit forms, creating according to sublime and grand patterns.

MARS I What has thus been created is placed forcefully into the world of space and now becomes visible in its growth.

These three together are the incarnation of a living organism. The great archetypes want to place themselves into the world in this way, without taking account of the earthly conditions. The world however, in a counterstream from below upwards, responds, answers, receives and nurses lovingly what thus comes from above.

VENUS I Opens the Etheric Formative Forces into a cup or chalice and nourishes what Mars thrusts into space.

MERCURY I Brings the semifluid world of life into streaming movement, adapting itself to the chance conditions on Earth, changing the rigid Jupiter forms into forms adapted to what is possible.

MOON I Through reproduction, on a small scale (cell division) and at large (reproduction), creates a small and large chaos, into which the Saturn forces can impress their seal, and where in every cell the Spiritual archetype can be received anew.

Working together, the Outer and Inner Planets in the Primary processes bring about birth and growth of an organism. The driving force achieving the intimate cooperation of these planetary forces, is the systaltic contracting force of the S U N, gyrating from the farthest circumference through all the planetary spheres, leading right into the earthly realm. It is man's way before birth, and in the case of plants spring and summer.

There is not only growth and expansion in the cosmos, but also death and decay. Here the forces are dispersed through the diastaltic expanding S U N force: this is man's way after death through the planetary spheres, and in the case of plants autumn and winter.

Seen on a large scale, this dying is conditioned in time; but takes place on a small scale all the time during growth, because the single cell must die for the new organ or cell to grow. Life is a continuous dying and becoming. The retarding forces are as important for the well-being of an organism as those promoting growth. Especially in plants we can see how so-called diseases come about through the exuberance of up-building forces, owing to which alien organisms can lead a parasitic life. We can understand the organisation of destructive disintegrating processes, by trying to survey the Secondary processes mentioned when discussing the individual planets. To do so we must describe them in a somewhat different way. While so far we have characterised them in relation to Man, we shall now do so from the aspect of the Plant.

- MOON II has been described as the process in which the sequence of generations continuing through time, is thrown back out of the world of space into that of time, a process of reflection, through which what is past can appear as image in consciousness. For the plant this Secondary Moon process is what Goethe called the Intensification (Steigerung), a retarding, congesting of the growth forces, through which these become finer and more formed and configured, stage by stage, from the cotyledons via the leaf to the flower. This force counteracts the unfettered growth forces which alone would lead to a leaf of gigantic dimensions. Instead, a stepwise refinement takes place, while expansion in space is restricted, but at the same time there comes more strongly to manifestation the archetype of the plant, revealing its Spiritual nature in the flower.
- MERCURY II has been described as unfolding its formative forces through the meeting of flowing movements. Thus space is being created which is dead, falling out of the stream of life. In this way form can be created which serves as supporting organ. (example: wood formation out of the living cambium, or the nervature of leaves.)
- VENUS II is closely connected with this process, and we have described its force as excretion. The Secondary Venus process gets hold of all that comes into existence as hardening substance in this congesting of life forces, all that falls out of life, and excretes it in the tendency to cellulose formation (in the year rings of trees). The salts of the bark are excreted, e.h. potassium in the bark of the birch.
- MARS II has been described as congested, dammed up sound process, manifesting in the ordering of substance in albumen. It is a living, substance harmonising process. This harmony, however, comes to rest only in dying substances: fully living, young protein is a swirling chaotic process; only dying protein has a definite structural formula. Once substances have been formed, they become increasingly rigid and assume their pattern of substance. Soon after St John's

(Mars II) Day these forces increase in strength in the plant. The leaves become darker and harder, the young bud for the coming year terminates its development and waits for a new impulse of the incarnation stream. In the yellowing leaves we see these forces victorious over the life forces, and the plant in its dry leaves can hand over to the Earth nothing but the substances bearing in their form the seal impress. As they become firmer and more dead, they also become more permanent. For this reason we should also mention all those processes through which the plant becomes food for higher kingdoms. Out of the living, fluid sugar stream in the leaves, starch is being deposited in the seed or the stem (potato) or given a permanent form in the cane sugar. Chemically interpreted all these processes are a submission to forces of earthly gravity, a condensation, a preservation. No longer do they take part in further upbuilding processes, but they are saved for later growth and use. Then, however, starch must be changed back into the living sugar stream.

JUPITER II has been described as chemist, serving man's movement in the muscles. This chemistry of the muscle, when serving movement, is always a destructive one. Substances are destroyed, split or annihilated, so that the milieu is more acid. During rest these are built up once more. In the plant all that is disintegrating chemistry, is Jupiter's activity. What is aromatic in flower and fruit owes its existence to these finer Jupiter formative forces. Everything aromatic is always something which opposes the life process. Out of sugar the glucosides are formed, out of carbo-hydrates the so-called 'ethereal oils' (which are not proper oils); out of disintegrating proteins the alkaloids. All these substances bestow their aroma and their pharmacological effects and properties upon fruit and seed. We may here remind ourselves of what is said in the Second Lecture of the Koberwitz Course about the 'A B C' of judging plants: what is cosmic, what is terrestrial in a plant? How can we make the cosmic denser and bring it closer to root and leaf (food plant) (Systole-Incarnating Stream)? How can we make it thinner (Diastole-Excarnating Stream)? So that in its thinness it is drawn into the flowers and colours them, or into the formation of the fruit, bestowing a fine aroma on them? "In the apple you eat Jupiter, in the plum Saturn".

SATURN II has been described as resurrection from the world of space into that of time. For the plant this is the formation of seed. Practically the whole plant disappears from the world of space, forms merely a point, handed over to the stream of time. This contraction can go beyond what would be normal so that the protein also contracts to carbon and nitrogen. Hydrogen and oxygen are then excreted and cyanogen arises. This is a too powerful Secondary

(Saturn II) Saturn process. "In the plum, you actually eat Saturn". The plum is permeated by a fine cyanogen-aroma, like the bitter almond, the peach and the apricot.

Summarising what has been said so far, we can present it in the form of this picture:

Systaltic Sun Stream
Primary Processes

Saturn - Archetype

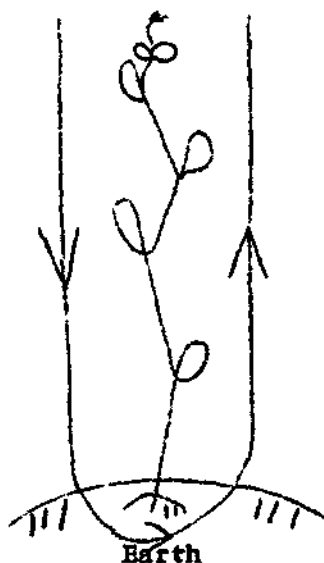
Jupiter - Plastic Forces

Mars - Growth into Space

Venus - Nutrition

Mercury - Flowing of Sap

Moon - Germination



Inversion of the Forces

Diastaltic Sun Stream
Secondary Processes

Saturn - Seed

Jupiter - Aroma,
Pharmacology

Mars - Preservation,
Forming of Substance

Venus - Excretion

Mercury - Supporting Organs

Moon - Intensification

Goethe: "Being"

Antichemistry - Ethereal Up-
Building Stream
Invisible Dynamic Effects

Goethe: "Manifestation"

Chemistry - Physical De-
struction Stream
Visible Formation of
Substance

The following may be added to this scheme: The systaltic 'Summer-Sun' forces stimulate the Primary planetary forces to work downwards. They are the invisible 'Force Body' of the plant, that which stands dynamically behind the visible processes of plant life. It is the potential, called by Goethe the "Being" in contrast to the visible form.

Only in the Secondary Stream the plant becomes visible. All that we can see and examine in the plant, has already fallen out of life and is excretion. Life itself is invisible, it manifests as dynamic effect. Only after the life process has passed through the Earth sphere, and has overcome the Earth forces, are substances formed bearing the seal impress of what is living.

The visible plant is that part which is left behind in this resurrection, in this process of emerging (as the insect from the chrysalis).

Indeed, it is of the greatest importance to have a very clear picture of this in one's soul: the Plant Being approaches the Earth. - The Plant, in its Manifestation, is already leaving the Earth.

Thus, in describing the incarnation stream from Saturn I to Moon I, and the excarnation stream from Moon II to Saturn II, we see as driving force the Sun in its dual aspects:

The Incarnation-Sun, or Spring-Summer-Sun.
The Excarnation-Sun, or Autumn-Winter-Sun.

One could also say:

The Summer-Day-Sun-Force,
The Winter-Night-Sun-Force.

We can look at this from another point of view by remembering Rudolf Steiner's indication as to the way in which the planets work upon the plant from without. In the First Lecture of the Agriculture Course already he draws attention to the two streams in plant growth: there is, firstly, the growing forth of the plant, taking place under the influence of Saturn, Jupiter and Mars, in which we recognise what has been described as the Primary processes of Saturn, Jupiter and Mars.

There are, secondly, propagation and reproduction, standing under the influence of Moon, Mercury and Venus, and this refers to the Primary processes of these planets.

The distant planets work via warmth and silica, the planets near to the Earth via water and limestone. All these processes are carried by the incarnating or 'Day-Summer-Sun' force.

All this is comparatively easy to understand. But already in the Second Lecture Rudolf Steiner points out that the whole process is, in reality, much more complicated: "But we can go still further: we must observe that this inner life of the earthly soil - (I am speaking of fine and intimate effects) - is different in summer and winter. Here we are coming to a realm of knowledge, immensely significant for practical life, which is not even thought of in our time." (II/2)

Let us make bold and take into consideration these differences: Rudolf Steiner compares what is below the surface of the Earth to the head processes - in the child! - and their effects upon the rest of the organism; what grows above the surface of the soil to the metabolic system of the child. Then Rudolf Steiner continues:

Above the ground: Metabolic system - Moon, Mercury, Venus.
Below the ground: Head system - Saturn, Jupiter, Mars.

Above the ground: Near planetary effects - directly from the moist air.
Below the ground: Distant planetary effects - indirectly received by the soil (silica) and radiated upwards.

The surface of the Earth is compared to the diaphragm, and Rudolf Steiner says that in this diaphragm the Sun as such is effective. In spring and summer, the incarnating, systaltic Sun stream works upon the plant. The incarnating processes, working from the spheres beyond the Sun, are active in the warmth through the dry air in the homeopathic silica of the atmosphere. Their formative forces do not work directly upon the plant, they are reflected by the silica strata of the Earth, radiating into the plants from below upwards.

The incarnating processes, from the spheres nearer than the Sun (i.e. germination, flowing of sap, nutrition) work directly upon the plant in the watery element, in the moist, humid air, in rain and dew. The whole of the incarnating stream finds its point of contact above the Earth. The effects from beyond the Sun are reflected by the silica, those nearer than the Sun are drawn downwards by the lime and are thus made available for growth. But below the ground, in the root region of the plant, soon after germination, forces come to life which do not stand in the up-building incarnating stream, but which are active in disintegration, excretion, preservation. These are the Secondary planetary processes which set a limit to sheer growth, the bare unfolding of the leaf nature of the plant. The disintegrating processes are here being introduced, resulting in contraction and intensification from leaf to flower (effects from nearer than the Sun), preserving substances as nutritive ones (effects from beyond the Sun), developing the new seed. These forces work from within the Earth in the region of the root.

Thus we see: Above the ground the incarnating stream of the Primary processes is active, below the ground, from the roots, the retarding exarnating forces are active, preparing already a new future existence.

During winter the situation is reversed. Above the ground there is rigidity and cold - the plant being has withdrawn from this region. Without hindrance, the Secondary exarnating Sun forces are active in the atmosphere. But something has withdrawn below the ground, which wants to unite with the seed, bestowing on it new forces for the coming spring.

The water processes of the atmosphere have been condensed to the condition of Earth. In snow they cover the earth, thus bearing the crystalline forces of the distant planets in their Secondary form. In the spring, when the snow thaws, they are given to the earth, carrying the next year's plant forces of resurrection, protein formation, health and quality (aroma). This snow is a living Earth condition. Below the ground the Earth is now as its dearest, most crystalline and exposed to the Primary processes of the planets beyond the Sun. The Spiritual archetype is being inoculated into the seed, and the force of this archetype comes to manifestation as soon as circumstances permit.

In the region of the livingly-active root warmth the Secondary forces from the planets nearer than the Sun (germination, flowing of sap, nutrition) are waiting, and after 28th January they become active. Now the sap begins to rise in the trees, even if outwardly snow and ice still cover the earth. (See Table p. 22.)

This is a picture of the "Heavenly forces rising and descending, passing from one to the other the golden buckets".

This description represents a first attempt to fulfil a task given by Rudolf Steiner, when in the Second Lecture of the Agriculture Course he said:

"But we can go still further: we must observe that this inner life of the earthly soil - (I am speaking of fine and intimate effects)-is different in summer and winter. Here we are coming to a realm of knowledge, immensely significant for practical life, which is not even thought of in our time." (II/2)

This description is of special importance, when taken as a starting point for understanding the way in which the Preparations are made, and how they work.

S u m m e r C o n d i t i o n

Warmth } Flower Warmth	Outer Planets I	(Archetype-Plastic Forces Growing Forth)	Reflected by Rocks (Si)
Air } dead			
Water } Rain	Inner Planets I	(Germination - Flowing of Sap Nutrition)	Drawn Downwards by Lime (Ca)
Earth } living			

----- S u n (Diaphragm)

Earth } dead	Inner Planets II	(Intensification, Support Excretion)	Root Tendency Working Upwards
Water }			
Air } Root Warmth	Outer Planets II	(Food Substance, Aroma Seed Formation)	From Below Working Upwards
Warmth } living			

W i n t e r C o n d i t i o n

Warmth } Distant	Inner Planets II	(No Direct Point of Contact, but in Spring these Forces are Drawn Downwards by Lime.)
Air }		
Water } Snow	Outer Planets II	(Resurrection, Food Formation, Protein Formation Health of Plants.)
Earth }		Trickling Down as Melting Snow.

----- S u n (Diaphragm)

Earth } Crystalline	Outer Planets I	(Communion of the Seed with its Archetype.)
Water }		
Air } Root Warmth	Inner Planets I	(Force of Germination. Flowing of Sap) Working Upwards from End of January.
Warmth }		

THE SEVERAL PREPARATIONS

----- PREPARATION 502 - YARROW.

Rudolf Steiner says: sulphur in its Spiritual effect is here brought to highest perfection - yarrow works in the compost heap in the same way as when used medicinally: it can remedy weaknesses of the Astral body. "Like sympathetic people in human society, who have a favourable influence by their mere presence and not by anything they say, so yarrow, in a district where it is plentiful, works beneficially by its mere presence." (V/7)
From all that has been said we recognise here once again the attitude of Venus.

Yarrow is prepared by putting it into a Stag's bladder (the terminating point of the Venus process; it is then hung in a place exposed to the Sun influences during the summer, is taken down in the autumn and buried, not too deeply, for the winter. In the Preparation it has "very strong radiating power....quickens and refreshes the soil, making good exploitation." The earth is being quickened, "that the more distant cosmic substances - silicic acid, lead etc which comes to the Earth in homeopathic quantities - are caught up and received." (V/8)

These are effects of the planets beyond the Sun. The potassium effects, active in the framework of the plant, in the stem, are quickened by yarrow.

This represents a brief summary of the essential points given by Rudolf Steiner. They are derived from standing directly and intuitively in the processes of Nature. Let us try to understand them. In the Yarrow Preparation an effect is described which altogether tends to create a milieu, an atmosphere, in which the Spiritual can penetrate into substance. The Earth is to be enabled to receive the forces of the planets beyond the Sun, thus replenishing the substances which have been lost. It is the typical Venus force, nourishing and nursing, making possible that something else can begin to work. On the other hand the effect is associated with potassium. Through this, by means of excretion of cellulose and salts, the framework of the plant can be built: that is the Secondary Venus process.

But in order to understand the special processes to which Yarrow is being subjected, we must try to understand the nature of the stag. The characteristic attribute of the male stag are his antlers. They are, truly speaking, a naked bony skeleton exposing itself to the air. What otherwise does not happen, such an exposure of the skeleton, takes place here as an exception. Otherwise the skin covers all internal organs, protecting them against cosmic influences. Here, something Saturnian and belonging to the interior of the organism, pierces the surface and places itself freely into the air, like an antenna for the cosmos. The innermost skeleton forming forces, images of the most Spiritual of the animal species, thus commune here freely with the distant cosmic forces.

The antlers are the polar opposite to the horn, which is a thickening of the skin, a place where none of the interior forces can leave the organism. The Moon here absolutely closes the gate, and the forces of the interior which want to escape,

are reflected as by a mirror. Antlers and horns make visible Saturn and Moon. The formation of the stag's antlers is a rhythmic process in the course of the year. In February and March the antlers are thrown off, the new antlers grow quickly, and during this time the female deer gives birth to her calf. In the autumn the antlers are strongest, at the time when the stag woos the deer and a new conception takes place. We see how the Saturn-antlers stand in interrelationship with the Moon-propagation, both being rhythmically interpolated into the Sun year.

By means of the skeleton-antenna, directed towards the Spiritual environment of the Earth, the stag can transmit certain forces otherwise used only by the sense organs. When during the process of excretion (the Secondary Venus process) substances which have entered the stream of disintegration are being sucked towards the kidney-bladder system, in the kidney a separation takes place between the Ethereal-Astral forces on the one hand, the Physical on the other. The Physical substances are now drawn off by the bladder, while the Ethereal-Astral forces ray upwards and in the normal case supply those forces by means of which the eye looks into the world. In the case of the stag, however, they supply that pushing force with which the antlers are driven forth. Once the formation of the antlers has been completed, they have become a sense organ. Something of the stag's Astrality leaves the organism through them and enters into communication with the Astral environment of the Earth, in which the distant planets especially are active. We witness a coming forth and entering of forces, permeating the whole animal with the Astrality of the distant planets, showing itself in the 'nervous' state of the stag.

In those substances which have been drawn off by the bladder the after effects of these distant planets are still present. The stag's bladder retains the faculty of attracting formative forces from the distances and conveying them to Physical matter. Rudolf Steiner says: "Now that which is present in the Yarrow is intensely preserved, both in the human and in the animal organism, by the process which takes place between the kidneys and the bladder. Unlike the cow.....the bladder of the stag is connected rather with the forces of the Cosmos. Nay, it is almost an image of the Cosmos." (V/9)

What is this process taking place between kidney and bladder? The kidney is really the terminating point of the Secondary, disintegrating, excretory Venus process. The Physical endproducts of this disintegration are then received by the bladder, after the Ethereal forces have been separated off. In the bladder, however, this last remnant of the Venus process meets the Moon process, expressing itself in the reproductive organs so closely associated with the bladder. The process between kidney and bladder corresponds to the process between Venus and Moon.

The study of evolution reveals how the reproductive organs have developed from the Pronephros. This expresses a secret connection between Moon and Venus, and has led to many an erroneous view of the Venus effects. Even today diseases of the sexual organs are referred to as 'Venereal Diseases', which is quite obvious-

ly due to a mixing up of Venus and Moon. The Venus process always hides in chaste shyness, while Luna is more forward and likes to show herself. But it is through the Moon forces that the Venus forces are brought to visible reality, and that is needed by Venus to become fruitful right as far as the stream of life.

In the stag this process is beautifully woven through by cosmic forces by means of the antlers. *Achillea millefolium*, (in the Middle Ages also called *Hipercilium Veneris*, Venus' Eyebrows) experiences in the stag's bladder a certain enhancement of its forces, becoming still more able than it is to begin with, to unfold its Venus activity, by being activated to create the space wherein the formative forces from distant planets can manifest their activity, forces which penetrate life (Life Ether).

During the summer, the bladder hung up in the open, sucks into itself the forces from the planets beyond the Sun which are active in the homeopathic silica process of the warm atmosphere. These are the forces which in winter are active in the subterranean crystalline Earth processes. In doing so, the bladder acts as if the whole animal was still in existence, extending its antlers (now Ethereal-ly) into space.

Thus the Yarrow Preparation has a quickening effect upon the soil by enabling the world of the archetypes to penetrate ever anew. "We re-endow the manure with the power, so to quicken the Earth that the more distant cosmic substances - silicic acid, lead etc which come to the Earth in finest homeopathic quantities - are caught up and received." (V/8)

I hope that such a characterisation of Preparation 502 is understandable on the basis of what has been said in the First Part.

P R E P A R A T I O N 5 0 3 - C A M O M I L E .

Rudolf Steiner indicates: "Camomile assimilates calcium (in addition to the potassium)...(V/10)...(Manure thus treated) is a manure with a more stable nitrogen content and with the added virtue of kindling the life in the Earth so that the Earth itself will have a wonderfully stimulating effect on the plant growth. Above all, you will create more healthy plants - really more healthy - if you manure in this way, than if you do not." (V/11)

The Camomile is prepared by stuffing the little flowers into cattle intestines, burying those sausages during the winter in the ground where the snow remains for a long period and where the snow water when the thaw comes seeps into the ground, so that "the Cosmic-Astral influences work down into the soil where the precious little sausages are buried." (V/11)

Even today Camomile is widely used in medicine, and mainly so in the whole region of mucous membranes. Wherever there is inflammation, i.e. where chaos prevails, where mucus and puss are produced, Camomile soothes, deodorises, cleanses. The

main sphere of application, however, is the intestines. Camomile exerts a healing influence upon all sorts of cramps, flatulence, disturbed metabolism, putrefaction. Taken as tea, as enema or compress, it acts upon the processes of digestion, alleviates congestions, intensifies the excretion of intestinal glands, brings excretion into motion. Camomile relieves cramps due to the Astral entering the intestinal movements in a false way, instead of uniting with the substances which, quickened by the intestinal wall, must be assimilated within the human interior and find contact there with the Astral Body as a whole.

Typical also is the sleep inducing quality of Camomile. When somebody suffers from insomnia, his Astral Body cannot separate in the evening from the Physical-Ethereal. This occurs where the Ether Body is too weak, and in consequence the Astral Body comes into direct contact with the Physical organism. Camomile in form of a hot compress on the abdomen brings the Ether Body once again into movement and brings it about that the Astral Body once again can separate. It is a strong sleep inducing remedy, when this hot compress is applied in the evening.

Typical of Camomile furthermore is the intensification of the Ether stream and activity during putrefaction of meat. Where venison has gone 'high', i.e. begins to putrefy and stink, the meat can be freshened once again by placing it into Camomile tea. The Astral-Ethereal, already in the process of separation, reunites with the Physical substances, enlivening it again. We see that Camomile in the first place has a strong effect upon the intestines, secondly, it brings what is congested in the Ethereal, into motion. Both these characteristics indicate a relationship with Mercury processes. Mercury is very strongly active in the intestinal activity. The whole intestinal wall is one great gland, where the human interior excretes the intestinal fluids into the intestinal contents (which are really outside man). The latter do not yet belong to the human organism. When their substances are destroyed to the point of being inorganic, they are taken within and are quickened by the organism's Ether Body.

Camomile works in such a way that the Ethereal is brought into flowing movement, thus pacifying the chaotic Astral elements. This is a typical Mercurial activity. Camomile is associated with all glandular effects and strengthens the Ethereal over against the Astral, while Achillea Millefolium opens the Ethereal for the reception of the Astral.

Camomile, stuffed into the 'Camomile sausage' is handed over to the winter Earth, placed where the snow has for long periods the benefit of sunshine, and where the snow water can seep into the ground. From what has been said before, we know that just in the snow the Secondary processes of the planets beyond the Sun are active, and how as snow water they bring 'resurrection' (Saturn), chemistry (Jupiter), protein formation (Mars). There the Camomile sausage lies in the ground, surrounded by the whole Earth instead of the body of the animal. The intestinal wall continues to function as a gland, anxious to send the cattle's Astral forces into its content, as was the case during the intestinal activity in the living organism. These forces, once again, are those of the planets beyond the Sun in their Secondary, more inwardly directed activity, which came down with the snow water.

Thereby a connection with the chemical and protein forming forces is added to the flowing Mercury force of Camomile. It is for this reason that Rudolf Steiner says that such manure has nitrogen in a more stable form, that the Earth is quickened and produces healthier plants. Just where the flowing activity of Mercury meets the Secondary effects of the planets beyond the Sun, a real and true healing is brought about.

P R E P A R A T I O N 5 0 4 - S T I N G I N G N E T T L E .

Rudolf Steiner says: "The Stinging Nettle has a kind of iron radiations (which) is almost as beneficial to the whole course of Nature as our own iron radiations in our blood." (V/12)

The Stinging Nettle attracts to itself any excess of iron radiation in the soil. The prepared manure has become inwardly more sensitive and sensible and does not permit any wrong processes of disintegration in its neighbourhood. The Earth becomes individualised with regard to those plants which we want to grow in a certain locality. The products become truly nutritive.

Even today the Stinging Nettle is used as a popular remedy against rheumatism, and as a so-called 'blood cleanser'. In its whole attitude the Nettle is a Mars plant: it is aggressive against anyone coming too close, and thrusts its arrows into the skin of its opponent. But the young plant is a delicious vegetable for spring soups and is similar in taste to spinach.

In our medicine it is an ingredient of the 'Anaemodoron' (the remedy against anaemia), of the milk stimulating tea and of 'Combudoron'. It is also used where the iron-Mars process is to be stimulated. In general we can say that the Stinging Nettle regulates the iron economy in Nature, and iron is essential in the soil in smallest quantities so that the leaves may be green. Admittedly, the chlorophyll which is so similar in structure to the hemoglobin (the red colour in the blood is due to it) has instead of iron magnesium, but no chlorophyll is formed, no green colour in the leaves can come about, if there is no iron activity in the soil.

Preparation 504 bestows on the soil this active iron radiation. Rudolf Steiner calls the Stinging Nettle a "regular Jack-at-all-trades who can do very, very much." (V/11) We meet here for the first time a Preparation in which the planets from beyond the Sun are active, and we shall see that these Preparations require a less intense potentising than those connected with the near planets. Of their own accord they already have a strong activity, and all that is needed is to bring them into closer relationship with the Earth. The Stinging Nettles does not require an animal organ for consolidating the forces towards the Earth. It is simply buried, separated a little from the surrounding soil by peatmoss, and there it stays for a year, during a winter and the following summer. When it is taken out of the ground, it permeates the whole compost heap and regulates the iron radiations for the plant.

Surveying what has been said about the iron-Mars processes and grasping how Mars in its Secondary activity brings about the building up of protein, we understand too how Rudolf Steiner describes this Preparation as one arousing in the soil the disinclination (an active process) that anything should suffer loss of nitrogen, or decompose, in the wrong way. In this way the plant gains in nutritive value.

P R E P A R A T I O N 5 0 5 - O A K B A R K .

Rudolf Steiner describes the Oak Bark as a remedy against plant diseases. In it the calcium is active within the sphere of life. The ash of Oak Bark contains up to 78% calcium of which it is said: "It restores order when the Ether-Body is working too strongly, that is, when the Astral cannot gain access to the organic entity. It 'kills' or damps down the Ether Body.....But if we want a rampant Ethereal development, of whatever kind, to withdraw in a regular manner - so that its shrinking is beautiful and regular and does not give rise to shocks in the organic life, - then we must use the calcium in the very structure in which we find it in the bark of the oak." (V/14,15)

When do plant diseases arise, when can bacteria or fungi live on a plant? Only when the plant is unable to hold together its Ethereal in the form of the Astral-Spiritual archetype. The Ethereal then seeps away and it is this 'food' on which the bacteria and fungi can live. On healthy plants they find no basis of existence. Where plant diseases appear, we must communicate to the plant from below a force which allows the Astral to penetrate in the proper way. We must see this Preparation in connection with the polarity of the Oak Bark Preparation to the silica active in Equisetum from above and meeting what rises from below in the calcium. The effect is connected with a regulation of the Moon effects in the Earth. Rudolf Steiner refers to this in these words: "In the growth of plants the Moon influence is well nigh sufficient to bring about the reproductive process. In the animal kingdom on the other hand, the Moon influence must be supported by that of Venus." (V/9)

Compare with this what has been said above about the process taking place between kidney and bladder, between Venus and Moon. He continues: "You need only call to mind a thoroughly wet winter, followed by a thoroughly wet spring. Then the Moon forces will enter the Earth too strongly. The Earth will become too much alive....If the Moon imparts precisely the right vitality to the Earth, this vitality will work on and upward till the seed develops. Assume now the Moon influence is too strong, the Earth is too much vitalised, then it will work too strongly from below upwards. That which should only occur in the seed formation will occur at an earlier stage. Precisely, when it is too strong, it will be insufficient to reach the top. Through its very intensity, it will work itself out more in the lower regions.....The seed (the upper part of the plant) becomes a kind of soil for other organisms. Parasites and fungoid growths

arise - all manner of fungoid growths.....The true force of fertility depends on the Moon's influence being normal and not too strong." (VI/15,16)

The Earth must be relieved of the superabundant Moon forces by means of Preparation 508, Equisetum Arvense.

The Moon forces become active in the soil in a healthy and normal manner through Preparations 505, the Oak Bark.

The Oak Bark, associated as it is with the planetary spheres nearer than the Sun, needs consolidation, a closer connection with the Earth, through the help of an animal organ. For this purpose Rudolf Steiner has indicated the skull of an animal, from which has been taken via the Foramen Magnum (the hole at the base of the skull) the brain, while it is still quite fresh. (The skull should not be sawn open!) The Oak Bark, in a crumbly condition, is then put into it. The hole is then closed with a piece of bone from the same animal, and this skull with the 'Oak Bark brain' is placed into mud, where rain and snow water can flow past it. This takes place during winter.

Let us call to mind which forces are active in rain and snow water during winter: above the Earth, the forces from beyond the Sun live in the snow. Reaching the soil as snow water, they carry 'resurrection' (Saturn), chemistry (Jupiter), protein formation (Mars). We can now divine what takes place in the 'head with the Oak Bark brain'. Enclosed in the skull, the Secondary Moon process is stimulated, where the germinating forces of regeneration are damped down and the Moon becomes a formative organ, reflecting the world and creating an inward picture.

The Astral can experience itself as microcosmos within the macrocosmos through the brain. This 'killing', damping down of the Ethereal forces of life, together with the opportunity for the Astral to form an image within the substance (no other organ shows such well configured forms as the brain), enables precisely the calcium of the Oak Bark to dominate the Moon forces of regeneration tending to rampant development.

Therefore: "What you add to your manuring matter from the resulting mass will lend it the forces, prophylactically to combat or to arrest any harmful plant diseases." (V/15)

From what has been said we can see how by means of Preparation 505 the Moon forces can unfold their activity in a way beneficial to the plant.

P R E P A R A T I O N 5 0 6 - D A N D E L I O N .

Rudolf Steiner says: We need the silicic acid to attract and draw in the cosmic properties.....there must arise a clear and visible interaction between the silicic acid and the potassium." (V/17)

Taraxacum, the Dandelion, is active in this direction. "Truly, this Dandelion is a kind of messenger from Heaven." (V/17) Through Preparation 506 the plant will be prepared "to draw things to itself from a wide circle." (V/18) The plant is being made "inwardly sensitive."

In medicine, Dandelion is used as a spring tonic, and against liver trouble. With its silica effect it attracts the forces of the planets beyond the Sun, especially the potassium effects which in man also are active in the liver, and which give the plant its solid frame enabling it to stand upright. The Dandelion has a single cosmic root reaching far into the dead strata of the soil. When flowering is over, the receptacle forms the beautiful and fine 'candle' of almost crystalline structure. Here we see Jupiter forces at work, on the one hand in these formative silica forms, on the other in the chemistry of the milky sap. For feeding purposes we need the young plant, before it has flowered, full of this milky sap. But for Preparation 506 we use the flower which even after it has been picked and during the drying process tends to go to seed, the flower with its radiating forces, but before these become manifest. Here again only little treatment is needed. The plant parts are no longer placed into some animal organ, but all they need is a certain connection with a animal membrane; that is enough to enhance their forces, while the Preparation passes the winter in the crystalline Earth, exposed to the workings of the distant planets. The membrane is chosen to enhance precisely the Jupiter force. But how can we understand that the Jupiter forces are enhanced by using the mesentery of a cow?

Rudolf Steiner has indicated as sheath the mesentery from which the fat has been removed. There remains then a thin and shining membrane. This has a unique position among the membranes of the body. Like the pleura it is sensitive to pain and covers all inner organs which themselves are not sensitive to pain. Thus, while serving the higher consciousness in the lower part of man, both pleura and mesentery have still more important functions. As fine and shining membranes they cover the great organs (the same is the case with the pericardium and the pericardial sack). These sensitive surfaces of the organs have an important function in the conscious life of man. When the higher man forms a conscious mental image (representation) in his upper free Ether body, he carries this Ether form down to his greater organs in the process of forgetting. There the picture, the image is reflected by the surfaces of the organs and can also be remembered again by inner vision. The image forms of the upper Ether body are reflected, the living Ether Beings, however, (because the thoughts sculpted by the upper Jupiter are living Beings) pass through these surfaces into the organs where they are preserved and only after death they become formative forces for the body of the next incarnation. (cf. Rudolf Steiner's lectures of June and July 1922)

What the Upper Jupiter has formed, is allowed to pass through, as far as its content is concerned, and is preserved for later activity. In such a mesentery the Dandelion is exposed in the Earth to the winter-distant forces: the living content of the Jupiter activity has passed through and is communicated to the

'Dandelion organ' for later activity. By being wrapped into the mesentery, a handful of Dandelion becomes an organ like lung or liver or spleen. This organ now attracts from the whole of the Earth the formative forces into itself. The relation of the 'Earth brain' to Preparation 506 is the same as the human brain to the metabolic organs. The forces which are formed above, are preserved so that they may be remembered.

Preparation 506 brings it about that the plant becomes sensitive and can attract what is active in the wide circumference: "Your plant will then benefit not only by what is in the tilled field itself, whereon it grows, but also by that which is in the soil of the adjacent meadow, or of the neighbouring wood or forest." (V/18)

The plant becomes an organ within a greater organism, the whole farm, as it stands there with its fields and grassland and woods. Thus we have described in Preparation 506 how Jupiter forces are active right into the life on Earth.

P R E P A R A T I O N 5 0 7 - V A L E R I A N .

Rudolf Steiner says about this Preparation little more than that it stimulates the plants to behave properly towards what is called phosphorus.

Valerian is not prepared in any special way. The flowers are pressed and the extraction highly diluted with water. The mixture is sprinkled over the compost heap. There is no need here to prepare the plant within the sphere of the Earth. Diluting and potentising are enough, because we are dealing with the most distant forces of Saturn, so close to the Spirit. These must be communicated to the heap, and by sprinkling them over it we surround it with something like a Spiritual sheath, just as Saturn encloses the whole planetary space.

How can we understand this "to behave in the right way in relation to what we call the 'phosphoric' substance"? (V/19) Rudolf Steiner describes the medicinal effect of phosphorus as strengthening the Ego (in the case of the plant this means the Spiritual archetype), as against a too strong Astral activity. With the Oak Bark Preparation we achieved that the Astral should work as a regulator against the rampant Ethereal. Here, in the case of Valerian, it is a Spiritual element which must win the upper hand so that the plant may, again and again, realise its own archetype. We can test the medicinal effect of Valerian by taking a large dose (e.g. 50 - 60 drops) of Tinctura Valerianae, made from the root. We notice a slowing down of the pulse, a leaden heaviness in the limbs, and a lowering of all functional rhythms. This remedy is found in every medicine chest and is used in all cases of nervous excitement and insomnia.

With the Valerian we have enumerated the last of the six compost Preparations and have brought its effect upon plants into relation to Saturn, most distant from the Earth and closest to the Spirit.

SUMMARY OF PREPARATION 502 - 507.

Summarising what has been described we arrive at the following arrangement of the Preparations:

Saturn	Valerian	Diluted	In Water	
Jupiter	Dandelion	In Mesentery	In the Ground	In Winter
Mars	Stinging Nettle	Without Sheath	In the Ground	Winter & Summer
Venus	Yarrow	In Stag's Bladder	Above the Ground Below	Summer Winter
Mercury	Camomile	In Intestines	In the Ground	Winter
Moon	Oak Bark	In Skull	Under Water	Winter

We notice specially:

Mars- and Venus Preparations (Stinging Nettle and Yarrow) are being prepared in the course of Summer and Winter.

Jupiter- and Mercury Preparations (Dandelion and Camomile) are being prepared in Mesentery and Intestines respectively, only during Winter.

Saturn- and Moon Preparations (Valerian and Oak Bark) are not buried in the Ground but are placed in Water.

Saturn Preparation (Valerian) is diluted in Water, Spiritualised.

Moon Preparation (Oak Bark) is being kept under Water during the Winter, becoming active within the Bony Sheath.

PREPARATION 500 - HORN DUNG

a n d

PREPARATION 501 - Horn Silica.

We shall now study how the Sun forces can assist plant growth. This is done by means of the two Cowhorn Preparations, the Horn-Dung prepared during winter, and the Horn-Silica prepared during summer.

Let us deal first with the process of preparing a substance within a Cowhorn. The horn is a densification, a thickening of the uppermost layer of the skin. In the horn of the skin the Primary Moon forces comes to rest. The regenerative Moon forces radiate from within outwards as far as the horn mirror of the skin, where they are reflected and transformed into the Secondary Moon forces. In selfless suppression of life room is made for the outer light to become effective within man.

By suppression of life within the human brain, the outer world permeated with Sun light reaches the level of human consciousness. But actually much more happens through this selfless nature of the nerves; we become conscious of the light of the world because it is being arrested; the invisible formative forces of the Sun realm are not retained by the brain. (Dr. Steiner speaks in this connection of a sieve which lets pass these forces of world formation and world life.) These forces, which are not arrested, expressing themselves in the Life Ether and Chemical Ether, stream through the brain and follow the nerves right into the inner organs, where they are condensed to new substance. This is one of the greatest secrets of life. The human organs themselves are not built out of the food, but as Rudolf Steiner describes, they are continually being created anew, condensed anew, out of the cosmos. In the intestines, part of the substance (that part which has been digested by the Ego) disappears into the centre, thereby re-appearing as Ethereal force in the infinite periphery. Simultaneously, new Ethereal substance is being condensed, through the nerves, into the organs.

This is the secret interplay of Sun-Formative forces and Moon-Reflecting forces through which the substance of the Earth is being renewed. For finally, through being cast off, and through death, these new substances enter the cycle of the Earth elements. In the Fifthe Lecture of the Agriculture Course (pp 16/17) Rudolf Steiner describes a similar transmutation of elements which admittedly does not go as far as that in man, which indicates however that also in the organic, non-human world this tendency towards the new formation of substances exists. Dr. Steiner refers there to the relationship between (dead) nitrogen of the air and oxygen (-which in the nitrogenous fertiliser industry are forged together with the help of electric energy - The Author) and a secret connection between calcium and hydrogen in the organic processes, where "Under the influence of hydrogen, limestone and potash are constantly transmuted into something very like nitrogen, and at length into actual nitrogen. And the nitrogen which is formed in this way is of the greatest benefit

to plant growth. We must enable it to be thus engendered by methods such as I have here described." (V/16, 17)
Rudolf Steiner refers here, of course, to the Preparations.

Potassium and calcium are those elements through which the planets nearer than the Sun are active, especially the Moon. We know from the Agriculture Course that in the passage quoted precisely these planets are referred to.

We must add a further paragraph as basis for later discussions:

At the end of the Second Lecture, Rudolf Steiner speaks of the planetary effects upon the animal embryo, into which stream from the front via the mouth direct Sun forces, from behind via the anus Sun forces reflected by the Moon. In the course of development this continues in such a way that the Sun forces extend their reach as far as the heart. The planets beyond the Sun cooperate in the forming of the head. From behind, the Moon forces (reflecting) are supported by Mercury and Venus. We must look therefore in the digestive tract for the working of the planets nearer than the Sun. (This had been mentioned already when we discussed the Yarrow-Bladder and the Camomile-Intestine Preparations) or rather the Sun forces work in and through the planets nearer than the Sun. Manure is not merely the product of disintegration of food, but a substance thoroughly permeated with animal forces. Even a purely materialistic interpretation can teach us this, because gallons of digestive juices have been poured into the content of the intestines (Mercury is here at work). Some of these juices have been re-absorbed in the large intestine but the manure still contains them in considerable quantities. Manure is plant substance in a state of disintegration permeated through and through with near-planetary animal forces, or: with Sun forces working through the planets nearer than the Sun.

We can therefore describe manure in this way: Concentrated Sun forces working through the planets nearer than the Sun. Let us remember that for later and let us return to the horn.

There exists a connection between these digestive forces and the skin, which we can now understand. It is rather remarkable that in horned cattle precisely those points where the forces from within want to radiate outwards, are covered with a horn cap. Thus it happens that the forces which work from within (Near planets) are first led towards these formations reaching out from the body (horns, hooves) but are then reflected inwards. This Near-planetary force is thus enhanced in its potency during digestion. Into the Primary Moon-, Mercury-, and Venus forces there radiate, from outside the digestive tract, from the skin periphery, the Secondary forces and add their effects.

We try to remember as a new point of importance: in the animal, the horn reflects the Near-planetary forces from the digestive tract (from the manure) back into the manure.

What happens now when we make Preparation 500? Fresh manure is placed into the horn and is buried in the ground during the winter. In winter, the 'Winter Sun' is active which unfolds its Life and Chemistry in darkness. The soil is filled with dark Sun-Life-forces.

In the Agriculture Course Rudolf Steiner says: "By burying the horn with its filling of manure, we preserve in the horn the forces it was accustomed to exert within the cow itself, namely the property of raying back whatever is life-giving and Astral. (i.e. Near-planetary metabolism - The Author) Through the fact that it is outwardly surrounded by the Earth, all the radiations that tend to etherialise and astralise are poured into the inner hollow of the horn. And the manure inside the horn is inwardly quickened with these forces, which thus gather up and attract from the surrounding Earth all that is Ethereal and life-giving. And so, throughout the winter - in the season when the Earth is most alive - the entire content of the horn becomes inwardly alive. For the Earth is most inwardly alive in winter time. All that is living is stored up in this manure. Thus, in the content of the horn we get a highly concentrated, life-giving manuring force." (IV/12,13)

Summarising what has been said in the foregoing paragraphs, we can say: In the prepared cow horn we have the preserved quickening Winter-Sun force, i.e. that Sun force which wants to work in and through the planets nearer than the Sun, causing thereby germination, root development and growth of the plant. Soil which has been sprayed with this Preparation can draw towards the plant these quickening (dark) Sun forces.

Something else must be considered when this Preparation is applied: A preserving force is present in the cow horn, "an immense Ethereal and Astral force" (IV/13) but in a preserved form. This dark Winter-Sun force can be stored and carried about. But in this preserved form it is useless to the plant. To make them effective the fettered Ethereal and Astral forces must be loosened again so that they can unfold and flow freely. Because we are dealing with fettered Sun forces, they are loosened by placing them into a rhythmic Sun movement. The Sun movement is the spiralling in and out, as was described in earlier pages. The Preparation 500 is led through this spiral movement before it is sprayed on the field. We stir into the sucking nothingness of the vortex and stir outwards from the centre of the vortex into the periphery.

It is important to become aware of the essential difference between these two directions, while stirring: the one accompanying the 'light' movement of the Sun, the other in opposition to the course of the Sun, being the 'dark' Sun movement. Through the stirring the preserving forces are loosened and led into flowing activity. We recognise in Preparation 500 the dark Winter Sun forces seeking their way outwards through the forces of the planets nearer than the Sun, from the Earth towards the periphery. This is the Sun force which stimulates germination and spring growth. It is the Winter or Night Sun.

The Grace which Rudolf Steiner gave, begins with the words:

"The Plant Seeds are quickened in the Night of the Earth."

Perhaps what has been said in these last paragraphs has been a help towards a better understanding of this one sentence.

P R E P A R A T I O N 5 0 1 - H O R N S I L I C A .

Preparation 501 has been indicated as standing in a certain way in contrast to Preparation 500. Here not manure but silica is used, a substance which in its nature seems alien to the horn. But only apparently so, because when looking for the silica in the human body, we find it in hairs and nails; and it is precisely the silica in skin and skin organs which enables then not only to be an integument, but also a gateway, in that the sense organs develop in the skin. Silica is associated with all sense activity of external and internal skins. (Let us remember the mesentery into which the Dandelion flowers are sown which are mediators of silica forces.)

Silica in the cow horn behaves quite differently from manure in the cow horn. Silica in the cow horn wants to awake to an intense sense activity, wants to develop organs for perceiving light and warmth, and capable of penetrating the life processes with their formative and qualitative forces. This cow horn filled with silica will not feel at home in the wintery Earth because the silica is connected with the planets beyond the Sun and with the realm of summer light and warmth. These forces from beyond the Sun are active in the summer firstly (as a stream of incarnation) in the silica reflection of the soil, and secondly (as exarnating stream) in the light and warmth processes of the soil itself. The silica cow horn, brought into the soil during summer, sucks into itself out of the summer Earth the 'light' Sun forces, active through the outer planets, and in such a way that these can be active in the qualitative aspects of substance formation.

The silica Preparation 501 bestows upon the plant sense organs for all that is active in the light and clear forces of the Day- and Summer Sun. Through this the plants become transparent and the totality of the outer planetary forces can begin to work. They do so in such a way that quality and nutritive value are engendered in substance. For this reason the Preparation is sprayed when those parts of the plant are forming which later are to be harvested.

Not only quality and form are thus transmitted (the Primary processes of the planets beyond the Sun), but also the nutritive substance (the Secondary processes of the outer planets). Thus we recognise in Preparation 501 the effects of the Day- and Summer Sun forces, i.e. that Sun force striving to manifestation through the outer planets. This effect reveals itself in the retarding of growth, but at the same time in the depositing of substance. With the help of Preparation 501 we produce nourishing products with a firm and healthy structure which in turn leads to better keeping quality.

Preparation 501 must also be led rhythmically through the Sun movement. Here we can think of the third line of Rudolf Steiner's Grace:

"All Fruits are ripened through the Power of the Sun."

The fruit which is our food ripens through the power of the external, 'light' Day Summer Sun. If we understand the language of pictures rightly, may we not say: "The Plant Seeds are quickened in the Night of the Earth", leading us to understand Preparation 500, and "All Fruits are ripened through the Power of the Sun", Preparation 501?

CONCLUSION.

Now that we have reached the end of our studies, I would like to add a few words which usually are said as a preface:

Will you, my friends of the bio-dynamic groups, take the preceding pages in the spirit in which they have been written. For me they are the result of having lived for many years with this whole problem. But I am not a farmer. You must examine carefully what has been written. It must not be taken as a dogma, but rather as a first attempt to contribute to the solution of the problems associated with these Preparations. I would be grateful indeed and feel rewarded if this essay would be the starting point for exchange of thoughts and views.

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