

# THE BIODYNAMIC COMPOST PREPARATIONS



THE BIODYNAMIC PREPARATIONS AS SENSE ORGANS

*talks on biodynamic agriculture*

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The Biodynamic Preparations as Sense Organs

Talk given at the 8th International English-Speaking Conference for those concerned with Biodynamic Agriculture Emerson College, Forest Row, E. Sussex

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Revised by speaker for publication in this booklet

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## INTRODUCTION

The talks in this booklet were first given at the New Year's Conferences for those involved with Biodynamic Agriculture held at Emerson College in January 1993 and January 1994. Since then they have been thoroughly revised by the speaker. As the themes of the two conferences were so complimentary it has been decided to publish these four talks in one booklet.

This is the seventh volume of keynote talks from this series of conferences. Readers are reminded that the talks were given to people to whom biodynamic agriculture is familiar, as well as that which underlies it as described by Rudolf Steiner in his works of anthroposophy and the Agriculture Course. We hope that they will provide valuable study material, both for those who were present at the conferences and others.

Our deepest gratitude is due to Dr. Klett for his continued interest in bio-dynamic work in Britain and for the revised talks which are sure to be a true source of inspiration for us all. Our thanks go also to John Kirk for proof-reading the text and to Gearing's Printers.

For further information about future conferences and published talks please contact the address below.

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## **Manfred Klett. The biodynamic compost preparations. First Talk 4.1.93**

The mood out of which last night's story [1] was told was very connected to biodynamics, because the way M. Bouffer just did what he thought was right is really a blessing. It is a blessing for modern man when one has such a certainty, such an inner knowledge, not to be too far away from the truth if one just does what one thinks. This virtue to do and think and to think and do requires courage, and that is greatly lacking nowadays. In biodynamic farming, and especially our work with the preparations, we have to evoke the same sense of certainty. The theme of our conference is 'Why do we use the compost preparations'. With the preparations we are doing something without seeing the immediate result. We take tiny amounts of earthly substance which look like humus and we put them into holes in the compost heap. We cover up the holes and go away, accompanying the natural process which now goes on beyond our perception with a feeling of certainty that something most significant will happen. Our whole modern civilisation is a desert, and will remain so if we do not insert here tiny little germs of ideas and deeds, whilst being deeply convinced that they will come out one day and flourish.

My talk this morning will deal more with the fundamentals of understanding the preparations.

We have heard from the reading from the Agriculture Course [2] that the preparations are dealing with forces. Forces are not visible. We only perceive their effect. Sunlight as a force is invisible. What we see are colours that appear when the forces of darkness (physical matter) and light meet. In order to understand what forces are, we have to behold ourselves. In carrying out an action we reveal our will. We experience our will as being the force that creates a certain effect. At the same time we are sure that this force has its origin in our spiritual being. In beholding ourselves we recognise that the effect of the forces we expose are of spiritual origin. In the outer world we look on to the effect while the inner nature of the force and the spiritual being creating this force are hidden. How are we able to identify different qualities of forces in the outer world? For example we can observe a dog. Let us first imagine a dead dog. When so doing all the effects that appear are decaying processes; forces of disintegration appear. They end in complete mineralisation. The ruling laws of this realm are cause and effect. The forces at work are mechanical ones, leading into sub-nature: the forces of electricity, magnetism and nuclear power. The effects these forces of decay cause are finite and therefore calculable.

If we abstract what we experience in ourselves and what is hidden in the outside world and make theories of it, we create a new realm below nature. This is the mechanistic realm of technology. This realm benefits the social life but in the long run it disintegration in our natural environment. brings about destruction and disintegration of the natural environment.

With the theoretical ideas gained from the decaying processes we cannot construct a living dog, only a machine. We are able to isolate and even handle the forces that are active in the mineral realm. Indeed we are concerned in our daily lives with these forces, namely electricity, magnetism and nuclear power, and of course the mechanical forces, although

nobody understands their inner nature. We have to ask, what beings are creating forces which ultimately lead to destruction or mineralisation?

Let us now take the other case and observe a living dog. It reveals forces out of an inner activity. We see it breathing, regulating its own warmth body, and how it feeds. Furthermore, there are life processes active in the dog's organism; those of inner secretion and excretion, and of life maintenance: growth and reproduction.

Observing the dog we can see that these processes keep the organism alive. Through them the organism appears as a unit, a wholeness. Whatever life processes are active are embedded in rhythms. The forces at work in the decay of a dead dog will not manifest rhythms. The rhythms are congealed into a beat and are therefore calculable. Life processes do not follow the laws of cause and effect, but rather the law of simultaneity. Take, for example, the physiological processes in a cell of the liver, which is the most active organ in the organism. A liver cell is about the size of one-hundredth of a pinhead, almost simply a dot. Within such a cell, about twenty different physiological processes have been observed all happening simultaneously. There are those that build up glycogen and those that break it down, both acting at the same time! It is impossible to think that this all actually happens within that cell. The liver cell is just the physical point, and all that happens has its origin in the cosmic circumference far beyond. In order to understand the physiological processes in the liver cell or any life process we must seek its origin in the cosmic circumference.

Observing a dead dog, we do not see the decaying forces as such: What we perceive is a sequence of images that we produce out of an inner activity. By perceiving we grasp the appearance of a decaying process, but the forces that are at work are hidden. The same is true when observing the living being. When the dog is barking or jumping at us, again we develop through inner activity pictures which refer to the appearance yet not the inner ensouled life of the dog as such, the astral body. What we become conscious of by thinking touches the surface of a hidden world. Our thoughts are just as dead as the perceived objects. But the crucial point is that, while we are building up images, the same force that is active in thinking is active in the outside world as the force of plant growth. In thinking a life process is active. The thinking activity is an inner life process which remains unconscious. The very moment it comes to an end, that is, it becomes conscious, it dies into the thought. The inner wisdom of this life force is revealed as the content of the thought. From this point of view life forces are active wisdom. The forces in thinking are related to the forces that allow the plants to grow. In plant life they also die, but into blossom, whereas in thinking they die into the thought. In the flowering stage the wisdom of the plant being is manifest. In the same sense as plant growth ends in the blossom, so the thinking activity culminates in the 'blossom' of thought. Both are revelations of reality on two different levels. That is why our thinking can lead us to the truth in nature. The force active in thinking dies into the thought, whilst when feeling we are in a more dreaming state and the forces reveal more of their inner quality.

Let us now take another example and imagine going out and climbing a hill and looking into the surrounding unspoilt landscape. We immediately perceive it as a wholeness. We do not see isolated segments but an inner coherence. The force creating this coherent image of a wholeness may be called light ether. Outside the landscape is flooded with light. At the same

time, looking at this landscape it is the hidden force of the light ether that builds up all the different manifestations into one wholeness. Just as the light connects everything in the outside world, it is the life ether within me that builds up the image of this wholeness.

If we continue to look at the landscape throughout the seasons we have a different view in spring and summer, autumn and winter. This points to a transformation taking place, which reveals the working of the chemical ether, which is another quality of force in the etheric, that is to say the life realm. The forces that cause metamorphosis in the outside world are active within us when we can see this metamorphosis. If we look at the same landscape from another point of view we see that every single feature is related to the others. For example there is a meadow and here is a field and beyond is a valley and a distant hillside covered by forest. This immediate feeling that everything is interrelated is a reflection of a force of sense activity in the outside world. It is the revelation of the life ether which is active in us also when we recognise the relationship between things: If we look at the outside world and it appears to us as a harmonious wholeness, the ether forces are in a healthy relationship. If this coherence is disturbed then decaying forces predominate and our living realm falls ill. Decaying forces belong to the mineral world. It can happen all of a sudden that the inner coherence of a landscape breaks down. The dying forests are such phenomena. The forces of light, chemical, life and warmth ether are no longer able to maintain this inner coherence of the landscape. Something similar happens when we cultivate the soil. activate the oxygen process and thereby break down the stable humus. Forces are being lost along with substances.

light ether	landscape
chemical ether	relationship of processes
manifestation of ether	harmony of landscape
when this breaks down	dying forests

The task of fertilizing is not only to restore substances, but also forces to the soil. Mineral fertilizer mainly restores substances and physical forces which, in the case of salts, promote decay. Take the example of artificial nitrogen. It immediately dissolves in water in the soil and thereby influences the electro-magnetic potential in the soil. This undoubtedly affects the formation and sensitivity of the plant root hairs and its ability to perform symbiosis. If we apply potassium salts, an increase of radioactivity can be detected because of its natural radioactivity. Thus mineral fertilizer does supplement diminished levels of minerals but does not supply forces of any value. Organic matter from the living realm also replaces living forces. Ensouled matter from the astral realm, for instance cow dung, introduces living and ensouled forces to the soil. That is why cow dung is so indispensable in biodynamic farming. Soil fertility is transformed into plant growth. The question is, how can we restore these forces which were composing the substances in the stable, crumbly humus? And what about those substances and primarily forces that have really been lost because produce has

been taken away from the farm? How do we restore these living and astral forces? This question is very connected to another: how can we improve the soil in such a way that the earthly substance becomes susceptible to the living forces which have their origin in the cosmic circumference? Or how are we able to make the plant sentient so that it can actively find the substance it needs? And above all, how are we able to enliven the earth so that the dead mineral matter is vitalised? These questions are not a matter of restoring something that has been there and has got lost. They demand another answer. We have to develop a technique to make physical substances susceptible to living forces. This technique was well known in olden times. A couple of centuries ago in true alchemy the alchemists were seeking to vitalise substances to become remedies. One of the most outstanding representatives of these techniques was Paracelsus (3). A follower of his, and a contemporary of Goethe's, was Samuel Hahnemann [4] who has developed homeopathy on an empirical basis. He carried out most of his experiments on himself, for instance he poisoned himself with arsenic then healed himself with highly diluted arsenic. So he formulated the healing law of homeopathy, *similia similibus*, which means 'like cures like'. This empirical homeopathic approach has been put on a sound scientific basis by Rudolf Steiner. His spiritual research was the foundation of anthroposophical medicine and following his indications many experiments were made by Lili Kolisko [5]. The procedure followed to prepare homeopathic remedies are as follows.

When we want to make a remedy out of certain substances, for instance iron or silica or some extract of a plant, take we particular substance and dilute it with nine parts of water. (We can take other mediums for dilution instead). Then we shake it and thus obtain the first decimal potency, known in its abbreviated form as D1. Then we take one part of the D1 solution and dilute it again with nine parts of water, shake it well; this results in a second stage of dilution, D2. So we can continue to ever higher levels of dilution. For instance if we reach D18 it is the same as if we take one gram of substance and dilute it in the Lake of Constance (6). If we come to about D21 we enter the realm of the Loschmidt number which indicates that no molecule of the original substance remains. And yet we have specific effects. Forces continue to be active although none of the underlying substance can be detected any longer.

Homeopathy has become the basis of anthroposophical medicine. Out of spiritual research, Rudolf Steiner indicated that different stages of potencies have different healing effects. So quite low potencies, around D7, are effective for metabolic illnesses. For disorders of the rhythmic system, such as a heart or lung malfunction, one would take potencies in the region of D12 to D18. The very high potencies heal all illnesses or inflammations of the sensory system. So one and the same substance may develop different healing properties according to how highly it is potentised.

Metabolic	rhythmic	sensory system
D7	D12 D18	D30

What is the healing process for human beings? It is when your soul-spirit is able to incarnate fully into your body and becomes a supreme governor of all bodily processes, and of how the members of the body relate to one another. As soon as something is in disorder, most

usually caused by an imbalance between the astral body and the etheric and physical bodies, then you become ill. The soul-spirit is not strong enough to build up the substances to become carrier of the ego-forces. Therefore you have to introduce remedies from the outside world and prepare them in such a way, as we have described, that the ego forces are able to promote the healing forces. This is the case with human medicine. But what is the medicine for nature? How can we heal a deficiency of forces in nature, in all that we are dealing with as farmers: the animals, plants, the soil and the farm organism as a whole? Where is the being active for which we are producing healing substances? Looking at the human being, we know that the ego forces are able to individualise any substantial processes. For example each of us has our individually structured protein. No two people are the same in this respect. The ego forces are structuring and individualising all physiological processes, and the composition of substances and forces, right down to the last cell. All is composed into an ego-organisation. But in nature nothing is in this same sense individualised. So where is the being that is able to individualise, so to speak, the life forces and substances in the outside world. This is the starting point of the question of why we use the preparations.

As in medicine we produce remedies for our own sakes, we must as human beings prepare and individualise substances for the sake of the outer world, which then become susceptible for forces which are nothing other than the deeds of spiritual beings. So we have to search for and prepare substances which can become the physical carrier of soul-spiritual forces in the same sense as our individual bodily substances are carrier of our spiritual being, our ego.

Nature provides all the material, and takes the first step towards such an individualisation, but is not able to fulfil it. We have to add the spiritual concept. The materials that nature provides are certain mineral substances, for instance silica which we use in the spray preparation 501, or the herbs for the different compost preparations out of the plant kingdom, and animal organs from the animal kingdom. Nature also provides the rhythms of the seasons, the elements above the soil of warmth and air, and the elements below the soil of water and earth. So all the constituents to make the preparations may be found in the outside world, but the spiritual concept of how these constituents are joined together is not hidden in nature as a natural law. It has to be found by spiritual research beyond nature in that realm where the being of man originates.

The first step is provided by nature itself. Different plant species have abilities to work with different earthly substances. (We will speak about this more tomorrow when we look at the yarrow preparation). This ability is the basis for the healing properties in our medicinal herbs. They are able to potentise earthly substances quite naturally within their living processes from the roots right up to the blossoms. The yarrow is able to work with potassium together with sulphur in a unique way. It is able to potentise the potassium, by its own living processes, to an ever higher stage, but then it comes to an end in the blossom. The camomile is able to potentise potassium and calcium; the stinging nettle, in addition to potassium and calcium also works with iron. It is specialised to potentise the iron process in nature and is therefore a kind of remedy for an abundance of iron radiation. The oak is able to work with calcium in a special way, as it is found in large, well-structured quantities in the oak bark. The dandelion governs the potassium in relation to silica; valerian masters the



phosphorus process. These special abilities of the different plant species are revealed through spiritual research; their own life processes are able to enliven within themselves, and potentise to a higher level, the dead, earthly substances. But this can only be achieved up to a certain limit, the flowering stage, and then it ceases.

There are another two aspects I would like to refer to. A spiritual one which I will introduce in more detail by way of tomorrow's theme, and a practical one.

In Rudolf Steiner's letter, 'What is the Earth in Reality in the Macrocosm?' [7] (he wrote these letters shortly before his death for members of the Anthroposophical Society) he speaks about the significance of the plant, mineral and animal kingdoms in relation to the formation of a future macrocosm after the development of the earth has come to an end. There he says the following. The plant grows from seed to seed. It germinates from a seed and ends up as a seed. But all the germinating forces that are at work during the growing process do not concentrate completely in the future seed; there is a superfluity which is not used up, so to speak. These excess germinating forces are donated to the etheric world and form the substantial image of the future macrocosm. Then he speaks about the mineral kingdom and says that also minerals ray out germinating forces as a surplus, and they direct these substances into a framework of the future macrocosm. The animals, especially the warm-blooded animal kingdom, do not emanate a surplus of germinating forces, but donate forces of form which envelops and creates a sphere around this future macrocosm. So the earth is not only the end of something, but at the same time it is as a whole, a germ for the future. Are we able to retain and work with these germinating forces in making the preparations? Is the inner secret of making the preparations, and that which we have to gain an understanding of in the future, that we are actually harnessing these germinating forces right now, so to make use of them in our manuring? Is it these germinating forces, which normally ray out and are preserved for the future in the etheric world, that we are able to introduce into nature via the preparations as a means of evolution? That is a question I just wanted to utter today, and will return to tomorrow.

I will now refer to some results of the working of the preparations. Since the beginning (1924), experiments have been carried out effects of the preparations. Of course above all a personal relationship has to be built up by anyone using the preparations: it is like practicing an art. But besides practical experience, scientific experimentation has proved to be of great significance. It has helped to deepen our understanding, to make applications more accurately and to promote a sound public discussion. Especially after world war 2 quite extensive experiments were carried out on the preparations, in connection to other questions. I am sure some of you will have had some observable results whilst working with the preparations. For instance, that within a very short time the manure loses its pungent smell, that the whole microbial decomposition processes are working in a different, more harmonious way. Bo Petterson ran a series of field trials with crop rotations, together with the agricultural university of Uppsala in Sweden. This experiment ran for 32 years, with different plots treated in different ways; one was fertilised with mineral manure, one with organic manure, another with organic manure and in addition the biodynamic preparations. The result of this long-term experiment is quite striking. I was speaking earlier about Images and the fact that we cannot see the forces themselves, but we can see the result of these forces. Bo Petterson was able to show, after 20 years, that not only the humus content

increased in the biodynamic section of the trial, but the fertile layer of the soil profile has deepened considerably. The humus content was not only concentrated at the surface, as in the minerally-fertilised plots, but reached much further down in the profile. This points to the fact that, as an effect of the compost preparations, the roots go far deeper in the soil, are far more finely distributed and make use therefore of a much larger soil volume. [8]

Another experiment started in 1980 at the Institute for Biodynamic Research in Darmstadt, Germany. Initially the main question was to find out the effect of compost preparations on food quality. This experiment was supported by the government, and carried out using the highest standards of modern scientific methodology, so it is fully accepted in academic circles. It was planned to run for four years but was extended to eight. The results showed considerable influences on the physiological fruit formation. When they had finished the experiment, the land was left uncultivated and at the beginning of the next season they went and looked at the area again, just by chance, and saw that the biodynamic plots in the statistical arrangement had a darker colour than the mineral and the organic plots. They wondered how is it possible that after 8 years on a sandy soil, the biodynamic plots which were scattered all over the area, showed a darker colour? So they began to experiment again, on the humus content at different depths and its quality on the root formation and on the microbial processes that take place. It is still going on, but the first result shows that the humus content after eight years remained the same in the biodynamic sections as it was under normal biodynamic conditions at the beginning of the experiment. In contrast to it the humus content of the organic plots dropped considerably and even more in the mineral plots. In the organic plots the same amount of compost was applied, with the same nitrogen level preparations. as on the biodynamic plots, but without the compost The organic sections had a higher humus content than the mineral plots, where the nitrogen had been added in an equal amount. So all the plots had the same amount of nitrogen added, but in different forms. Merely by applying the preparations to the compost used in the BD plots over eight years, the humus content had comparatively increased, not only in the top soil but also in the subsoil. The same result was observed as in Sweden, that the roots really penetrate into the soil. The second result was that the quantity of roots was more or less the same in all three sections, but in the biodynamic section the amount of fine roots, root hairs, was doubled in comparison to the mineral section. etc. It shows clearly that the roots are far more spread over the soil and subsoil and are thus far more intensively in touch with the earthly realm. The third result is the most extraordinary! The soil respiration, that is the release of carbon dioxide produced by the roots and microbes, highest in the biodynamic section. This normally indicates an was the immense decomposition of organic matter. But here there was a greatly increased respiration at the same time maintaining a higher humus content! That means that the microbial life was not doing what it normally does; decomposition. It behaved in the opposite way, ruled by a higher force to which it became servant. This is what Rudolf Steiner describes in the Agriculture Course about the effect of the compost preparations, mainly the first three, yarrow, camomile and stinging nettle. He says that these three generate nous. The soil becomes sensible. So the microbes do not act one-sidedly according to their decomposing ability but respond to a higher order. This higher order releases forces that direct the microbial life to build up stable humus and to maintain soil fertility on a high level. These experiments, which were set on up a sound scientific basis, have demonstrated what has been achieved through spiritual research: the compost preparations as a whole work in such a way that the physical substance, the manure and

finally the soil, become susceptible to forces of etheric and astral origin that are normally not, or not to such an extent, active in the soil [9].

## References

- (1) 'The Man who Planted Trees' Jean Giono, Peter Owen Pub. London 1989
- (2) 'Agriculture', a Course of eight lectures by Rudolf Steiner, 1924. Pub. BDAA London 1977. See lecture 5.
- (3) Phillippus Aureolus Paracelsus 1493 alchemist and mystic. 1541, Swiss physician,
- (4) Samuel Hahnemann 1755 1843, German physician.
- (5) Lili Kolisko 1889 1976, was the originator of Capillary Dynamolysis, a scientific technique, which has been applied to medicine, agriculture and other spheres of science. She and her husband, Dr Eugen Kolisko (1893 1939) worked together with Dr Steiner at the end of the First World War.
- (6) Lake of Constance alpine lake lying between Switzerland and Germany. Area: 209 sq. miles (541 sq. kilometres); 40miles/65km long up to 8miles/30km wide; average depth 295ft/ 90m. Max. depth 827ft /252m.
- (7) Rudolf Steiner's 'Letters to Members', published as Anthroposophical Leading Thoughts, Rudolf Steiner Press, London 1985.
- (8) Pettersson, B. and Wistinghausen, E. langjaerhigen Feldversuch in von: Bodenuntersuchungen zu einem Jaerna, Schweden, biologisch-dynamische Wirtschaftweise, Darmstadt 1977. Forschungsring fuer
- (9) For information contact Forschungsring fur Biologische Dynamische Wirtschaftsweises eV, Baumschulenweg 11, 64295 Darmstadt, Germany

## Second Talk 5.1.93

Today I would like to deal with the yarrow preparation, using it as an example to show some of the principle of the preparations, of their makeup and usage. Rudolf Steiner prepares our understanding of the yarrow preparation, and indeed all the other preparations, already in the third lecture of the Agriculture Course, This is when he speaks about the archetypal substance of life altogether: protein. The life of the animal and human kingdoms would not be possible without this archetypal substance of protein in the plant kingdom. As human beings we need to have this in order to take it in as a constituent of our food. We break it down completely in our intestinal digestion. This active breakdown of well-structured protein from outside enables us to build up our own protein. It is not the substance of the protein that is of any value, but its pattern. Its specific structure delivers a kind of model, which we perceive especially with the liver while the protein is broken down. In fact there are four organ systems that are involved in perceiving the protein pattern and they are able, in so doing, to build up our individual human protein. These are the kidney system, the lung system, the liver system and the heart system. All four are able to build up substantiality as it were, out of nothing, yet with the basis of the form pattern, this highly individualised protein. This is the reason why this archetypal creation has to take place first in the outside world, in the plant kingdom. Four elements correspond to these four organ systems within us: carbon (kidney), oxygen (lung), nitrogen (liver) and hydrogen (heart). These four elements, together with sulphur, constitute protein. In the Agriculture course Rudolf Steiner calls them four (respectively five) sisters. They are also broadly distributed in the outer world. We breath nitrogen (79% of the air is nitrogen); we breath oxygen; we find carbon in coal, sulphur in an elemental state, and hydrogen is everywhere. All these elements are carriers of forces. Carbon is the carrier of formative forces, oxygen of life forces, nitrogen of astral or sentient forces, hydrogen is close to the physical and relates at the same time to the spiritual world. It is the carrier of the forces that are released from the physical world into the cosmos. In contrast to hydrogen, sulphur is the mediator of the spiritual within the earthly realm. In the outer world these elements are more or less separate from one another. So it is a mystery how to combine especially the four elements, carbon, oxygen, hydrogen and nitrogen. In the plant kingdom this involves two substances that are polar opposites: sulphur and potassium. Thus we see that protein is formed when the three principles that were once well known in alchemy are equally at work: the salt principle potassium and related elements- the sulphur principle, and in between the mediating mercury principle the basic constituents of protein. Sulphur and potassium being representatives and carriers of cosmic and earthly influences help the mercurial archetype, the proteins, to come into being.

Whilst speaking about protein Rudolf Steiner introduces the compost preparations and refers to the mystery of how protein comes about in the right way in the outside world. He says there is one most miraculous plant which can be seen as a model for all the other plants, in the way it handles the sulphur and potassium process with regard to the formation of the archetypal creation of protein. He characterises this miraculous plant, the yarrow (*Achillea millefolium*), from the point of view of spiritual research and I would like to read his description [1]. He says of yarrow:

*"Take a plant which is generally obtainable. If there is none in the district, you can use the dried herb just as well. Yarrow is indeed miraculous creation. No doubt every plant is so; but if you afterwards look at any other plant, you will take it to heart all the more, what a marvel this yarrow is. It contains that of which I told you that the spirit always moistens its fingers therewith when it wants to carry the different constituents as carbon, nitrogen, etc. to their several organic places. Yarrow stands out in nature as though some creator of the plant world had had it before him as a model, to show him how to bring the sulphur into a right relation to the remaining substances of the plant.*

*"One would fain say, 'In no other plant do the nature spirits attain such perfection in the use of sulphur as they do in yarrow.'" (It is very interesting that Rudolf Steiner mentions the nature spirits at this point, and it is the only place in the Agriculture course where he does so). "And if you also know of the working of yarrow in the animal or human organism if you know how well it can make good all that is due to weaknesses of the astral body (provided it is rightly carried into the biological sphere) - then you will trace it still farther, in its yarrow-nature, throughout the entire process of plant growth."*

Spiritual Science widens our view and so first of all we should look at whether the yarrow reveals some of its miraculous nature in its outer form. When looking for yarrow, we see that its natural environment follows human civilisation. It appears in the open plains where sun and earth meet directly, in meadows which are only cut once -not so much in permanently grazed pastures along the roadsides and field borders; in an open area where sun and earth meet directly. We find yarrow more in dry than wet areas, more in loamy than sandy soils, and more in sunny than shady places. When we observe the plant itself, we see that the yarrow germinates in spring time and first forms a rosette. The leaves are pressed flat to the ground. All of a sudden, usually around the middle of June -this depends on the region of course - it shoots up very quickly and forms the first flower buds. Normally the yarrow blossoms during June, July and August, when the earth-cosmos relationship is at its utmost. But we can often see the yarrow flowering in September, October and even into November. When it wilts in late autumn or winter, what is left? We see the ligneous, solidified stems gathered in clumps all over the meadows which give the image of very sturdy plants.

Looking at the leaves, a real metamorphosis is visible. Although the leaves split up from a midrib and almost disperse towards the periphery into a range of leaf stems that fan out into tiny little spears, they show a complete leaf blade. The manifold pinnation ending up in points and spears very much relates to a strong sulphur activity. If we observe these points and spears in greater detail with magnifying glass we find astonishingly an almost succulent shape. This points to a strong potassium activity. The bottom leaves show a fairly long stalk and a well-developed longish stretched blade. Further upwards the stalk becomes shorter and shorter, the blade broadens into an oval shape. Coming nearer to the flower the stalk disappears, the leaf reaches towards the stem.

In the end the stalk becomes more lanceolate. It envelops the stem with its finely formed spears. So the leaves show a real metamorphosis. They are quite astonishingly dark green and very smooth, which in a certain sense contradicts the extremely pinnate form. If you taste the yarrow leaves they are very sharp and bitter at the base, and become more

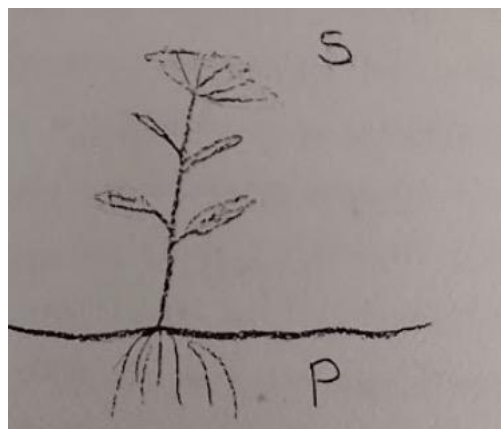
aromatic the higher you go towards the blossom.

Looking at the blossom we see the stem splitting into the umbrella shaped flower. It does not have a very distinctive, out-raying face as some other flowers do. It is rather more concentrated in itself and gives the impression almost of dried flower. It is white, sometimes pink, in a colour, but not very shiny, as if it would hold back some of its powerful force. The whole umbrella is composed of many flower baskets (umbels), which are formed of tiny little blossoms (pedicles). So the yarrow is truly a typical manifestation of the compositae family; its nature reveals an enormous differentiation (sulphur) and concentration (potassium). at the same time a great

One could say we have defined a polarity in the yarrow. On the one hand we have this sturdiness of the stem, with a strong lignifying tendency which causes them to last so long (one can often see them standing in the meadows the following year) and at the same time soft, dark green velvety and apparently succulent leaves. On the other hand there is a very highly developed flower and enormous segmentation of the leaves. This polarity of an earthly and cosmic influence can also be observed if we look at the roots. Of course they normally cannot be seen, belonging as they do in the darkness of the earth. But in the last decades much emphasis has been laid on root morphology. The yarrow roots are quite extraordinary, with many thin threads going down very deeply into the earth, like a stream. Again there is an inner activity, a motion, like in the leaves, but at the same time they are so firmly bound in the soil that it is almost impossible to pull up a yarrow plant. So there is the movement of the roots flowing down into the earth, but at the same time a steadfastness like in the stem. In autumn and winter, just below the surface, the stolons form runners which then produce new shoots early in the spring. Therefore we often find patches of these stoloniferous yarrow in open pastures.

The yarrow reveals the polarity of earthly and cosmic forces in a very distinct way. Its outer appearance is remarkable manifestation of the forces which its own being sends into the earthly realm in order to build up, supported by earthly forces and substances, this image of its being. What we perceive is not a reality, it is an image. The forces that build up this image are real, but imperceptible. They originate in the cosmic and earthly realm and are directed by the true being of the yarrow, which remains in the spiritual sphere. It is important to realise that what we see is an image, an illusion. But it points to a spiritual reality which works through two principles. One can be described as shaping the yarrow according to its cosmic archetypal form, causing that which brings about differentiation of the leaves and flowers, the scent, taste and colour of any of its organs and also its fragrance. We may call this the sulphur principle. On the other hand we have pointed to a diversified root system, the sturdy stem, the strong turgor pressure causing succulence of the pinnate leaves very similar to the round shape of the growing point. All these phenomena are caused by what we call the salt or rather the potassium principle. The latter gives the plant its outer earthly appearance, the sulphur principle governs the cosmic archetype they manifest. Affirming this polarity we may better understand why Rudolf Steiner, when speaking about the herbs that particular herbs are used for the preparations, speaks about in relation to certain earthly elements. In the case of the yarrow he speaks about the potassium and the wonderful, quantitative relationship between potassium and sulphur with regard to protein formation. He refers to this unique content of sulphur in yarrow in relationship to its ability

to work with potassium as being an ideal model within the plant kingdom. We must therefore now ask, what is the nature of potassium, where does it occur? We find potassium as an essential constituent all over the mineral kingdom, especially in mica, feldspar and therefore in great quantities in granite but also widely distributed as a salt. It is quite interesting that the quantity of potassium relates strongly to the quantity of silica in the earth's crust. The more silica there is, normally the more potassium can also be found there. Potassium is really an earthly element. I would call it the representative of the earthly realm altogether. It is, as all physical substances, submitted to physical, calculable laws which we can study in physics and chemistry. If we make an experiment and dissolve a potassium salt, for example potassium chloride, in water it will completely disappear in its crystallised state and dissolve. The property of the water will have changed according to the quantity of dissolved salt. When we then heat the water until it evaporates the salt is again formed, in exactly the same quantity and crystal structure. The laws of the physical realm finite and liable to are calculability. From this point of view it is justified to say the physical earthly realm is dead. It is highly disconnected from its spiritual origin. But potassium stands out through yet another property. It is 0.002% radioactive as it occurs in the earth's crust: it underlies a decay. What does this signify? Potassium is a physical substance at the border of the sub-natural world, the sub-sensory world. From beyond the border there are beings actively exposing the forces of electricity, magnetism and nuclear energy to nature. The nature of potassium as the representative of the salt-forming elements can be understood to be a link to sub-nature, marking the border, as it were. In contrast to it is sulphur substance the spirit "moistens its fingers with" the representative of those elements that are the link with the supersensory, the supernatural world, with the cosmos. So we find yarrow is a revelation of a very strong interaction of an extreme polarity. The interacting poles of sulphur and potassium as they occur in yarrow seem to be the fundamental basis for the ideal formation of protein.



The yarrow, like any other plant, takes in potassium by the roots. There the potassium as an earthly substance, with all its properties we have described above disappears. It leaves its physical environment and enters a living one. Of course we may find potassium to a certain extent still in a salty state in the roots. But in the process of growing and developing in the first still watery leaves and all the more in the successive ones, the potassium becomes estranged from its physical properties and instead takes on properties step by step that

relate to the living. Within the living sphere it becomes a carrier of Living forces: the result of these works in the formation of tissue, the scaffolding of the plant culminating in the lignifying tendency, and on the other hand in the swelling, succulent appearance. If you have a deficiency of potassium in soil and plant, on a very hot day the leaves tend to hang down. Evaporation is even increased because the stomata do not close properly. Their regulation and likewise the pressure of the juice in the cells, the so-called turgor pressure, is a function of potassium in the living context. Down in the roots the potassium still has salty properties: The further it comes up in the stem participating in the formation of the sequence of the leaves, it begins to be under the guidance of the sulphur, and is step by step potentiated towards the blossom in the sense of a continuous estrangement through its physical properties, its being bound in space. A real potentiation takes place in the process of time, that is in life as I described yesterday. The metamorphosis of the plant is an outer image of the potentiation of potassium and its related earthly elements within the course of the full unfolding of the plant. The further up we look in the plant from stage to stage, the more the potassium loses its definable physical properties and becomes a carrier of living cosmic forces, which are unquantifiable.

It no longer marks the border to the sub-natural world, it has been lifted towards the border of the supersensory world by the sulphur process. This is the mystery that takes place within the plant, in each different species in a highly specialised way. Yarrow is specially qualified to master the potassium-sulphur process in favour of an ideal formation of protein, the mercurial result of this functional polarity.

Here potassium is no longer detectable in the plant by means of chemical analysis. Of course we can find potassium again if we burn the plant to ashes, but then the plant is dead and what we obtain is salt. We cannot detect the potassium in the very state to which it is raised in the living sphere. The possibility of detecting radioactively marked elements in the living plant is not a counter-proof. It only shows that plant life is submitted to the conditions of its environment, as becomes manifest in the dangerous pesticide residues and other contamination frequently found.

Plant-life can either be weakened - it is then less able to estrange elements from their physically bound properties, especially the sub-natural properties - or it can be strengthened. This is a matter of appropriate manuring: a matter of dealing with the yarrow preparation for instance. It is impossible to detect the gradual transformation of potassium by the sulphur process through analysis. It comes to the utmost of dilution and potentiation, where the plant ceases to grow, where the flower develops. The question is, how are we able to give permanence to this culmination of plant growth, the flowering stage? Because the very moment the flower appears, it fades away. It cannot perpetuate itself, it just lasts a moment: it is a kind of *status nascendi*, the full opening of the flower towards the cosmos. Looking at the flowering stage of the plant we can make two observations. One is that the being of the yarrow appears as an image in its perfection in the flower, in the shape, colour and fragrance, but in the unfolding of the flower it comes to an end. The plant dies into the flower. There it is touched from outside by its higher being, which was at work all the time throughout the growing process. On the other hand we can observe this gesture of the flower opening towards the cosmos. We must learn to inwardly follow this gesture with our thinking and feeling: we might approach it with an



expression of total openness, devotion and willingness. Observing the flower we again meet a polarity. On the one hand the sulphur process, supported by the potassium process coming to an end in space and time in the blossom, leads to a perfect image of the true plant being. On the other hand if we follow the potassium process from the earth upwards, supported by the sulphur process, it begins in the dead state of salt, ending up in this infinite openness and a gesture of willingless will. This gesture of willingless will signifies an embryonic state to which, in my opinion, Rudolf Steiner is referring when he speaks about the plant releasing germinal forces into the etheric world [2].

The blossom fades away. Therefore the question arises, how can we preserve that which has come to an end and that which hides the potential of a new beginning in the blossom? How can we preserve that very moment before it fades away? There are three possible transformations to which the blossom may be submitted. One ends in seed formation. All the processes in the blossom are yet undetermined. It rays out its shining colour, its fragrance and aromatic substances, but the very moment seed formation takes place, all processes are determined to serve the newly formed germ. The seed has just to fall to earth and the new plant will shoot up. The second transformation of the fading flower is when it falls to the ground and underlies humus formation. Rudolf Steiner points to the third transformation, as mentioned above. It is the surplus germinal forces which vanish from the flower into the etheric world and become the substance for a future macrocosm. Our question is, how to give permanence flowering stage before these transformations take place? To me I think that Rudolf Steiner had this question in mind when he indicates the first step of making the yarrow preparation. The answer cannot be found in the plant kingdom. We must search for an answer in the higher, animal kingdom. We must find a technique, as it were, to lift the flower beyond its natural limitation, over a threshold onto a higher level, onto the level of astral effectiveness, which is present in the animal kingdom. The soul being of the animal has incarnated into space and time. All its organs are formed out of forces which work into the physical and living realm from beyond space and time. The plant is merely touched by such forces from outside; "the spirit moistened its fingers with the sulphur" and shapes the plant from the outside, while the animal is inwardly permeated by its astral being. Astral forces of the animal sculpt its organs into the stream of life and endow it with the ability to function in permanence. So we must seek on a higher level to find an answer to our question. We must look for an organisation to which the yarrow, as a medicinal plant, has a healing relationship. Rudolf Steiner says the yarrow "can make good all that is due to weaknesses of the astral body". Its healing force is very much related to all processes that take place in the renal system. In order to preserve the very moment of the unfolding of the yarrow flower, Rudolf Steiner recommends us to take the bladder of a Red deerstag. We will see why later. The first step of making the preparation is to gather the flowers and stuff them into the sheath, this spherical stag's bladder. This step is one of inversion for the yarrow. Previously the yarrow flower was open to the farthest cosmos. Now it is exposed to the astral forces that are working into and within this sphere of the animal sheath. Before the yarrow flower exposed itself in a willing gesture, the potassium process was potentised upwards into a germinal state. Now, within the stag's bladder, this substantial germ becomes the carrier of the astral forces which are transmitted and concentrated in the flower by the bladder. A complete inversion is performed. An outside process, which cannot proceed out of itself, becomes an inner process, the beginning of something quite new. But what about the bladder? It is an organ of concentration, of

substances which derive from the inner ensouled life of the animal. It is impregnated with the experiences which the animal had in its soul. They are drawn out of the blood stream by the kidneys and are released and concentrated in the bladder. It is an organ of excretion, very much aligned to the kidneys. The renal/bladder system is related to the most alert of the sense organs, to the eye. This fact can easily be observed, for instance, if you enter a cowhouse a bit abruptly. The cows, slightly shocked out of their dreaming perception, stare at you and within a very short time you hear a rush and a 'pat, pat pat' as they excrete their manure. The cow perceives you, but her response is not an intellectual one. She does not recognise you and respond to you with her head but with her metabolism. Her consciousness is in the rear, where the response from her soul being appears not as a spiritual recognition, because the animal has no ego, but as a physical excretion. Now we see how closely related the kidney/bladder system is to what we perceive with our eyes. The eye is the polar opposite to the kidney in its function. The bladder concentrates substances from the wide range of the inner life of the animal and excretes it to the outside world. The eye concentrates the content of unlimited perception from the outside world and then excretes it, as it were as a picture, into the inner life of the soul.

We take the bladder and the yarrow blossoms, both of which are completely disjointed from their origins. The blossoms are disjointed from the relationship earth-cosmos, from the natural life of the plant, and the bladder is disjointed from the reality of the organism of the animal. The blossoms are internalised, and the bladder, having been inside the animal, now becomes an object in the outer world. They are inverted.

Why do we use the bladder of the stag? Studying the Agriculture Course in this respect we may discover two aspects between which we have to distinguish. The bladder, especially of the stag, is an image of the whole cosmos, in its spherical form. So firstly we have to consider the form principle. The other aspect is that Rudolf Steiner refers to the special material substance of the bladder. It is formed out of the inner activity of this very sensory-active animal. A powerful stream of perceptions of the present effective cosmic-earthly environment enters its head and condenses to the material substance of the opposite pole, the metabolic region. Observe a stag or any deer. Its nervous alert eyes, its mighty antlers stretching out and growing as long bones through the skull, it is as if the whole being of this animal expands far beyond its head into the bright surrounding world. So secondly we have to consider the substance principle. The form is a replica of achievements from the past. All animals are a replica of the wisdom of the past, but in contrast the material substance is formed and built up by forces at work in the present. What happens when we put the yarrow blossoms into the stag's bladder and expose it to the spherical form and substance of the sheath? My personal answer is that the bladder, having been emancipated from its metabolic function in the animal organism, from the substantial aspect now becomes a sense organ itself, a kind of eye which perceives, transmits and concentrates into the yarrow flowers the astral forces working in the cosmic surroundings. Whilst the spherical form of the sheath enveloping the yarrow flowers and endowed with astral forces, preserves them and gives them permanence.

Proceeding to the second step of making the preparation, we take the spheres and hang them up above the earth, in the air and warmth, so to speak into the belly of the agricultural individuality where the expansion forces are at their strongest. We do this at the time when

the elements of air and warmth and the light and warmth ethers are at their most active, in the summer. In the third step we bury the spheres in the soil in the elements of water and earth. We do this during wintertime when the greatest contraction forces are at work in the head of our agricultural individuality and when the chemical and life ether are active, independent of being bound up in plant growth. The present cosmos works vertically above and below the earth in the elements of warmth, air, water and the solid earth, that is in space, and it works in time, as it were horizontally, during the seasons. So by exposing the bladder to these elements vertically in space and horizontally in time, it and its ingredients are endowed with etheric and astral forces of the present activity and revelations of the spiritual world. The flower of the yarrow, having been without will, is now raised beyond its natural limitation and ability to become the carrier of the will forces.

What happens during this second and third step of preparation making, whilst they are exposed to the elements? I already mentioned that, in the first stage, the potassium is taken up by the root and potentised right up to the blossom. This process cannot proceed any further. The blossom fades away and ends up in seed and humus formation. The first step of preparation-making has been to lift the potassium process, which has entered into a kind of germinal state in the flower, reflected in its willing gesture, beyond the threshold onto a higher stage. That happened enveloped in the stag's bladder. It created the potential to proceed to a new beginning. In the second and third steps of making the preparation this mere potential is being fulfilled by the spiritual forces working within the elements throughout the seasons in space and time. This means that the potassium is not only estranged from its physical properties and enlivened by the plant, but it is now open to be endowed with inwardness. This is my understanding of the aim of all the preparations; that physical substances are enlivened. Rudolf Steiner speaks about the aim of manuring: that it is to enliven the solid earthly itself. This can only be achieved if the physical substance is permanently enlivened. This is not the case in the plant. It dies continuously into form. The plant keeps the substantial process alive by growing on and on and by forming leaf after leaf. This cannot proceed in the blossom. In order to give the life process permanence it must be endowed with inwardness. This is what the animal can teach it. Its soul being keeps its life process streaming.

Looking at the three processes of preparation making we can say that the potassium is lifted through three stages of estrangement of its physical properties, from the border of the sub-natural, via the life process of the yarrow, to being endowed with forces of inwardness. If we try to follow this thought we might discover what Rudolf Steiner actually means when he discusses the work of the first group of compost preparations, the yarrow, camomile and stinging nettle preparations. He mentions that they are related to one another in generating nitrogen of a yet unknown, completely new quality in the soil. Together they are able to transform the representation of real earthly substances, calcium, potassium, and related elements step by step, into something similar to nitrogen, and finally into real nitrogen.

What is nitrogen? Rudolf Steiner points to it being the carrier of the astral forces. In whatever context nitrogen occurs in nature it is related to some astral event, to forces of inwardness. That nitrogen is an essential element of protein only goes to show that astral forces are already involved in building up the fundamental living substance. Normally nitrogen appears above the earth, being the main constituent in the atmosphere (79%). This

nitrogen is an evolutionarily completed, dead physical substance. It derives from the past, being the carrier of the Old Moon wisdom. All revelations of nature and the wisdom in it are due to the existence of nitrogen. One could say that it is a physical representation of what comes to us from the past. But with our yarrow, camomile and stinging nettle preparations we are producing a new kind of nitrogen, out of substances marking the border to the sub-natural world. We lift them out of their physical dead state to become permanently enlivened and thus transformed into a new substance which we may call nitrogen because it is a carrier of a new kind of inwardness, of an astrality that works from the future into the present. A new nitrogen is formed which does not relate to the past but to the future. I would say that the goal of all the preparation work is to enliven physical substances to become receptive to forces working from the future into the present. This opens the gate to a new evolution, or shall we say involution, into the future. The only being on earth that is able to have an active relationship to the future is the human being. All other beings represent an evolutionary end. They can no longer evolve out of themselves. I don't want to enter the debate at this point about the present materialistic concept of evolution and its reflection in the theory and technique of gene engineering. The soul body of the animal is more or less body bound. It lives out its past. The plant derives from the past, but appears in the present as a true image of the present earthly cosmic relationship. The mineral kingdom has already fallen out of evolution in the past. From this point of view it is up to us, up to our freedom, what kind of future development we will give to the earth. But when we guide a substance from the mineral kingdom through the plant kingdom into the astral realm, we enable it to become a carrier of future forces. Calcium, potassium and similar elements acquire an inwardness which, according to my understanding, is what Rudolf Steiner means when he indicates that they are transformed into this new substance of nitrogen. So biodynamic farming actually means that we take over the responsibility for the earth, not by just working in such a way that we continue what is there. This happens in ecological farming. But we need to endow what is there with future forces, so the earth itself can participate in the future development of mankind.

These aspects relate very much to what we eat. If we just eat what is there, the finished process in seed and fruit formation no longer provides adequate human nutrition. Our task is to change the inner quality of protein, this arch-creation of nature, together with our own development into the future. In order to do so we need to have such preparations, the summit of manuring, by which a new kind of nitrogen participates in protein formation. Therefore quite a new quality of food will come about. This is of great significance, but it is secondary. As a precondition it is more important that we endow nature with evolutionary processes as such.

I am very glad that we have the opportunity to talk about these far-reaching aspects here, seeking for a spiritual understanding of what we are aiming at with the preparations, although it is not an easy approach. I believe that to make such an attempt is justifiable due to the close proximity of the end of the century. It is almost 70 years after the Agriculture course was held. If we at the same time work with the preparations practically, then we have another sphere of experience. Being involved willingly we create within ourselves the 'soil' wherein these Images that we are trying to develop by thinking can germinate. I think it is through this inner relationship that a deeper understanding will increasingly come about. What we urgently need is such an understanding. It is the only source of renewal for the

biodynamic work and movement.

### **References.**

[1] Agriculture, a Course of lectures by Rudolf Steiner, 1924. Pub. BDAA London 1977. See lecture 5.

[2] Steiner, R., Anthroposophical Leading Thoughts 1924-25. Pub. Rudolf Steiner Press, London 1985. Also see Lecture 1.

If you read the Agriculture Course it should astound you; the language that Rudolf Steiner uses is quite unique. He speaks to farmers - natural scientists were not encouraged to participate. Obviously Rudolf Steiner did not really want anyone listening who lived more in the realm of thinking than really doing. The chemist, Ehrenfried Pfeiffer, a co-worker, was very keen to go to Koberwitz but was told to stay in Dornach. Many people thought that Rudolf Steiner, when talking to farmers, would speak out of anthroposophy in the style of fairy tales, as it were. It was just three quarters of a year previously that he had given the lectures about the elemental beings (1), and many people thought that as farming has to do with the elementary world, he would reveal all those beings that are active and at hand while one is working in nature in more detail. But nothing of this. Only once he refers in an oblique way to the elemental beings when speaking of 'the spirits of nature' in the context of the yarrow preparation. What language does he use? It is a new scientific language which at the same time stimulates will activity. Actually the Agriculture Course opens up a new chemistry, one of the living. What was its scientific content? I have spoken to quite a few of those who participated in the course in 1924, and they all said 'we almost drank in the whole course... we didn't understand very much'. I once told the story of Count Keyserlingk, when he was coming down the stairs in Koberwitz Castle with Dr Steiner after the third lecture and Rudolf Steiner kindly asked him whether he had understood the lecture. Count Keyserlingk replied 'Not a word, Herr Doktor!! So that was the situation. He spoke in the most modern scientific terms of that time. Right from the first and second lecture he spoke about silica and limestone, clay and the humus substance in the living earth realm. In the third lecture he spoke about protein and its constituents, oxygen, hydrogen, nitrogen, carbon, sulphur. Later he spoke of potassium, calcium, phosphorus, iron, arsenic, lead, and, in relation to the dandelion preparation, an element which does not yet exist in the periodic table. How do we understand these elements which have been separated out of their natural context by modern science. They did not exist as such in ancient alchemy, where the aim was not to define matter but to behold the principle of living processes. In the 60's of the last century, at the height of materialistic thinking, the whole of nature was split into its elements and the periodic table was introduced. In the lecture Rudolf Steiner did not refer to ancient knowledge but took up the contemporary scientific approach. He spoke in a way that will perhaps be understood in centuries to come! It is spoken in a consciousness which will be the common consciousness in the far future. The participants listening to it were not able to really grasp it consciously, but they had open minds to just receive it. Here in the Agriculture Course we encounter a fundamental law of modern initiation. This does not mean to just renew an old wisdom. Of course anthroposophy gives an understanding of the knowledge of the ancient mysteries, but it does not continue it untransformed. Modern initiation in the anthroposophical sense means to take as the starting point the knowledge of the present time and to extend it to relate to spiritual knowledge. Modern initiation does not take the ideas from heaven and bring them down on earth as in the old mysteries, but it is the other way around. The most advanced materialistic scientific achievements are the starting point for a knowledge of higher worlds.

Rudolf Steiner once described how he was able to write the book *Occult Science*, which ought to be familiar to biodynamic farmers. He was thoroughly familiar with the works of the leading scientists of his time: Darwin, Lyell and Haeckel. Haeckel, a brilliant scientist,

built up materialism to a world conception of monism. (2) So, studying Haeckel, Rudolf Steiner recounts that he took his ideas, neither saying they are false, nor right, but impregnating his soul with them. Think of what this means for a man who was fully conscious of the reality of the spiritual world, to freely concentrate himself on these utterly materialistic ideas. Then he describes how he conveyed them to the spiritual world. And as an answer from the spiritual world came the contents of Occult Science, the spiritual evolution of earth and mankind. In a similar sense I am convinced that the response from the spiritual world to the purely materialistic orientation of the nineteenth and twentieth centuries is the invention of the biodynamic preparations. It is as it were the answer to the dissection of nature into periodic tables.

Rudolf Steiner was well informed about what was going on at the top levels of science. In the course of this century materialistic science created modern agriculture by reducing all natural processes to the level of the elements as a common denominator. Soil fertility became a matter of a surplus or deficiency of elements. The single element, for instance nitrogen, became a measure of soil fertility. If we see it is lacking through analysis, we must add it. Hydroponics is a subsequent development of this way of thinking. The exact composition of elements is worked out by computer in relation to the needs of the developing plant, and according to the inorganic concept of cause and effect the plant delivers a pre-calculated yield. The materialistic concept of nature has been transformed into a mechanistic technology. Nowadays manuring usually means to take single elements and feed the soil. Rudolf Steiner earnestly takes his starting point in modern science, but develops it in another direction in the Agriculture Course. There he refers to the compost heap and speaks about a different level of reality, pointing to the origin of organic matter coming from the plant kingdom. This organic matter decays and living forces are released. That is one level of manuring. Another level is the ensouled matter that derives from the animal kingdom. Cow manure for instance is not simply a composition of a wide variety of elements. Its unique manuring power derives from the ensouled forces it releases. If we work on the mere inorganic level with artificial fertiliser, we are able to calculate their effect. The matter and its properties, the electromagnetic forces, are in balance. In the living sphere the balance is shifted in favour of the forces. In relation to artificial fertilizer the composted manure is more effective than the mere matter it is composed of. There is a surplus of living forces in relation to the amount of substance you add to the soil. On the level of ensouled matter, for instance, cow manure is the highest state of manuring power in nature. There the manuring effect is far higher than the amount of material components would suggest. Now one of the fundamental questions of the Agriculture course is whether there is a manure that contributes even higher forces in comparison to the amount of ensouled animal matter? What may our contribution be from the spiritual level as human beings? The answer is the preparations.

I would like to refer to the preparations from a special point of view, summarising how the six preparations are related to one another. Is there a deeper interrelationship in their sequence?

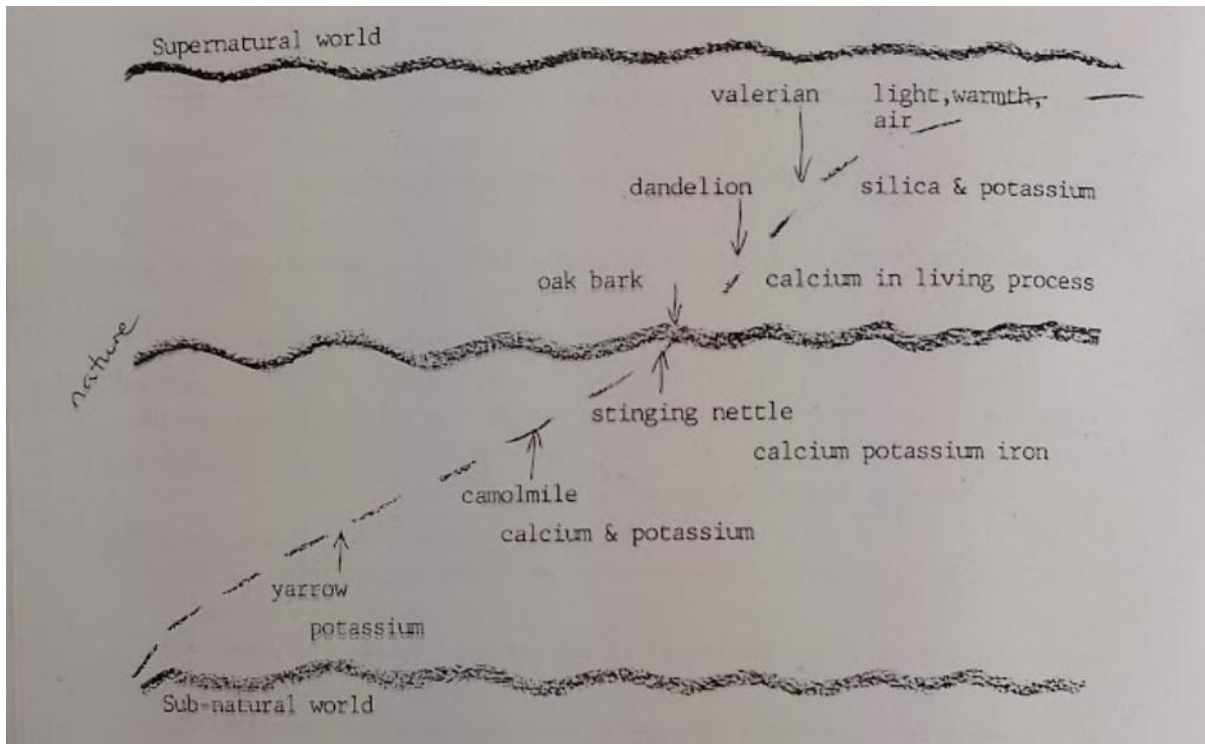
Considering the relation Rudolf Steiner points to between the herbs and the physical elements they are specialised to work with, we have seen that yarrow is highly capable of dealing with potassium. Potassium forms salts which are pure matter. Within the mineral

realm it somewhat marks the border to the sub-natural world because of its radioactive properties (0.002% of the potassium in rocks is radioactive). So the yarrow really has the capacity to adapt and work with an outstanding representative of the earthly realm altogether. This happens with the help of sulphur. Camomile works with and is able to overcome the physical state of potassium and calcium. Calcium is a substance which is not a main constituent of the depths of the earth. The limestone deposits are to be found nearer to the earth's crust. The calcium activity has very much to do with sucking in the forces of the inner planets that are working above the earth. Calcium therefore has a closer relationship to what is immediately below the surface of the earth.

The stinging nettle works with potassium, calcium and iron. In its working it comes nearer to the earth's surface. It is the stinging nettle, together with the camomile and yarrow preparations, which introduces what Rudolf Steiner calls nous to the earth. That is, organising the soil processes as if they would be governed by a higher organism. So these three preparations are active in vitalising the earthly realm itself. The oak bark is characterised by the quantity of calcium distributed in it. It has passed through the life processes of the oak and has been excreted into the bark. This signifies its special quality. It is a different quality of calcium to that below the earth. The oak bark is formed above the earth, the oak being turned up earth, so to speak. Due to its special quantity and distribution we use the harmonizing and healing forces of the oak bark where the earthly element of calcium in its working is just as near to the soil from above as the stinging nettle is from below.

Next in the sequence is the dandelion which has the capacity to produce a substance which is not mentioned in the periodic table. It relates the silica which is distributed throughout the atmosphere in homeopathic doses, to the earthly potassium. Rudolf Steiner calls the dandelion 'a messenger of heaven'; that is, a mediator of the forces from above and not from below. Dandelion has the capacity to relate a cosmic substance, the homeopathic silica, to the earthly element, potassium. The main activity is to draw forces in from above. This is even more the case with the last in the sequence, valerian. Its function is to be a mediator of mainly warmth suspended in the air and the etheric forces beyond. It is active at the borderline between nature and supernature.





Looking at the relation of the different elements to the different plants we can see the more we come towards the valerian it links the working of the supernatural to the earth, and the more we come towards yarrow it mediates the working of the earth's depths. The polarity of the forces of light and darkness is balanced out. From the point of view of the agricultural individuality the first three relate to its head, promoting its sensory activity towards the middle, while the other three are working from its belly' to activate the metabolic forces of will power towards the middle sphere. This polarity in the sequence of the six preparations can become even more visible when we look at the sheaths.

The yarrow flowers are encapsulated in a stag's bladder. The bladder manifests the end of the metabolic processes, concentrating what is excreted to the outside world. Camomile flowers are filled into bovine intestines, which mark the beginning of the metabolism, where digestion takes place. The stinging nettle is related to the rhythmic system, to the heart. The stinging nettle does not require an animal sheath, because it has such strong astral forces. Normally the astral being of a plant is itself reflected in the flower. Looking at the shape and colour of a lily or rose, for example, we are deeply impressed by this revelation of astral forces. The stinging nettle has a very insignificant flower which is quite hidden in the foliage of the upper part, but the whole plant can be perceived as being a flower. The stinging nettle does not impress the eye so much as the sense of touch! We feel this burning intensity. It is a different kind of revelation of the astral to looking at the colour and shape of the flower. The flower leaves us free in our feeling observation whereas the nettle directly affects our will and feeling body. It relates to the heart. Rudolf Steiner indicated that the stinging nettle should envelop the heart. So its inner nature is to envelop an organ, rather than the other way round. Of course the heart has small inner spaces but one cannot really fill these cavities; it is not a real sheath. The heart has an inner and, in connection with the circulatory system, an outer activity. So too the nettle. It is just as active to the outside, for instance

guarding itself with its stinging silica hairs, as to the inside, harmonizing itself by its strong healing capacity. Its astral body has permeated the whole plant and provides its own sheath.

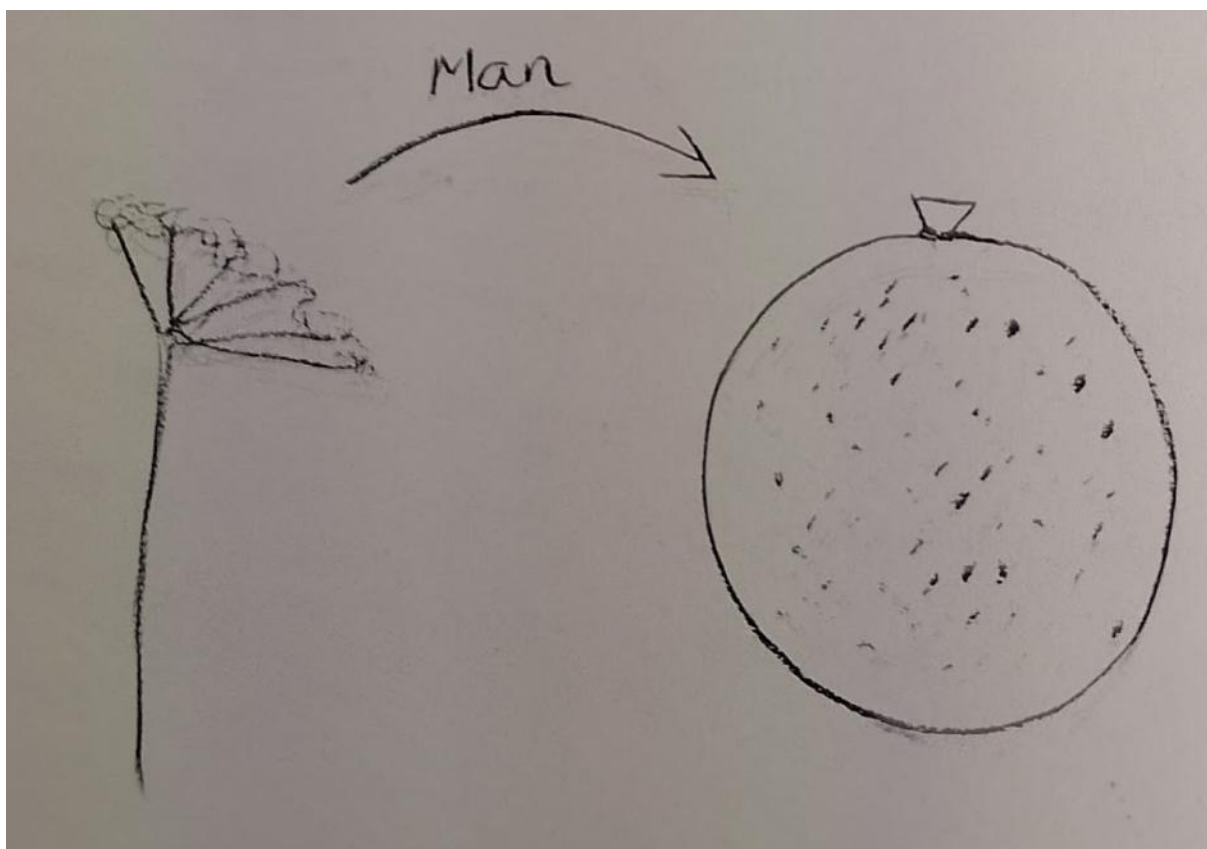
Considering the oak bark, and the skull into which it is filled, we proceed to the sensory pole of the animal, the head. We seem to have reached the end. How can we get any further than that? The dandelion is enveloped in the mesentery, which seems to be a turning back to a metabolic organ. But is it really a reversal, or a continuation towards a more highly developed 'head'? If we develop our astral body it is transformed into the spirit-self. The cow, from which we take the mesentery, has no spirit-self as it has no ego. But it is endowed with a very highly developed astral body which is open to its group soul. The head is not endowed with it. Towards its head the cow becomes dull. On the contrary, this uniquely developed astral body of the cow is concentrated in the mesentery which envelops all the inner organs of metabolism. The mesentery is interwoven with nerves. The solar plexus is a part of it. This signifies that the cow perceives something through its inner nature, not primarily through its head, about the inner nature of matter which it analyses while digesting it. When the cow takes in food and chews it a most intensive living activity of perception takes place, especially by the life sense, via the mesentery. In this context the significance of the cow's horns can be fully understood. The horns, situated on top of the head, reflect the immense etheric forces which are released by digestion and which stream up into the horn bone. These forces are reflected back into the inner heaven' of the mesentery. Just as we look up into a starry heaven, so the cow looks into her own inner heaven where she perceives by reflection what she has taken in as food from the outside world. Through the digestion of fodder she perceives the outside world and thus the inner nature of matter is revealed. It is for this reason that we can look at the cow's mesentery as a more highly developed sensory organ. The mesentery is really an appropriate sheath to preserve and maybe even enhance this wonderful capacity of the dandelion to be a messenger from heaven. Thus the cow mesentery is not a metabolic organ but a sensory organ which continues on from the skull preserving the oak bark.

Proceeding to valerian we see it is not like the stinging nettle which has the unique capacity to envelop itself. Valerian is enveloped by the cosmic circumference. It forms a sheath of warmth wherever we spray it around the compost heap, or maybe around the crown of a tree. It may be regarded as a continuation beyond the working of the dandelion.

So looking at the plants and their sheaths we have found an inner relationship in their order. If we consider the working of the preparations the same order in their sequence can be observed. The yarrow, camomile and stinging nettle preparations form a unit. They work from beneath the earth, transforming dead solid earthly matter and so enlivening the soil. Oak bark, dandelion and valerian also form a unit. They enhance and enliven the plants themselves, drawing in forces from above via the manure. The oak bark makes the plant resistant to diseases. The dandelion enables the plant to become sentient for the earthly substances it needs. Valerian surrounds the plant life with a warmth mantle.

To conclude I would like to ask what is the spiritual contribution of man in working with the preparations? Because nature provides what we have spoken about so far as nature's deeds. Nature provides all the components of the preparations. The first step of our contribution is to grasp the idea underlying the preparations. They are the result of spiritual research by

Rudolf Steiner and can only be comprehended in the context of the whole of anthroposophy. Comprehension in this sense means to deepen our understanding of the spiritual insight that the yarrow has a particular function. It is placed in the bladder and finally exposed to air and warmth during summertime, and water and solid earth whilst buried in the soil during winter. We must open our minds to the background of these ideas. We must come to an understanding of the beginning, the alpha, of the evolutionary process of the yarrow, or the bladder. We hold the end of the evolutionary process, the omega, in our hands. The underlying idea to relate the components of the preparations to each other derives from spiritual research which reaches into the realm of eternity where the beginning, the alpha, and the end, the omega, are joined. This requires a continuous effort to study the Agriculture Course, having as a background the whole of anthroposophy, not merely reading it but weighing it word by word and entering the sphere out of which these words were spoken. We must learn to penetrate beyond the spoken word into the realm of imagination and inspiration. To widen our spiritual cognition is one challenge. Through this spiritual understanding our will is activated. But by mere spiritual recognition no yarrow preparation will ever come about, We have to actually make it! But what is our contribution in this process?



It is to lift the yarrow flower, which has come to an end at this stage, beyond its evolutionary reality. This happens when we put it into bladder, into a higher reality of inwardness provided by the astral of the stag. We are active in building a bridge from here to there. with our will guided by spiritual insight. Nature provides the past, she is not able to build this bridge. Our will and our insight provide the future and therefore we are able to combine

what has developed separately. The next step is to hang the bladder above the earth and expose it to warmth and air in summer. The third step is to bury them in the soil in wintertime. Again it is our activity and insight to link what would never come together by itself. This work enables us to become increasingly involved with our whole being in this process. We deepen our feeling of what happens during summer and winter on our farm at the very place where the preparations are exposed to the seasonal influences. Through this activity of thinking and willing, we might be stimulated to sense with our feeling those spiritual beings active in winter or in summertime. We are conscious, for instance, of the indications of Rudolf Steiner about the work of the archangels (3). Gabriel is working from beneath the earth in summertime developing nourishing qualities in fruit formation while Uriel is governing the realm above the earth, judging what is right or wrong. This spiritual activity of the archangel sphere is the inner content of what we experience as light, warmth and air during summertime.

These filled bladders become sense organs for the astrality that lives within light, warmth and air during summertime and when they are buried in the earth in winter they then become a sense organ for those forces at work there at that time. In winter Gabriel works from above in his loving gesture and Uriel, working from beneath the earth, stimulates the force of thinking: When we expose the preparations to the outside light, warmth or air we expose them in reality to forces working therein, and we prepare the preparations in such a way that they are receptive. It is through our activity and free will that the preparations become receptive and are carriers of these powerful workings.

I wonder if you have ever thought about what actually pushes you to work with the preparations? You might have become interested by reading some guidelines and decided to start working with them more or less through confidence and belief. But step by step, in making and applying them the inner urge arises to work towards an understanding of their spiritual origin. The more you develop this spiritual activity while doing it the freer you become and you are less stimulated from the outside. The more we understand what we are doing the closer we come to self-determined freedom.

When we dig up the preparations there appears a humus like substance, yet almost nothing substantially. We take a tiny portion from this and put it in holes we have made in the compost heap. We cover it over and leave it. Powerful, harmonising and transforming forces unfold and govern the decaying matter. Beyond observation something happens whilst quite hidden within the heap, the result of which is spread out on the land. Have you ever thought about the fact that Rudolf Steiner talks about six preparations. Why not seven, if you think about the significance of the seven planets for instance? I have come to the understanding that there is a seventh. It is the developing soil itself, now enlivened in its fertility by these six preparations via the composted farm manure being spread over the whole farm. It is our aim, and Rudolf Steiner describes it in the Agriculture Course, to enliven the solid earthly itself. The soil can be viewed as the seventh where all six preparations are combined in their working and develop the seventh, the diaphragm, which is the middle sphere between the head and belly of the agricultural individuality. Our contribution in this unique process is to transmit one stage to the next. This activity requires our thinking just as much as our willing. In between, our feeling is the gate through which we learn to understand what comes to us by spiritual insight and by exercising our will. This opens a space for us to act in freedom in

nature's realm of necessity. The highest we may contribute to our natural environment in the future is this freedom born out of spiritual insight.

## **References**

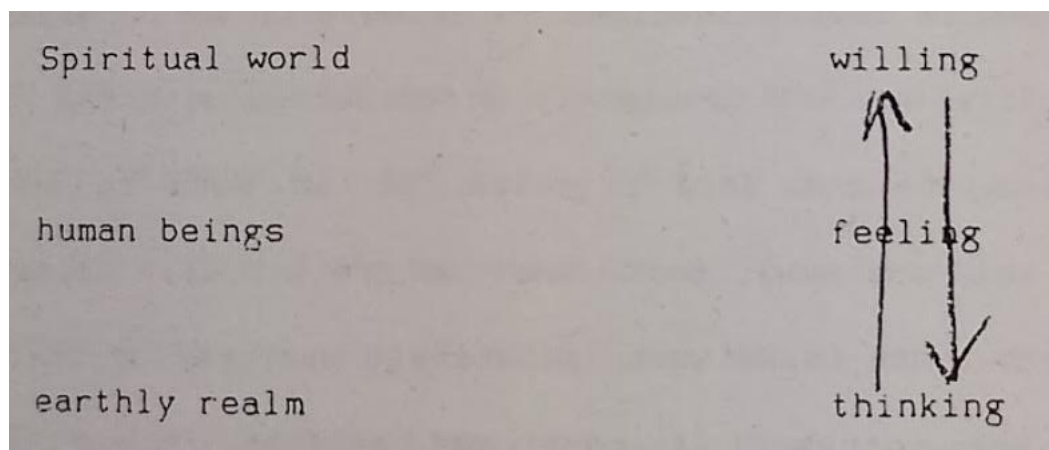
[1] Rudolf Steiner, Man as Symphony of the Creative Word. Rudolf Steiner xPress, London 1991.

(2) Ernst Heinrich Haeckel (1834 - 1919). German scientist born Potsdam. His most popular work The Riddle of the Universe explains the universe as brought about by purely natural causes, without the intervention of any divine power.

(3) Rudolf Steiner, The Four Seasons and the Archangels, Rudolf Steiner Press

I would like to speak about two themes. One is the human element in working with the preparations, and the other is a special aspect of the sense-organs of the sheaths.

First of all the question I would like to deal with is what is the reality of these preparations? Beholding the world, the only reality we are really fully aware of is that of ourselves as ego beings. The human being is actually a citizen of two realities which are concealed from him. There is on the one hand the spiritual world into which he reaches with his own spiritual being, and the earthly physical world in which he stands with his physical being.



We relate three soul faculties - thinking, feeling and willing - to these two poles. These three abilities are still very much underway in their development. In our willing we are in contact, although unconsciously, with the spiritual reality by submerging into it in our everyday work. Also we enter the spiritual reality when we fall asleep every night. This unconscious encounter during our sleep enriches us with new impulses. The counter pole is our thinking, where we are fully awake and conscious but disconnected from the spiritual. We only touch these realms by thinking. What enters our consciousness is the sun illuminated surface: the outer image of the creative being behind. We develop an onlooker consciousness. We are not able to penetrate the outer appearance. In the middle our feeling is active, half consciously, in a more dreaming state, merging the two poles and awakening thereby our self-consciousness. That is the situation of the human being nowadays. The evidence of our self-willing is manifest in our feeling. The present constitution of the human soul is such that these three faculties are merged into the unity of our conscious being. But we are passing a threshold to a further development of these abilities. In beholding ourselves we can become aware that we think something most clearly and yet may do the exact opposite! For instance we drive our cars knowing the damage they do to our environment. Or there are large numbers of people deeply involved in scientific work experimenting with gene engineering, who are completely disconnected with the reality of where their results are put into practice. So we seem to know almost everything except this one small part: what we are actually doing. And the feeling life is left alone in between, separately nurtured by the media for example. Passing the threshold I mentioned earlier, these three soul more independent. The more they are falling apart, the more we are challenged to strengthen our ego being to harmonise these diverging soul abilities consciously. In so doing we step onto the path of

inner schooling towards higher knowledge. That means we learn to feel the dark and light aspects of our thinking, and develop the faculty of imagination with our thinking, inspiration with our feeling and intuition with our enlightened will. This marks the direction of recognition into the future. These three faculties can only be developed when these three soul abilities become independent in the soul and are governed by our ego being. Rudolf Steiner developed these faculties to a far advanced extent and thus became a researcher in the spiritual world. He can be regarded as being the modern representative of humanity who developed, independently of the physical body, receptive organs by which he was able to sense and become conscious of the different regions of the spiritual world. From these realms, by spiritual research, the preparations have come about. When Rudolf Steiner came back to Dornach from Koberwitz he gave a lecture reviewing the Agriculture course and mentioned that 'Anthroposophy relates to the highest esoteric and practical' [1]. And truly in the Agriculture Course the highest spiritual reality is combined with the most practical life in the physical world, the result of which is the invention of the preparations. We can look upon the preparations as being very closely related to the human being, as the three most advanced faculties of recognition radiating into the spiritual world have brought them about. As Rudolf Steiner widened his ego being in full consciousness to the polarity of both concealed realities, he was able to create a new technique in the living sphere which is justified by the truth endowed in it. With our normal onlooker consciousness we deal with the preparations and recognise that they do not correspond right away to our thinking, feeling and willing.

So working with these preparations we must become aware that we must work on our thinking, our feeling and our willing at the same time. The first question we have to pose is, are the preparations simply recipes out of spiritual science? Don't they work for themselves once they are made? Is the human element an essential condition for their working? In attempting to answer we must first say that the spiritual concept of making the preparations cannot be found in nature. You might observe nature as precisely as possible but you would never discover the ideas to make preparations; they are not inherent in the wisdom of nature as evolutionary fact. They derive from spiritual insights resulting from research into the spiritual origin of nature which has developed further since it has physically come into being. Something new is added by the human element. I would like to put our relationship to the preparations into a picture. It is like a painter who intends to paint a picture. He takes his canvas, his palette and his brush and starts painting. After a while, when it is finished a visitor comes along and looks at this picture and, although he hasn't created it himself, he may be inwardly enormously moved simply by looking at it. When we make the preparations we have to consider two steps. We make them; that is like painting the picture. We create a reality. Then we take this picture and offer it to the beings active in nature and they, although hidden, look at it, so to speak, and are moved by the moral perspective giving activity.

First of all we can study word for word how Rudolf Steiner introduces the preparations. We have to do it as regularly and intensely as possible. In the end we ought to know the Agriculture Course by heart. So our first approach to the indications in the Agriculture Course is through thinking; we ought to think how the words and indications are linked to one another, having been spoken out of imagination, inspiration and intuition. If we take for example the dandelion preparation, we ought to find out, through thinking about it, why he

speaks about the dandelion as being a messenger from heaven. Try to picture the relationship between the silica in the cosmic environment and the potassium process streaming upwards from the earth via the root. Think over the relationship between the flower and the mesentery, and how the finished preparation makes the plant sentient. Take the words the spiritual researcher uses as a phenomenon. The phenomena of Spiritual Science are the words which the thoughts are clothed in. We meet these phenomena with our thinking in the same sense as we meet the sensory world by natural science. The spoken word in the Agriculture Course is an outstanding expression through which the spiritual world appears to us as phenomena.

In a second step we must try to learn to feel beyond the words into the realm out of which they were spoken. We must try to feel how the indications are related to one another and thereby feel into the sphere of intuition. So we might build up and paint ever and again an inner picture which becomes more and more alive and releases the enthusiasm to really get down to work and make the dandelion preparation, for instance.

In making the preparations we are not primarily involved with our thinking, but we expose our will by going out at the end of April to collect the dandelion flowers in a basket. Wandering over the pasture, we might just stand still for a moment and dwell on the situation we are meeting there. Try to feel the mood, the springtime atmosphere, this bright yellow-spotted pasture with the urgent green growth underneath. Try to feel how this single dandelion plant, ever since last spring and throughout the summer, autumn and winter, collected from heaven and earth enormous powers. It has concentrated them to lift up this stalk for a moment and open its flower so we can gather it. Try to behold all the details you have observed whilst gathering the flowers. Take a spade and have a look at the roots, how they grow down to seek out the potassium in the salty earthly realm, and try to picture how this process is transformed in root and stalk in the white sap pressing upwards. Try to picture how the leaves are shaped and arranged in a rosette. Observe how, during the course of the year, maybe over a hundred leaves are formed. Behold how such a plant develops within its rosette a metamorphosis towards the flowering stage of the shaped leaves. Be aware how overnight the plant lifts up a second storey, a loft of single florets that form this one bunch of the dandelion flower. And finally admire how, in the space of a few hours, the flower bases bend down and form the sphere where the seed appears ready to be carried aloft on its little umbrella. So while standing still there we can build up an image through thinking, through feeling and by being willingly involved. The outer apparently simple deed of gathering the flowers is accompanied by building up this inner image which may become ever richer. Having dried the flowers in the loft, the first stage of preparation making follows. We take the dandelion flowers and wrap them in a mesentery. We sew it up into a parcel. In this step we are fully challenged humanly, because it really becomes a free deed. Nothing pushes you to do it. It is simply a spiritual insight which we have internalised and work out of. It seems so easily done and not especially significant. And yet what are we doing? The dandelion flower is led beyond its natural destiny, which is seed formation. It is combined with something beyond, a sheath from the animal kingdom. Spiritual insight has led us to use a mesentery. We normally obtain one from a slaughter house, but ideally we would slaughter a cow ourselves. We do not do so, because we are not qualified to, but we should ideally be present at this event and observe the incredible beauty of the inner world of organs when the dead cow is opened up. It is as if the curtains of the astral heavens are



opened. Experience the colours there and smell the inner astrality that is suddenly released of such an animal. We can try to sculpt these wonderful forms in our minds and behold their profound composition. We can take out the mesentery and see its transparency. Thus we get a true picture of the mesentery in the context where it has been formed in the animal.

Then we take the second step of preparation making. We dig a hole and bury these parcels of wrapped dandelion flowers, covering them with an earth layer. Again it seems an easy deed, and yet it is a tremendous challenge to our will because nothing forces us to do it. The more we enter this step with our understanding the challenge, the more our free will matches this. In the second step we not only combine elements of the plant and animal kingdom, we also relate them to the mineral realm. In doing so we lead our thinking and feeling into our will. We search for appropriate spot, maybe at the edge of the pasture, in the orchard or garden, and there in a sheltered spot we dig the hole. We put the parcels in the hole. Before covering it maybe we put some elder twigs over the dandelion parcels so that the animals won't get to their wonderful contents. After we level it up with earth we stand still and dwell upon how the atmosphere is on the very day we do it, maybe Michaelmas, or some sunny golden day in October. Try to feel the autumnal atmosphere. We try to sense that this deed can be a fulfilment of celebrating Michaelmas. We might feel that our deed stems from a spiritual concept which has been brought down by spiritual research out of the realm of Michael into the earthly realm enabling us to make these preparations. Michael governs this spiritual concept. He shows us with his directing gaze the path to follow to put it into reality and leaves its realisation to our freedom. He delivers the concept. At this stage of our work we try to feel such an image and at the same time we observe the conditions in the outer world, of the earthy, sandy or loamy nature of the soil. What kind of rock underlies it? Is it sandstone for instance, or limestone or granite? We must feel right down in the darkness of the solid rock that enables us to stand up. Furthermore we should picture the situation of the surroundings; perhaps there is a fruit tree nearby, a hedge or a garden wall. In winter we might come to this spot. We remember what we experienced in autumn and compare it to the frosty atmosphere we are now in. Perhaps snow covers the earth, and crystallising forces penetrate the earth. We try to imagine how are the forces relating to the dandelion flowers wrapped up in the mesentery. Thus we accompany the preparation process throughout the year and, by building up these pictures we enlighten our will and our thinking pictures the surrounding while our will is active. Thus the image is more enriched and can be sensed in its spiritual reality. In springtime, when we dig up the dandelion, we try to picture the situation that we encounter once more. We perceive the colour, smell and structure of the dandelion remains and compare it to what it was like in autumn. Again we stand still and dwell upon the unique phenomenon which we have created. What we have is a completely newly formed substance. It is humus like and thus belongs to the earthly realm and yet it has become a carrier of a spiritual reality. What we have in hand is a germ in substance and force, wherein the cosmic and earthly realities are united but yet concealed like in a seed. We are the creator of this new kind of seed. It is completely different from, and even polar opposite in its function to, a plant seed. A plant seed contains, impregnated in its mineral substance, the cosmic form of a plant. This form is present as a spiritual reality in the seed as a germ, seed unfolds, as a potential. When the plant seed unfolds, this potential is determined into this specific physical form. It becomes a defined outer image of its cosmic reality. The seed we are producing by making the preparations is different in its germ function. It does not contain a cosmic reality as a potential, an ideal form which may then

unfold into an outer image. It contains a potential to germinate as itself, a substance. It is the potential to enliven the earthly. When the preparations are placed in a compost heap or manure heap, they unfold a germinating force in the physical realm. What unfolds is not an outer image. It is the cosmic reality we are dealing with which opens the mineral world up to the processes in time.

The second step I was speaking of is applying the preparations. We are deeply involved with our thinking, feeling and willing, and must learn to harvest all the fruits of our efforts and of our experiences over time. We take a tiny little amount of this newly formed compost or substance, put it into the dung heap. We try to build up a picture of the decaying matter, of the microbial world being active in a destruction process which tends to end up in mineralisation. In this decaying, the preparation now radiates forces that stand against this decay and have the capacity to transform the manure heap to a kind of organism. The decaying forces are thus balanced out by the working of the preparations. When it is ready we take the compost or manure and spread it onto the land, the diaphragm of the farm individuality, the soil. So we go out in the field and observe how the manure has now been worked in and try to imagine how, from above and beneath, the spiritual reality is uniting with the middle sphere. We must open ourselves in our inner being to the reality we are creating. Don't just leave it and let it happen in the sense of cause and effect. If we accompany this process consciously all the time we really do produce a work of art. We are painting a picture which is perceived by the beings active in nature. Until now we have only followed the steps of how the dandelion preparation comes into being. But try to imagine the richness of all six preparations and the manifold interweaving images we may perceive throughout the year while making and applying them. When we penetrate all our work with these images we may become true biodynamic farmers. We are obliged to do most of our daily work with machinery, but working with the preparations we have a space within our activities where we really can exercise our free will and are able to converse between our inward being and the outside world. With this attitude we overcome the onlooker consciousness that sees it as a matter of cause and effect. But working with the preparations, building up this inner richness, we eventually behold ourselves as a creator of what happens to the interior of nature. We recognise it as our deed relating to our judgement. With this 'seed' we endow nature not only with a substance, but also with the devotional consciousness of our spiritual being.

I want to refer to one remark Rudolf Steiner made in a lecture given in 1911. There he said we will see in the course of this century and all the more in future the decaying of the earth, of all our natural environment. He continues by saying that we will be very sorrowful about it, and yet when we are really aware of this decaying world we will see that since the beginning of this century all of a sudden here and there something refreshing will spark from it. And finally he mentions those who are able to look into the background of this appearance can recognise new elemental beings which will become the servants of Christ. They come into existence through a new relationship we seek to build to the decaying earth [3]. With this in mind imagine what we are doing in making and using Preparations. In making them we combine out of spiritual insight what is

separate in nature. When using them we implant in nature a new material, the composition of a new quality, which cannot be defined. The wisdom which reigns in nature is finite and somewhat defined by the ruling laws. But the quality of the matter we are now implanting is the most irrational. It is in its essence related to the quality of love: love is nothing but enlightened selfless will, the inaugurator substance of all future development. Love is the virtue to redeem, heal and transform all social distress. Why should we not be able to externalise this virtue and produce a force of irrational quality which redeems, heals and transforms what is in a state of natural decay in nature? While working with the preparations I think we have to bear in mind this picture that we really do plant something into the Earth that she longs for but cannot create herself. It needs the free deed of man.

Now I want to look at another aspect. We are dealing with six preparations

valerian

dandelion

oakbark

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stinging nettle

chamomile

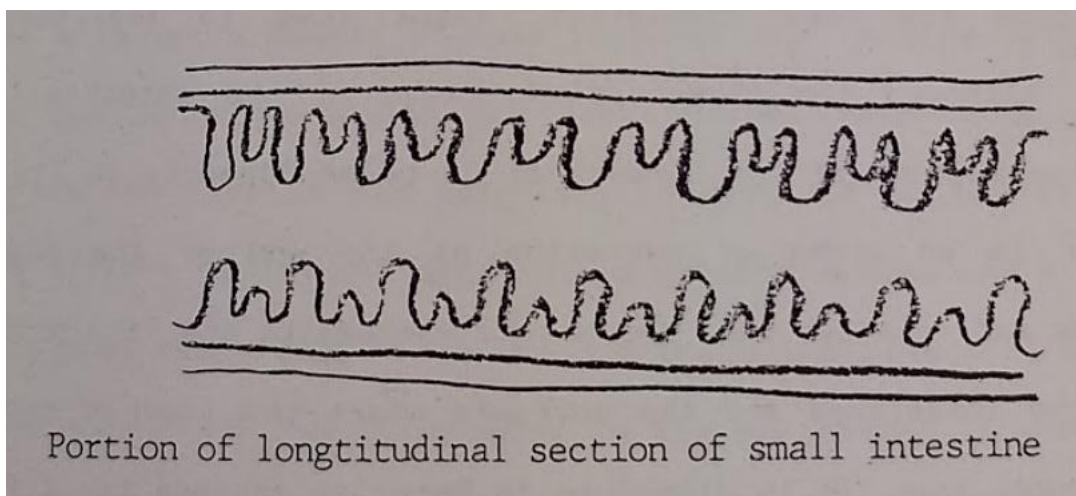
yarrow

If we follow up the sequence we see as I pointed out in last years conference (see previous talk) that the first three and second three preparations belong together. Seen from the earth's surface the first group works from below upwards, the second from above downwards. They form a polarity and in the midst is the diaphragm, the soil, where the plant sends roots downwards and the stem upwards. The third of each group, the stinging nettle and valerian, don't require a sheath. All the others require animal organs as sheaths, each of a different kind. If we look at the sheaths from the point of view of their sense activity we also find a polarity.

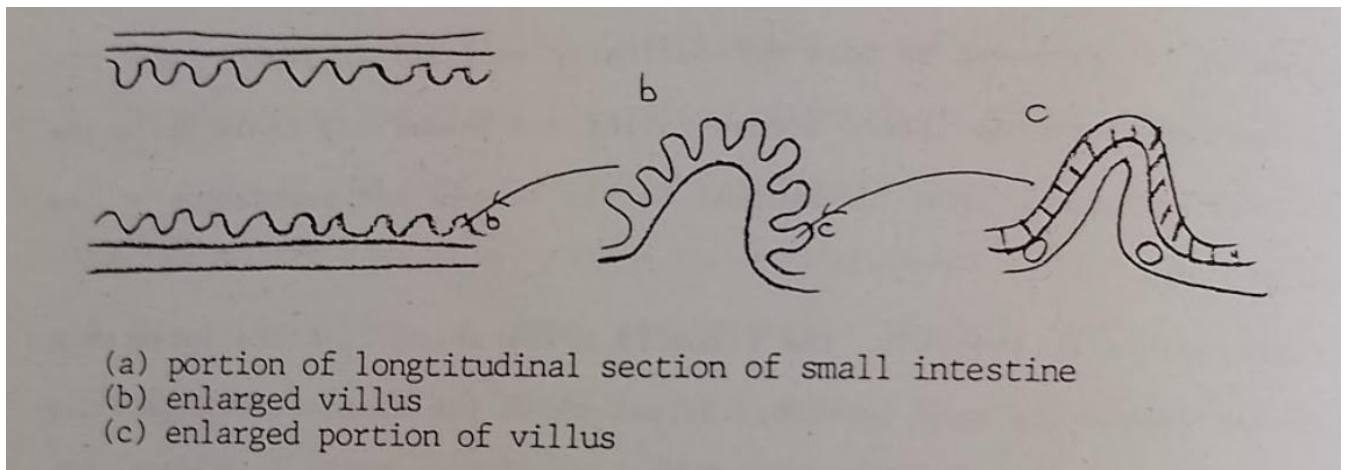
In describing the first, the yarrow preparation, Rudolf Steiner mentions the bladder of the deer - normally the bladder of a stag is used - the appropriate sheath to envelop the yarrow flowers. Now is not the time to go into detail. A more comprehensive description of the yarrow preparation and its components were given in several talks at the conference in Dornach last year. They have since been published in German [2]. The bladder is a concentration organ and at the same time an excretion organ. Rudolf Steiner refers to the bladder saying we have to consider the form aspect: "The bladder is almost a true image of the cosmos".

The second aspect is the substance of the bladder. It is built up in three layers. The inner layer is the mucous membrane which secretes slime to recreate the wall which is continuously attacked by the urine, especially the uric acid. It is therefore a layer with an active metabolic activity. A second layer consists of very thin muscles which rhythmically contract and expand. This layer represents the rhythmic pole. The third, the outer membrane belongs to the serosa which is part of the mesentery, this inner skin that lines the abdominal cavity and envelops all the metabolic organs. It is a sense membrane and represents that pole within the threefold structure of the bladder skin. So when we put the yarrow flowers into the bladder they come in contact with the inner, more lively metabolic membrane. The outer layer is exposed to the elements and the working ethers when the balls are hung up in the air in the summertime and buried in the soil in winter in the watery, salty earth below. Its sensory activity relates it to the outside world and whatever works there is now transmitted to the inner - to the yarrow blossom. It is concentrated there because it is preserved by this metabolically very active inner layer. The blossoms come into the inner, concentrating and preserving realm while the outer, sense active layer is exposed to the forces and substances of the outside world.

The sheaths of the next, the camomile preparation, are the intestines. Their skin shows the same threefold structure as the bladder although being an organ of digestion it is completely different.



We also must distinguish an outer layer which is part of the mesentery, the peritoneum, a mediating muscle layer, which causes the peristalsis: contraction and expansion. Finally there is an inner layer which consists of innumerable villi and has an enormous enlargement of its surface. Look at a villus, it has a wave-like skin and therefore again provides increase in the active surface. The villi have a double skin of cells through which the completely broken down substances of the intestinal tract are absorbed and carried away. Embedded in the mucous skin between the villi we find many lymph nodes and glands.



In this inner layer of the intestines the ether body unfolds an immense activity by excreting juice into their cavity. This juice has the capacity to break down the food completely, right down to its mere mineral components. Although the threefold structure of the intestinal membrane resembles the make-up of the bladder it is polar opposite in its function. The bladder is an organ of excretion at the end of the organism. It concentrates and releases what has become useless to the life processes. In contrast, the intestines are the entrance where the food is taken in and actively broken down. It is dissolved in water to enhance the life process.

Into the intestinal tube through which the food passed and was digested, we fill the camomile flowers. They come in close contact to this very lively mucousy intestinal wall. Again we have the phenomenon that the flowers are completely incorporated in this very metabolic realm, while the outer sensitive layer is in direct contact with the surrounding solid earth when the intestinal sausages are buried in wintertime. The rhythmical middle layer mediates what is sensed from outside to the interior, where it permeates the camomile flowers and is thus preserved.

Considering the sheaths of the first two preparations we move from the bladder, the exit of the metabolic system, to the intestines, its entrance. When we come to the stinging nettle preparation what sheath would be appropriate? We must step beyond the threshold of the diaphragm into the rhythmic system, the realm of the pulsating heart and the breathing lung. But heart and lung are not organs that can be used as a sheath. Now Rudolf Steiner makes two most remarkable comments about the stinging nettle. On the one hand he points out that in making the stinging nettle preparation no sheath is required, and then describes how the stinging nettle "should really grow around man's heart, for in the world outside in its marvellous inner working and inner organisation it is wonderfully similar to what the heart is in the human organism". We must not only be aware of the words with which Rudolf Steiner pictures the results of his spiritual research, but learn to listen and feel behind these words, in order to deeply grasp the idea in its spiritual context. If we try to imagine and feel this picture of the stinging nettle growing around one's heart we may discover a most remarkable truth. We may grasp the idea that what actually envelops the heart of the human being is the peripheral circulatory system. The arterial blood stream into the periphery is then transformed to venous blood and streams back. It is most remarkable

that the circulatory system evolved before the heart did. The heart is a later evolutionary development. If we take this picture seriously we could say that the stinging nettle should be enclosed by the whole circulatory blood system. But this is of course not feasible. On the other hand Rudolf Steiner mentioned that the stinging nettle does not need a sheath. It has the capacity to as it were cover itself. If we study the stinging nettle we will find that all the leaves are covered with tiny silica stings which break and release the burning histamine and formic acid when you touch it, Towards its periphery the stinging nettle is strongly astralised. It has the capacity, through this outer silica coat, to perceive what is working in the earth during summer and wintertime while it is buried there. It provides its own sheath to perceive and to preserve what is concentrated in its "inner organisation".

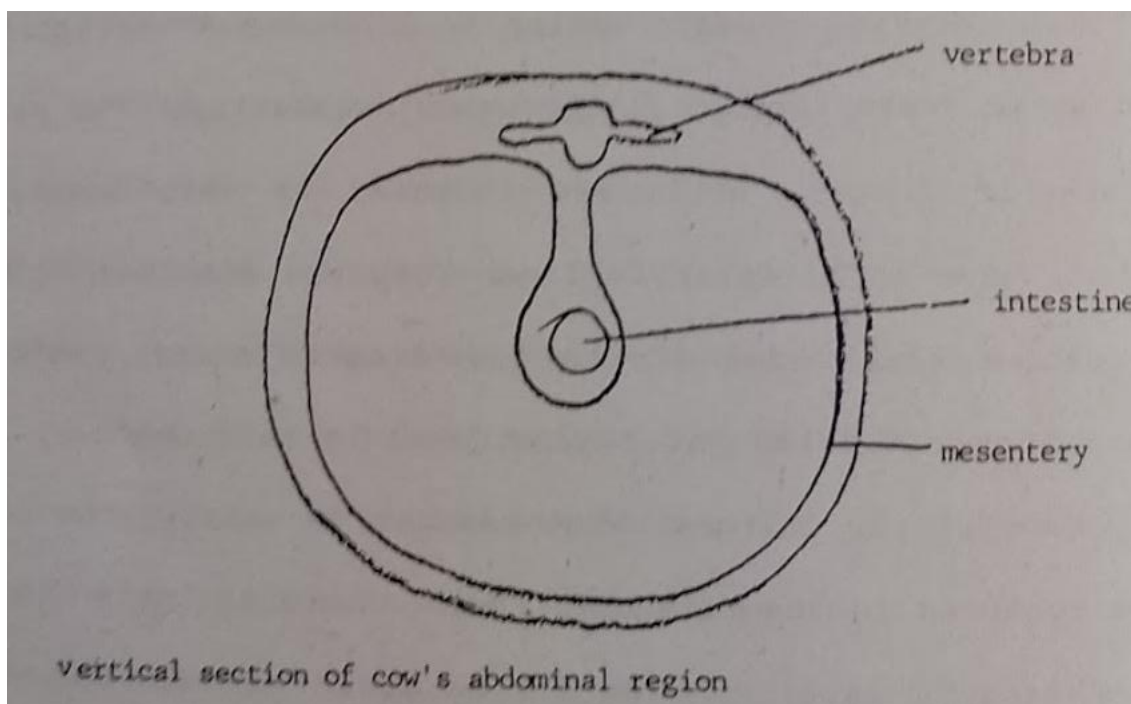
Now we have considered the first group of three preparations, which work from down below the earth to enliven, to refresh the soil and to sensibly organise its processes. With the second group we pass the threshold of the soil: They work from above. The first of these is the oakbark preparation.

We take the oakbark and put it in the skull of a domesticated animal. So regarding the sheath we now pass from the rhythmic to the head or sensory system. Why do we take the skull from a domesticated animal? The latter can be distinguished from the wild animal because in its physical and mental being is kept back in a more embryonic state. A domesticated animal does not develop right into the wild. When we approach it it doesn't run away, It comes towards you. It is ever and again a most remarkable experience, which seems so obvious, to enter a cow stable and see all the animals standing or laying there somewhat expecting you to come to milk, feed and care for them.

Their being is open towards you, to your guiding ego and towards their group soul. Looking from a higher aspect domestication means that in former times people were able to keep the animal back in its evolutionary development - manifest in morphological and physiological features - and thus to open its soul being to the group soul and to the guiding consciousness of man. This is the reason why I think that the skull of a domesticated animal is used for the oakbark preparation. The crumbled oakbark is filled into the cavity within the skull. The interior of the skull is lined with the bone skin. In contrast to the belly sheath we have been speaking of in which the inside was lined with a metabolic layer we find the bone skin in the skull to be a sensory membrane. It encloses the brain and reflects and concentrates into it all the forces of inner and outer perception that constitute the specific animal consciousness. Without this sensory sheath they would tend to get lost in the void. But by being reflected into the inside the animal is able to unfold its conscious soul being. Now in place of the brain we put the oakbark inside the skull and submerge it into decaying organic matter in a vessel or alongside a brook and let rain water drain through it throughout wintertime. The abundance of disordered etheric forces, which are released by this watery decaying organic matter, have an affinity to lime. They are absorbed by this well-structured calcium skull bone of the domesticated animal, sensed by the bone skin and then reflected and concentrated in this uniquely plant-born calcium structure of the oakbark. What happens is exactly the contrary to what we have observed in the metabolic realm. There the outer layer of the organs had a sensory capacity. The inside layer is metabolically active preserving organic residue (bladder) or enhancing organic decomposition (intestines). In the middle is the rhythmic layer of the expanding and contracting muscles. Here we

compose outside an environment of an active metabolism. Moon forces absorbed by atmospheric water permeate organic matter. Inside we have the sensory active skin which transmits to the oak bark what the middle layer, the skullbone mediates from the outside.

Now we step forward to the dandelion and to the question what kind of sheath is left in the sequence we have discussed so far. Can there be a further intensification of a sensing capacity in another organ beyond the skull? There is none. We have reached the forepart of the animal. And yet when we consider the ruminants there is an intensification. We find it by returning to the metabolic realm. There ruminants, and especially cattle, develop their higher but dreaming- sleeping intelligence. The mesentery is the physical carrier of this intelligence which the cow for instance develops in performing the "cosmic qualitative analysis" of the fodder and thereby comparing and composing the quality of the manure. In a higher sense the mesentery is the brain of the cow. As a sensory membrane it lines the inner sphere of the abdominal cavity and envelops all the organs within.



Going backwards in the cow and yet on a higher level than its sensory concentration in the head, we find this inner heaven, this wonderful mesentery which forms the *serosas*, the outer layer of the metabolic organs. As a thin interwoven transparent membrane it comes down from the spinal region of the abdominal cavity, envelops the intestines and goes back upwards again. So in between the spine region and the intestines we have spread out a double membrane, a sensory organ which is sensitive to both sides. We really have an intensification of the skull/ head function because this doubly active sensitive organ reflects and concentrates whatever the cow has perceived in analysing the composition of matter in the process of digestion. This happens mainly when the blood stream as carrier of the nourishing forces coming from the fodder flows up into the head, into the horn bone. There it cannot get any further; it gets dammed by the horns. The horn reverts the bloodstream back into the belly and then the peritoneum senses the result of this fodder analysis. It is

within this region that the cow develops her consciousness and her powerful astrality. We now envelop the dandelion flowers in the mesentery and we have an inner and an outer sensitive preserving layer towards the flowers and an outer sensitive perceiving layer towards the elements and working ethers, which we expose the wrapped up balls to, when we bury them during wintertime. So I think the mesentery of the cow as part of the peritoneum is the utmost we can find in nature to make this preparation. It really serves as a preserving, transmitting, concentrating and preserving organ.

When we finally come to the third of the second group of preparations, the valerian, there is no appropriate animal organ left in nature that could further enhance or concentrate the working of this unique herb. The diluted juice of valerian by itself has the faculty to create a sheath, wherever it is sprayed. As I understand, it is a sheath which consists of condensed warmth ether. It opens towards the spiritual, protects against influences of the natural environment and preserves the workings of its brother and sister preparations when we spray it over the compost heap. The compost or dung heap is enveloped by a warmth-sheath and thus becomes an individualised realm of well-organised decomposition of organic residue and humus formation.

When, in concluding, we look at the different sheaths we can comprehend their specific function both as being sense organs towards the outside world and concentration preservation organs and content. Their sense activity is a most essential part of the preparation process. It is the condition of what becomes this powerful concentration of forces in the humus-like substance of the preparations. But are preparations themselves sense organs? Yes they are, in the same sense as a germinating plant senses the sunlight and all the workings of the cosmic circumference. As germ they are sense organs in the physical mineral world. They sense the progressing cosmos and thus have the potential to overcome the physical, dead material in nature. They are as it were a resurrection substance. They do not perceive and concentrate into a picture, like an ordinary sensory organ, something which is there which has already evolved. The preparations draw in by a kind of perception forces and substances from the cosmos, which endow the earth with the power of a new becoming. They are germinating carriers of spiritualising evolving forces in the decaying physical-mineral world.

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