

Agriculture

LECTURE I,

(Rudolf Steiner, in his opening address to the audience of this lecture course which took place on the large farming estate Schloss Koberwitz in Silesia (Germany), sends his thanks to all who have co-operated in creating the occasion of these agricultural lectures and talks. He especially thanks Count and Countess Keyserlingk for their hospitality. He then continues:)

I am quite convinced that everyone here will be perfectly satisfied with the hospitality that has been provided. Whether you will be equally satisfied with the course of lectures itself is a question which is perhaps open to dispute, although we shall do our best during the discussions which will take place later, to reach accord on what has been said. For you must remember, that though in many quarters there has been an ardent desire for such a course of lectures, it is the first time that I have undertaken such a task from within the heart of Anthroposophical strivings.

A course of this kind naturally makes many demands, for it will show us to what extent the interests of Agriculture are bound up with those of the widest circles of human existence, and that there is scarcely a single sphere of life which has not some relation to Agriculture. From some viewpoint or another all the various interests of life are contained in Agriculture. Here we shall naturally only touch upon the central portion of the subject itself. But this necessity will lead us to detours which are inevitable, because everything which is said will have Anthroposophy itself as a basis. I would in particular ask you to forgive me if in the introductory lecture to-day there is much that seems so divergent from our subject, that many of you will not immediately see what bearing it has upon specifically agricultural problems. But what we shall say to-day of things which may seem remote will nevertheless be the basis of our work.

The cultural life of modern times has had particular and serious effects upon Agriculture. It has had economic consequences, the destructive character of which few people today have the slightest idea. And it was in order to defeat these tendencies that certain economic enterprises were attempted within the Anthroposophical Movement. This work was undertaken by industrialists and business men, but they did not achieve all the aims they had set themselves, simply because at the present time there are too many opposing forces to allow for this attempt being really understood. The individual is helpless in the midst of these existing hostile powers, and the inner kernel and essential aims of these economic strivings which originated in the Anthroposophical Movement have therefore never really come under discussion.

What were the practical questions at issue? I will explain them, taking Agriculture as an example in order to deal with the matter in concrete rather than in abstract and general terms. There are to-day a great many books and lectures on so-called Economics. These contain chapters on Agriculture; the authors try to deal with this subject on the basis of economics. Now in connection with agriculture this whole business, books and lectures an economics is manifest nonsense. This nonsense is, however, very wide spread to-day. Everyone should be able to see that Agriculture and its place in the social order can only be discussed when one starts from a knowledge of what is entailed in the growing of turnips potatoes and corn. Without this it is useless to discuss principles of Economics involved. These things must be unravelled on the basis of the actual facts, they cannot be established on vague theoretical assumptions, If you say this to those who have listened to a number of their university col-

The Commentary

I first began my relationship with the Agriculture course in 1976 when I began working at Weleda NZ as a gardener. Since that time I have read it through many times and contemplated its contents continually since. It is a very revolutionary document for my Anglo - Christian cultural background and has required quite some mind bending to come to terms with its suggestion for a sustainable world view.

Naturally the preparations have become the focus of many peoples attention since the course, however this is often at the lose of interest in the context in which the rest of the course sets them in. This context is unusual by our modern standards, however the more I have worked with it the more I see the context is what is needed to understand the preparations, to the point where they can be worked with more creatively than just spraying 500 and 501 and putting the compost preparations into compost heaps. Which without the context of the course, as a guideline, is the safest way of using these preparations.

The agriculture course is a difficult document. Not only for the basic concepts it provides but also due the complexity of these concepts and the apparent manner in which some of the main ideas appear to contradict themselves as the course goes on. It is as if we are not presented with all the lectures , presented in 1924, so that we have some gaps that are not explained to us.

It is from this basis that I have taken the bold step of attempting to fill in the gaps that exist in 'Agriculture'.

The first translation of the course I came across was the blue 1979 edition, which I consider to be a very confusing book. If it was not a conscious attempt to disguise the message in the course, it shows the vague understanding of the course, present at the time of its publication.

To my good fortune I came across this 1938 edition in a private library, and have found it a more cohesive translation than the blue one . It fits more closely to images presented in Dr Steiner's medical lectures and gives a translation with more emphasis on the spiritual bodies activity as the basis of its

leagues talking about Economics in relation to Agriculture it will strike them as completely absurd because they regard the subject as already established. But this is not the case. Judgment in agricultural matters must come from practical knowledge of field and forest and of the breeding of animals. There can be no fruitful vision in agriculture or in anything else so long as people do not realise that this hovering over the subject from the point of view of Economics is mere talk and nothing more; one must go back to the practical foundations in every department of life. You can say of a turnip that it has such and such a colour and consists of such and such constituents, But that is not to understand the turnip - not by a long way, nor, above all does it take into account the living relationship of the turnip to the soil, to the season at which it ripens, and many other important matters ,

(The Magnet—1)

Let me make this clear by an illustration taken from another sphere. If you observe the needle of a compass you discover that one end always approximately points to the north, the other to the South. But you seek the cause for this not in the magnetic needle itself but in the earth as a whole, at one end of which is what is called the Magnetic North, at the other end is the Magnetic South Pole. To try and discover from the magnetic needle itself why it should so obstinately turn in one direction would be absurd. For its constant maintenance of direction can only be understood in relation to the whole earth. Yet what in the case of the magnetic needle is clearly absurd is regarded by many people as sense when it comes to other things. The turnip is regarded as growing only within the narrow confines of its immediate earthly surroundings, but this becomes impossible if one comes to the point that its growth may be dependent upon innumerable factors which are not present on earth at all but in its cosmic surroundings.

And thus in practical life many things are explained and ordered to-day as though we had to do only with the narrow isolated phenomenon, and not with activities and influences coming from the whole Universe. The various departments of modern life have suffered very gravely through this and would have suffered still more had not people continued to rely on a certain instinct in these matters in spite of all advances of modern science. To turn to a completely different sphere, it has always been a source of satisfaction to me that people who following their doctor's orders, weigh every morsel of the food they eat - so many ounces a meat, so many ounces of cabbage (some people even have scales on the table beside their plates) - it is always a source of satisfaction to me, when the unfortunate individual still feels hungry, so long as he has not had enough, and thus proves that instinct is still present in him. In the same way, instinct was at the root of all the work of man in this realm before there was a science of the subject, and its indications were often very sure ones. The old calenders with their versified rules of practice that one still finds among peasants are often surprisingly wise and expressive. And it is quite possible for a man with sure instincts to avoid superstition in these matters. For along with very profound sayings concerning the sowing and reaping of grain we get occasional sayings directed against extravagances for example "If the cock crows on the dunghill it will either rain or keep fine" (Kraht der Hahn auf dem Mist, so regnet es, oder bleibt wie es ist) Instinctive wisdom is always sufficiently armed with a sense of humour to be on its guard against superstition.

(Instincts—2)

understanding.

A standpoint I have taken and used as the basis for my own work.

In this publication I am attempting to 'fill in the gaps' by providing explanations for the areas that at time cause confusion or difficulty. I have provided a background to my approach in my book "Gyroscopic Astrology" which is freely available on the Garuda Biodynamic website, - <http://get.to/garuda>. I will draw upon the material I presented there as the basis to work into 'Agriculture' from.

Gyroscopic Astrology is a companion to this work.

(1) The Magnet

This paragraph outlines an important perspective for the whole course. RS is showing that life on earth is more influenced by unseen forces of the cosmos than it is by the physical substance we see. We are continually presented with the picture that the environment we must consider, encompasses not only the soil we work, but also the fact that the earth is a planet which exists in a solar system, which in turn exists within a galaxy. It is within this context that we have to understand how the turnip grows. I have explored the astronomical basis of this understanding in 'Astronomical Science' through to 'The Big Picture'.

An essential standpoint to appreciate is that the Fixed Stars we can see, emit a constant stream of force, which from our standpoint on Earth - and our 80 years of life- can be seen as constant and relatively unchanging. It is within this constant field of force that the solar system finds itself. The solar system itself is in turn existing due to the relative consistent activity of the Sun. Its emissions do fluctuate and these fluctuations have been found to effect life's manifestation on Earth. However the fluctuations are within such a constant range that life has continued to be present on earth for some billions of years.

The other moving parts of our environment are the predictable movements of the planets within the solar system. These too, are highly predictable and constantly repeating their

Speaking from the Anthroposphical point of view what we have to do is not so much to return to the old instincts as, through a deeper spiritual insight, to discover things which can be applied ever less and less by the instincts as they have become uncertain.

This task demands that in studying the life of plants, animals and the earth itself we should extend our views to the whole cosmos. For while it is quite right to reject a trivial connection between rain and the phases of the Moon, yet on the other hand the following has happened, I have told the story already on other occasions. In Leipsic there were two professors one of them Gustav Theodor Fechner, a man gifted with keen insight in spiritual matters, claimed that from external observations which he had made, the existence of a connection between periods of rain and the course of the Moon around the earth was not a mere superstitious belief. He had come to this view through statistical evidence. But his colleague, the famous Professor Schleiden denied the contention on theoretical grounds. These two university professors were both married and Fechner who had a certain sense of humour, said: "Let our wives decide which of us is right" Now it so happened that in those days at Leipsic, water was scarce and had to be fetched from a distance. So it was the custom in order to have sufficient for washing day, to collect rain which ran from the houses in pitchers and barrels. Frau Professor Schleiden did this, and so did her neighbour Frau Professor Fechner. But there was not room for them both to set out their pitchers and barrels in the courtyard at the same time. So Professor Fechner said: "If my honoured colleague is right and the time of the month does not matter, then Frau Professor Schleiden can put out her pitchers at the time when according to my reading of the lunar phase there will be less rain, and my wife will put out hers during the period when my calculations tell me there will be more rain. If my theory is all nonsense, Frau Professor Schleiden will no doubt gladly fall in with this arrangement," But lo and behold! Frau Professor Schleiden would do nothing of the sort and preferred to go by Professor Fechner's statement rather than by that of her husband.

And so it often happens Science may be right, but practice cannot be ruled by "the rightness" of science. But to speak more seriously. This example has only been introduced in order to show that we must look a little further than we are accustomed to look nowadays when we are considering that which alone makes it possible for man to live on this planet - I mean Agriculture. I cannot say whether what I am going to say out of Anthroposophy will be satisfactory to us. In every respect, but I shall try to bring before you what Anthroposophy can contribute to Agriculture.

I will now begin to draw your attention to some facts within our earthly existence which have an important bearing upon Agriculture. We are so accustomed nowadays to lay the chief stress upon the physio-chemical constituents of any substance. Now I propose to start from an examination not of the physio-chemical constituents, but of something which lies behind them and is of very special importance to the life of the plant on the one hand and of the animal on the other. Human life, and to a certain extent the life of animals as well has become emancipated to a large extent from world workings outside them. The nearer we come to man, the more strongly marked is this emancipation. In both human and animal life we find manifestations which seem to be entirely independent of extra-terrestrial influences or even of the atmospheric influences surrounding the earth. Not only does this seem so,

rhythmic relationship to each other.

So we have a constant field of force, created by the fixed stars, which is filtered and altered by the electro-magnetic fields of the constantly moving, but highly predictable planets. It is within this realm of force that we exist and upon which matter organises itself.

(Instincts -2)

As we come into more intuitive times this statement is becoming one of import to reflect upon. In recent years the phenomena known as dowsing coupled with radionic devices has become a favorite of some of biodynamic practioners. This practice allows one to unconsciously determine radionic homeopathic potencies of the BD preparations, which are then rayed over sometimes very wide areas.

It is in comments like this that we are challenged to work with his suggestions in the course, as a basis for a conscious spiritual science. He asks that we work into nature with as much understanding and awareness of the physical and spiritual aspects of creation as we can. When being with nature, we should consider the relationships he describes in the follow pages, as the basis for being awake, with our actions. It is the challenge of our time. The challenge to develop a new sense organ in humanity. The organ for conscious perception of the spiritual activity within which we live. The ability to bring a scientific like awareness to how the spiritual forces work together to manifest daily life. This opportunity is bestowed upon us, due to the ongoing incarnation of the Spirit into humanity, which reached a certain point of maturity with Christ. In the intervening 2000 years the spirit has continued to become stronger in us, with scientific pursuit being one of its manifestations. This scientific activity can be bought to bear onto the more hidden sides of creation, as just well as to the physical science we have today.

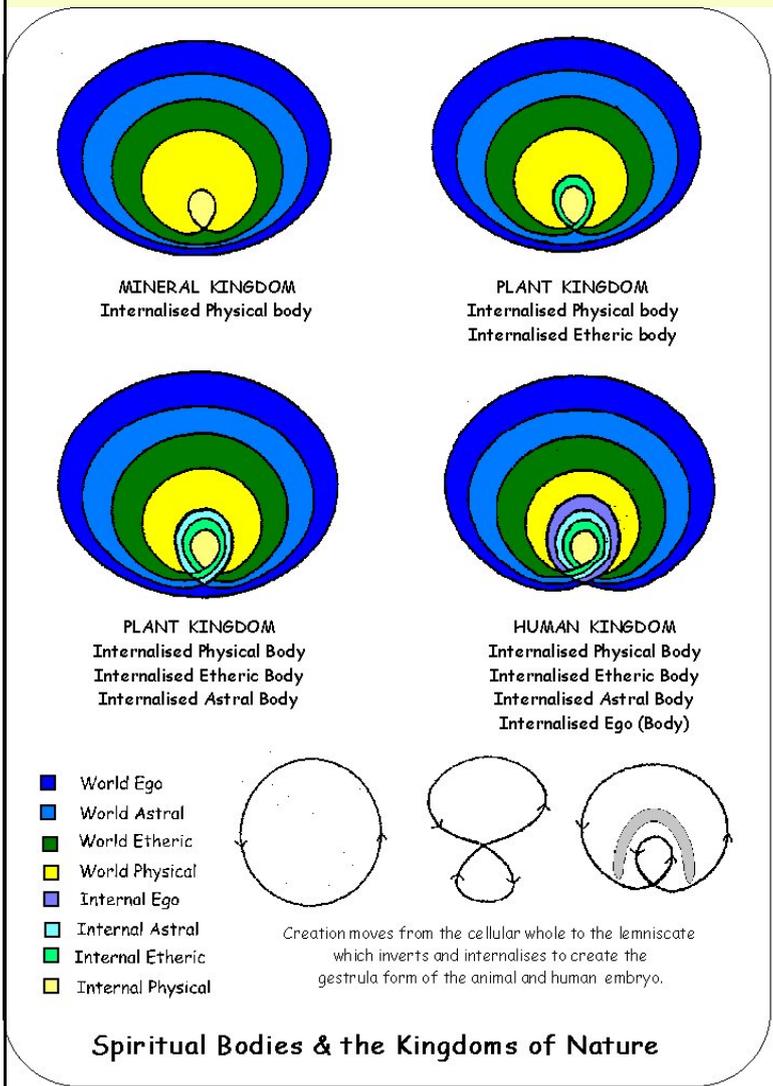
It is in the development of this science of the spirit, that humanity develops a new 'organ', it can then move forward with. This is Dr Steiner's challenge and no doubt one of the reasons, he bothered to give the eight lectures of this course, rather than just giving us the preparations and saying go forth and dowse the answers.

He has provided a picture , as best he

but it actually is the case in regard to many things in life. True, we know that certain atmospheric changes will accentuate the pain attending certain illnesses. What is less well known is that certain illnesses and certain other life phenomena imitate in their rhythms the course of certain processes in nature, but do not coincide with those of these natural processes in their beginnings and endings. We need only recall one of the most important phenomena, female menstruation, which in its rhythmic character is an imitation of the monthly changes of the Moon, yet the beginnings and endings of the two phenomena do not coincide. There are many more intimate manifestations - both in the male and the female organisms, which imitate the rhythms of Nature. For example, a closer study of the periodicity of sun-spots would bring us to a better understanding of much that happens in the social life. But these things are not noticed, because the social phenomena which corresponds to the periodic change of the spots on the sun, does not begin and end when they do, but has become emancipated from them. The periodicity and rhythm are the same but there is no coincidence in time. It is easy enough to dismiss as nonsense the statement that human life is a microcosm which imitates the macrocosm. If for instance one refers to certain illnesses having a period of fever which lasts seven days, it could be objected that whenever the fever corresponding external phenomena occurred in nature, the fever ought to appear and run a parallel course; but the fever does not do this! Nevertheless it is true that the fever retains the inner rhythm even if its beginning and end do not coincide with those of the external event. This emancipation from cosmic events is almost complete in the case of man; it is less complete in the animal; while plant life is to a high degree immersed in the general Cosmic life of Nature and also in its earthly surrounding. **For this reason we shall never acquire any real understanding of plant-life unless we realise that everything on earth is only a reflection of what takes place in the cosmos.** This reflection is hidden in the case of man because he has emancipated himself. He carries within him the inner rhythm. But the connection is still there in the highest degree in plants and it is to this that I wish to direct your attention in this introductory talk.

In the immediate vicinity of the earth, we have the Moon and the other planets. The old instinctive science which reckoned the Sun, as one of the planets had one of the following sequence Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn. Now without going any further into the astronomical aspect of the subject, I wish to point to the

could outline, and be translated into English, which we need to discover and conceptualise before adding flesh and skin too. He is challenging us to do the acts of the ancients, in working with



plant growth, but to do it with awareness and knowing. Luckily he left a heap of signposts for us to start with.

The context

Dr Steiner is describing what happens, due to the different spiritual make up of the various kingdoms of nature. Life on Earth occurs because the great "World" spheres of creation, the galaxy, the solar system and the atmosphere are concentrated and enveloped into LIFE. Each higher kingdom comes about due to the incarnation and envelopment of the next outer sphere.

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Humanity has all four spheres incarnated, while the Plant kingdom only has two. Therefore the two 'world bodies' still not incarnated work more strongly from the outside. I say more strongly, because their action does work into the depths of the incarnated bodies, and we will find their imprint in many internalised activities.

Ptolemaic Planets

This ordering of the planets was recognised by Ptolemy, and has significance from the point of

relation which exists between planetary life and life on the earth. If we consider life on the earth in general the first thing we have to take into account is the very important part played by the what I might call **the life of the silicious substance in the world**. You will find this silicious substance in the very beautiful mineral quartz enclosed in prismatic and pyramidal forms. Quartz is silicious substance combined with oxygen; remove the oxygen mentally, and you have the so called silicon. This silicon is regarded by modern chemistry as one of the elements (oxygen, etc.) and when united with oxygen may be regarded as a chemical substance. But we must not forget that this silicon which lives in the mineral quartz makes up from 47% to 48% of the crust of the Earth, i.e. a higher percentage than that of any other substance on earth, oxygen, for example, amounting only to 27% to 28%. Now silicon, in the form in which it appears in such stony substances as quartz, does not at first seem to possess very much importance if we consider only the material of the soil of earth with its plant growth. Quartz is not soluble in water - the water trickles through it. It thus seems to have no connection with the ordinary commonplace view of "conditions of life". But if you take the Equisetum (horsetail) you will find that it consists of 90% of silicon (the same substance of which quartz consists) in very fine distribution through its form. This shows the enormous importance which this substance, silicon must have. It forms nearly one half of everything on the earth, And yet so completely has its importance been overlooked that its use has been neglected even where it can have the most beneficent results. Silicon forms an essential constituent of many remedies used in Anthroposophical therapy. A whole series of diseases are treated either internally or by baths with this substance, the reason being that what appears in the form of abnormal conditions of the sense organs, (it only appears there, it does not really lie there) the internal sense organs, as a cause of pain is strangely accessible to the influence of silicon. And in general silicon plays the greatest conceivable part in what has been called by the old-fashioned name of the "household of Nature". **For it is present not only in quartz and other stones, but in a highly refined state in the atmosphere.** Indeed it is present everywhere. One half of the earth at our disposal consists of silicon, what then is the function of this substance?

To answer this question let us assume **that our earth contained only half of the quantity of silicon** which it actually does possess. We should then have plants in more or less pyramidal form: the blooms would be atrophied and indeed all plants would assume generally the shape of the cacti which strikes us as so abnormal. The cereals would look grotesque; their stems would grow thick and fleshy towards the base, but the ears would be emaciated and without grain,

So much for silicon. On the other hand in every part of the earth, although not in such abundance as is silicon, **we find lime and their allied substances** (limestone, Potash and Sodium). **If these were present in small proportions** we should have plants whose stems were only narrow and twisted we should have only creepers.

view that the planets are organised, in the order of the length of their astronomical rhythm, as experienced from Earth.

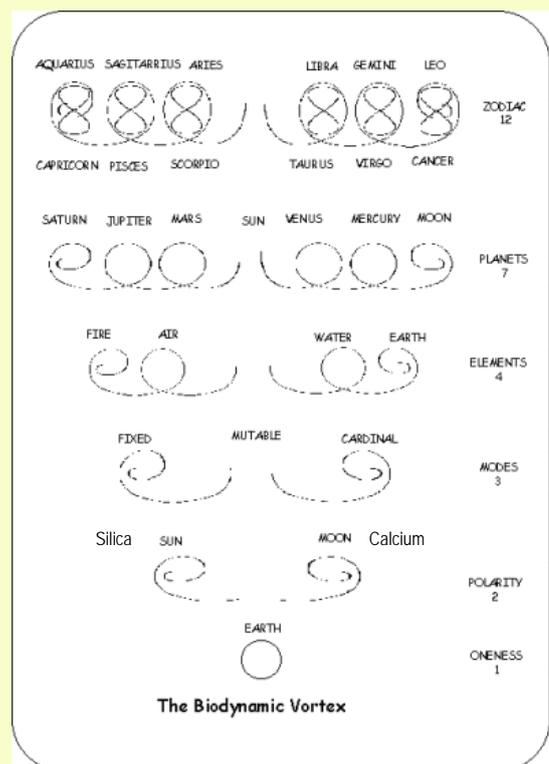
The moon has the quickest cycle around the Earth. The other planets are then lined out according their cycles around the Sun. The Sun is placed in its relationship to the Earth, as well. Taking the Earths natural place in the order. This is the Geocentric view of the world, needed when working with physical life on Earth. A significant division of the planets that becomes apparent from this division is the grouping of the planets beyond the Sun, called the outer planets, and the grouping of planets between the Sun and the Earth, called the inner planets.

Plant Growth, the Planets, Calcium and Silica

This section contains the first indications of the two major processes we need to come to know intimately.

Keep these images in mind, as understanding how the Calcium and Silica streams of activity work together, is one of the major questions of the agriculture course. RS can appear to be unclear about the complexity of their relationship, at times seeming completely contradictory, however a closer reading provides us with a coherent picture. We just need to join a few dots to see it clearly.

In this lecture we are introduced to Silica and Calcium in relatively general terms. We are told of their influences on plant growth as well as their relationship to the planetary groups. Here we are presented with our first experience of the multi-layered world view RS works with. My chapters in "Astronomical



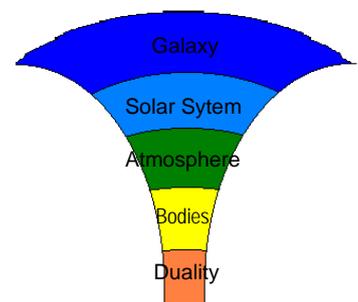
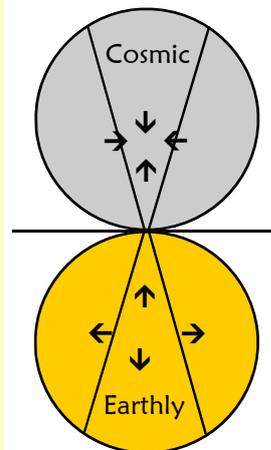
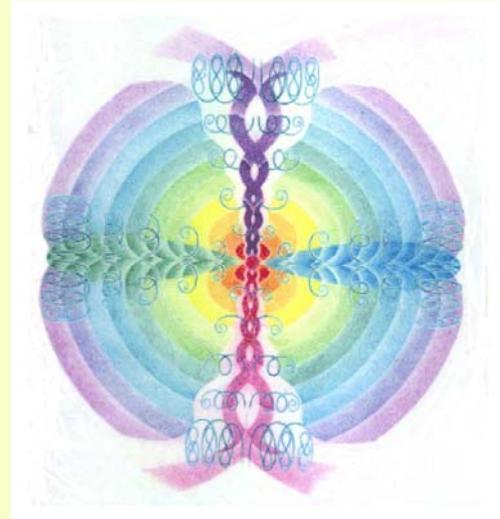
There would be blooms of course but they would be useless and yield nothing of any food value.

It is only through the balance of these two formative forces - as embodied in these two substances, silicon and limestone - that plant life can flourish in the form in which we know it today.

Now everything silicious contains forces that come not from the earth but from the so-called distant planets- Mars, Jupiter and Saturn - the planets beyond the Sun. These planets work indirectly upon plant-life through silicon and allied substances. But the planets near the Earth- Moon, Mercury and Venus, send out forces into the plant life and animal life on earth through the medium of the limestone and kindred substances. Thus of any cultivated field it may be said that the forces of both silicon and limestone are at work in it. The silicon mediates the influences of Mars, Jupiter and Saturn, the limestone those of Moon, Venus and Mercury.

Now let us turn to the plants themselves. There are two things to notice about all plants. The first is that the plant world as a whole and every single species have the power to perpetuate their kind and develop the force of **reproduction**, etc. The second is that the plant as a member of a relatively low order of nature serves as **nourishment** for members of higher orders. These two fundamental tendencies seem at first to have little to do with one another. For if we only look at the passing on of the step from parent plant to offspring and so on, it is a matter of indifference to the formative forces of Nature whether or not the plant is used for food. The two interests (i.e. of nature and Man) are completely different, and yet the forces of Nature act in such a way that the inherent powers of reproduction and growth and of producing generation after generation of plants, are active in the cosmic influences exercised upon earth by the Moon, Venus and Mercury through the mediation of limestone. If we consider plants which are not used for food, which do nothing but reproduce themselves, we take no interest in the cosmic forces of Venus, Mercury and Moon, related to reproduction. But in the case of plants which are eminently suitable for food because their substances have become perfected to the point of forming foodstuffs, for human and animal consumption, it is the planets Mars, Jupiter and Saturn that are working through the medium of silicon. **Silicon opens up the being of plant to the expanses of the Universe, it awakens the plant's senses**, so that it absorbs the formative forces bestowed by the distant planets, Mars, Jupiter and Saturn. **From the sphere of Moon, Venus and Mercury** on the other hand, **the plant**

Science" show the development of the 'Biodynamic Vortex' which show the main players of the multi layered reality we live in, It outlines how this duality, of Calcium and Silica acts as the base for the higher levels manifest in the world spheres of our creation. This Vortex form is only one part of a greater picture we need to gain an appreciation of. In "Astronomical Science", I outline the basic structural form of astronomical creation, as the gyroscope.



An essential part of the gyroscopic form, especially on the vertical plane are the vortices, which develop into its poles. These vortices stem from the central 'black hole' formation found at the center of every gyroscopic being. Thus if we looked down it we would have a cross section of the various layers of gyroscopic creation.

When looking at our creation we need to visualise the major layers as part of the vortex and see how two opposing streams of centrifugal and centripetal activity flows through them. This basic duality is seen at many levels of creation and acts as a primary form we can apply to understand lifes' manifestations.

The Earth and the Cosmos form one such duality. It is this astronomical reality we need to begin with. We

absorbs only that which makes it capable of reproducing itself. Now this seems at first to be just an interesting theory. But every insight taken from a wider horizon leads us quite naturally from theory to practice.

If then certain forces coming from the Moon, Venus and Mercury enter the Earth and become effective in plant life, the question arises: **What will promote and what will restrain the activity of these forces?** For Instance in what way can the activities of Moon or Saturn be modified in their influence on plants? If we observe the course of the year, we shall find that on some days there is rain and on others none. All that the modern physicist observes is the fact that on rainy days more water falls on the Earth than on dry days! Water moreover is to him something abstract consisting of oxygen, hydrogen, and nothing more. If water is decomposed by electrolysis it is split into two substances, each of which acts in its own way. But this tells us nothing about water, There is much more hidden in water than appears in the chemical properties of hydrogen and oxygen. Water by its very nature is eminently fitted to bear along with it the forces coming from the Moon on to the Earth. So It comes about that it is water which distributes the lunar forces throughout the earthly realm. There is a certain kind of relation between the Moon and the water on the Earth. Let us suppose that after a rainy spell there is a full moon. Now the forces coming from the Moon when it is full causes something tremendous to happen on Earth. They shoot right into the whole growing forces of the vegetable kingdom. They cannot do so if there has not been a rainy spell beforehand. We must always realise the importance of sowing seed after rainy days followed by the full moon and we should never work at random (true, something will always come up). The question: How to connect our seed-sowing with rain and full Moon has definite practical importance, because the forces that come from the Full Moon work powerfully and abundantly on certain plants after rain but only weakly and sparingly after a spell of sunny weather. The old adages of husbandry contained such knowledge. People recalled the adage, and which told them what to do. These adages or saws are looked upon nowadays as superstition and scientists are not yet sufficiently interested to work out a real science of the matter.

Furthermore around the Earth we find the atmosphere. In addition to consisting of air, the atmosphere has the property of being sometimes warm and sometimes cold. At times there is certainly accumulation of heat which, if the tension becomes too great, may discharge itself in a thunderstorm. Now what can we say about warmth? Spiritual observation shows that while water has no relation to silicon, warmth is so powerfully related to it that it enhances the activity of the forces working through silicon, namely, the forces coming from Saturn, Jupiter and Mars. These forces coming from Saturn, Jupiter and Mars have to be valued on quite a different scale from that adopted in the case of Moon Venus and Mercury, for it must be remembered that Saturn takes thirty years to go round the Sun, while the Moon takes only about twenty-eight days to pass through all its phases. **Thus Saturn is only visible for fifteen years**, consequently stands in quite another relation to the growth of plants compared with the Moon. As a matter of fact Saturn is not only active when it is shining down on the Earth, it is also active when its rays have to pass from below, as it were, through the Earth.

Now as Saturn takes thirty years to revolve around the Sun we find that at certain times It shines directly on one spot on the Earth and that it can work upon this spot by going right through the Earth (See diagram No 1). The strength with which the Saturn forces influence plant life on Earth always depends upon the warmth-condition of the air. If the air is cold they cannot reach the plants, if the air is warm they can. How then can we see their influence at work in the plant? We see it not in the annuals but in the perennials; not in those plants which grow up and die in the course of one year leaving only their seed behind them but in those which are perennial. It is the latter whose growth Saturn promotes with the help of the warmth forces of the Earth. The effect of these forces working through the mediation of warmth, is to be seen, for instance in the bark or cortex of trees and in everything that makes the plant a perennial. When the lives of plants are limited to the short span of a single year, it is because of the relation in which those plants stand to the planets with short periods of revolution. On the other hand, that which emancipates itself from the fleeting process and is made

Growth & Reproduction
Calcium - Inner Planets
Water
Centrifugal

Nutrition & Food
Silica - Outer Planets
Warmth
Centripetal

have the Cosmos above and the Earth as the basis of our living activities. Rudolf Steiner is not as clear as we would like here, but it is accepted that in this lecture he is describing the outer planetary activities in regard to the Silica processes, as working in the Cosmos, and the Inner Planetary activities as working from the Earth.

What will promote and what will restrain the activity of these forces?

This can be seen as THE central question of the whole course. Everything from this point on in the course is giving us hints as to how this aim can be achieved.

Saturn Visible

Saturns fifteen years appearance comment refers to Saturn's astronomical cycle around the Sun. This takes 30 years. It has an elliptical orbit however this orbit is on an angle with regards the Sun's ecliptic. So when it goes around the Sun it spends 15 years above the ecliptic and 15 years below the ecliptic.

From higher latitudes this could mean that Saturn is not visible in the sky for the 'lower' part of its cycle. Generally though Saturn is visible all the way through its cycle in most parts of the Earth.

There is also the annual ascending and descending of Saturn caused by the rotation of the Earth. Due to the Earth's tilt, as it spins around each day Saturn

permanent in the formation of bark around the growing trees is connected with the planetary forces working through the mediation of warmth and cold, and the periods of revolution in these cases are long. Thirty years in the case of Saturn, twelve in the case of Jupiter. Again it is well for anyone who wants to plant an oak tree to know something of the periodicity of Mars, for an oak tree planted during the appropriate period of Mars will thrive much better than one planted unthinkingly, at any moment that happens to be convenient. Or, if you have a plantation of conifera, where the Saturn forces play so great a part, it will make all the difference if the trees are planted when Saturn is in the so-called ascending period or at another time. Anyone who has insight into these matters can tell quite accurately in the case of plants that are doing well or badly whether or not they have been tended with a right understanding of their relation to planetary forces. For what is not always obvious to the external eye is revealed to more intimate observation.

To take for example; If we burn wood taken from a tree which has been planted without an understanding of the cosmic rhythms we do not get such a healthy heat as from wood taken from a tree which has been planted with right understanding. It is precisely on the little matters of everyday life that these things play so great a part and that the importance of such differences are revealed. But people live their lives almost unthinkingly. They do not take the trouble to consider such details and everything goes on like a machine. If you pull the right trigger, the machine works, and the materialistically-minded imagine that the whole of Nature works on the same principle. And yet regarding Nature so and working upon her in this way brings us face to face with certain stupendous results in practice. Why, for instance is it impossible to-day to obtain such fine potatoes as I remember eating in my youth? It is impossible to find such potatoes even in the districts in which they used to be grown (It is really so I have tested them everywhere). The nutritive forces of certain foods have actually declined over a passage of time. The last decade shows this quite distinctly. The reason is we no longer understand the intimate forces at work in the whole cosmos. These must be sought for once again, and sought for along such lines as I have indicated to-day by way of introduction. I have merely touched upon certain questions which extend far beyond the horizon of contemporary vision. We shall not only continue this consideration, but shall search more deeply for a means of applying it to practical life.

will rise and fall, but as it goes around the Sun there are rising and falling periods as well.

All of the planets have these rising and falling periods as they all have orbits at variance to the ecliptic. Research carried out by Maria Thun, Agnes Fyfe, Lili Kolisko and more recently by Nick Kollerstrom, into the influences of the moon on plant growth has shown a direct relationship to the movement and activity of sap in the plant.

The relationship of plant types to the planets has been explored further and the main plant types can be associated as follows:

	Saturn	Conifers
	Jupiter	Deciduous
Trees		
	Mars	Shrubs
	Sun	Clovers /
grasses		
	Venus	Alpine flowers
	Mercury	Vines
	Moon	Vegetables

Subdivisions of each of these groupings can also be made for example for the vegetables

Saturn	Solanace / Tomatoes
Jupiter	Umbells / Carrots
Mars	Legumes / Beans
Sun	Lillies / Garlic
Venus	Brassica / Bro-

